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WSEG REPORT 116

AIR-TO-AIR ENCOUNTERS IN
SOUTHEAST ASIA (U)

Volume II: F-105 Events Prior to 1 March 1967

September 1968

Comprising
IDA REPORT R-123

BEST AVAILABLE COPY

John S. Attinello, Project Leader

AD No. 1168-1087/R 103

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INSTITUTE FOR DEFENSE ANALYSES
SYSTEMS EVALUATION DIVISION

WEAPONS SYSTEMS EVALUATION GROUP
400 ARMY-NAVY DRIVE, ARLINGTON, VA.

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FOREWORD

This report is a product of the Systems Evaluation Division of the Institute for Defense Analyses in conjunction with the Weapons Systems Evaluation Group in response to WSEG Task Order SD-35-T-104, as modified in a memorandum for Director, WSED, from Director, WSEG, dated 4 August 1966. The memorandum resulted from a request by the Deputy Director, Tactical Warfare Programs, ODDR&E. The Task was coordinated with the Joint Chiefs of Staff, (J-3 and J-5).

The RED BARON Project produced four volumes. Those members who made primary contribution to Volume II were as follows:

Velma M. Archer	Ralph L. Kuster, Jr., Maj., USAF
John S. Attinello	John W. Rubino
Douglas N. Beatty	Richard C. Stewart, Capt., USN
Floyd A. Friesen, Cdr., USN	Earl A. Thomas
Charles W. Gardner	John W. Walden, Cdr., USN
Howard K. Hostler, Maj., USA	David D. Young, LCol., USAF

At its inception (October 1966) the RED BARON Project team consisted of:

John S. Attinello, Project Leader
Douglas N. Beatty, Ass't Project Leader
John W. Walden, Cdr., USN, Senior Navy
Malcolm J. Agnew, LCol., USAF, Senior Air Force

Phillip J. Conley, Jr., LCol., USAF, and Thomas J. Hughes, Capt., USN, also worked part time on the project from its inception, primarily acting as an interview-debrief team. LCol. Agnew and Cdr. Walden were the other team.

In November John Rubino, Charles Tiffin, William Eason, Capt., USN, and Charles R. Shaw, Col., USA, joined the project.

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In December, Robert J. Lynch, Jr., Col., USMC, joined, and Philip Brooks, Col., USAF, became Senior Air Force representative. Richard C. Stewart, Capt., USN, was assigned in February 1967. These later military arrivals shared their time with other WSEG projects.

While developing interview methods and techniques, the project was valuably assisted by two psychologists from IDA/RESO, W. Sinaiko and W. Richard Kite.

For interviews in the U.S., teams consisting of military and civilian project members supplemented the two teams designated initially to collect data in the combat theater. In the SEA theater, two Navy-Air Force teams (Conley-Hughes and Agnew-Walden) conducted the interviews. LCol. Agnew and Cdr. Walden also interviewed SEA returnees at European bases.

As interviews were conducted, it became apparent that much more data were being collected than had been initially estimated from official reports. Therefore, a rapid increase in qualified personnel was needed to collate the data for publication.

Roy G. Anderson, Rear Admiral, USN, Senior Navy Member of WSEG, through appropriate channels, obtained the services of four Navy fighter pilots for a period of two weeks. The assistance to the RED BARON Project of the following Navy pilots is acknowledged:

Dennis E. Becker, Lt., USN
Benjamin Cloud, LCdr., USN
Samuel C. Flynn, LCdr., USN
William D. Kiper, LCdr., USN

A. J. Beck, Major General, USAF, Senior Air Force Member of WSEG, with the cooperation of Headquarters, USAF, obtained the services of nine tactical fighter pilots for a thirty-day period. The assistance to the RED BARON Project of the following Air Force pilots is acknowledged:

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Thomas H. Curtis, Maj., USAF
Leslie C. Long, Capt., USAF
Robert S. Maxwell, Capt., USAF
R. P. Moore, Maj., USAF
Sam P. Morgan, Jr., Capt., USAF
Michael G. Pennacchio, Capt., USAF
William P. Robinson, Maj., USAF
Ronald W. Scott, Capt., USAF
Ronald J. Ward, Maj., USAF

The project also acknowledges the assistance of the following individuals who assisted the interview teams in the data collection phase:

J. J. Berkow, Col., USAF, ARPA R&D Field Unit,
Bangkok, Thailand
R. Hiller, Assistant for Operations Analysis,
CINCPACAF Staff
E. Kapos, OEG Representative, CINCPACFLT Staff
G. Koyiades, COMNAVOCEANO
R. Linsenmeyer, Chief, Scientific Research Advisory
Group, CINCPAC Staff
J. V. Patterson, Col., USAF, ARPA R&D Field Unit,
Saigon, Vietnam
B. Powers, OEG Representative, CINCPACFLT Staff
H. L. Wood, Col., USAF, Headquarters, 7th AF
D. G. Lynch, LCol, USMC, OPNAV

The commands, whose cooperation made it possible to reach the participants of air-to-air engagements, are also acknowledged.

COMMANDS

Commander-in-Chief, Pacific
Commander-in-Chief, U.S. Pacific Fleet
Commander-in-Chief, Pacific Air Forces
Commander, Seventh Air Force, Tan Son Nhut AB, Vietnam
Commander, Task Force Seventy-Seven
Deputy Commander, 7/13th Air Forces, Udorn Airfield,
Thailand
Commander, 8th Tactical Fighter Wing (TFW), Ubon Airfield,
Thailand
Commander, 366th TFW, Danang AB, Vietnam
Commander, 355th TFW, Takhli AB, Thailand
Commander, 388th TFW, Korat AB, Thailand

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Commander, 432nd Tactical Reconnaissance Wing, Udorn
Airfield, Thailand

Commanding Officer, USS KITTY HAWK (CVA-63)

Commanding Officer, USS TICONDEROGA (CVA-41)

Commanding Officer, USS BON HOMME RICHARD (CVA-31)

Commanding Officer, USS ENTERPRISE (CVA(N)-65)

Commanding Officer, USS HANCOCK (CVA-19)

Director, ARPA R&D Field Unit, Saigon, Vietnam

Director, ARPA R&D Field Unit, Bangkok, Thailand

Commander, 41st Air Division, Yakota AB, Japan

Commander-in-Chief, U.S. Air Forces, Europe

Commander, Seventeenth Air Force, Ramstein AB, Germany

Commander, 81st TFW RAF, Bentwaters, England

Commander, 36th TFW, Bitburg AB, Germany

Commander, 50th TFW, Hahn AB, Germany

Commander, Naval Air Forces, U.S. Pacific Fleet

Commander, Fleet Air, Miramar, California

Commander, Tactical Fighter Weapons Center, Nellis AFB,
Nevada

Commander, 15th TFW, McDill AFB, Florida

Commander, 831st Air Division (TAC), George AFB,
California

Commander, 835th Air Division, McConnell AFB, Kansas

Commander, 3525th PTW, Williams AFB, Arizona

Commander, 4531st TFW, Homestead AFB, Florida

Commander, 4453rd Combat Crew Training Wing, Davis-Monthan
AFB, Arizona

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I. INTRODUCTION

At the request of the Director of Defense Research and Engineering, the Weapons Systems Evaluation Group has undertaken a study of air-to-air encounters in Southeast Asia. The project code name is RED BARON. Data that have been collected on approximately 400 such encounters through 1 August 1967 will be analyzed primarily to assist in the selection of suitable research and development programs for future high-performance fighter aircraft. A secondary purpose of the study was to provide data for use by the military services and of the scientific community. This volume is a partial documentation for the secondary purpose.

A. DATA SOURCES

Data contained in this report were taken from two sources: the official reporting media and personal interviews with participants. Past IDA/WSEG experience in collecting combat data^{1,2} has shown that the official reporting media, which are designed primarily for military operational and statistical needs, are inadequate for many analytic purposes. The project groups conducting these earlier studies found that personal interviews with participants were necessary for R&D analyses. In Project RED BARON, interviews were considered the primary data source, supplemented, where available, by official reports.

¹WSEG Staff Study 134, Adequacy of Data from Southeast Asia Combat Air Operations for Research and Development Analyses of Aircraft Losses and Damages (U), SECRET, February 1967.

²WSEG Report 101, Requirements of Defense R&D Agencies for Data from Combat Air Operations in Southeast Asia, SECRET, August 1966.

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For purposes of this study, encounters that were investigated were defined to include the following types:

- Sighting of enemy aircraft (either visually or by radar),
- Either U.S. or enemy aircraft initiating hostile or evasive maneuvers,
- Either U.S. or enemy aircraft expending ordnance, and
- Loss or damage in combat of either U.S. or enemy aircraft.

During the data collection phase, an effort was made to assure the exhaustiveness of the information contained in this report. However, it was established that certain aspects of air-to-air combat could not be included. For example, during the conduct of CAP and escort missions, frequently it was necessary for the fighter force to intercept radar contacts which proved to be friendly aircraft. Also, during the course of missions, aircraft sighted were initially identified and called as enemy, only to be recognized later as friendly. These occurrences were not reported and therefore are not documented in this volume.

While numerous sightings of enemy aircraft are contained in this volume, it is believed that there are many other sightings which were not documented (and therefore not included). This is partially substantiated by the numerous instances which were mentioned during interviews for which no date or location was recalled and which were not correlated with reported sightings.

The first type was considered in detail only if the sighting was of R&D interest, e.g., if a U.S. aircraft made no attempt to engage enemy aircraft because of inferior or malfunctioning U.S. equipment. Where no R&D implications were indicated, sightings were noted to record the information collected for potential use for other analyses.

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Since "test type" instrumentation does not exist on most combat aircraft, the validity and quality of data are limited to the tolerances of human senses and recollections (aided where possible by official and personal records, notes, tapes, etc.). A detailed account of the precautions taken to insure the validity and quality of data gathered in such interviews is presented in Section II.

Originally the data sample consisted of 248 encounters through 1 March 1967. However, from this date through 22 May, 65 more encounters were identified (not including "sightings"). In the 23-month period from first encounter to 1 March, 47 "confirmed plus probable" MIG kills were reported. In the six-week period in April-May 1967, the 65 engagements resulted in 37 "confirmed plus probable" MIG kills.¹

B. DATA PRESENTATION

Though the analyses to be conducted in the RED BARON study were to be limited to exposing problems for R&D considerations, interest in the basic data was expressed in many areas of the military and scientific communities. To satisfy these needs the data have been formalized and are published in three volumes as follows:

Volume I: Account of F-4 and F-8 Events Prior to 1 March 1967 (U) (WSEG Log No. 126571)

<u>U.S. Aircraft Involved</u>	<u>No. of Encounters to 1 March 1967</u>
F-4B	13
F-4C	55
F-8	8
F-104	1
U-2	1
Total Events Reported Volume I	<u>78</u>

¹Concurrently, there was a shift in targeting policy (NVN airfields were bombed by U.S. aircraft from 23 April) and the introduction of new equipment (e.g., SUU-16A guns installed in some F-4C aircraft). Because of these factors the additional engagements were included in the RED BARON data base.

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Volume II: Account of F-105 Events Prior to 1 March 1967 (U)

<u>U.S. Aircraft Involved</u>	<u>No. of Encounters to 1 March 1967</u>
F-105	151

Volume III: Account of Air-to-Air Events from 1 March 1967 to 1 August 1967, and All Miscellaneous Events (U)

For ease of study and analysis, the available information has been summarized under the following headings:

- Primary Mission and Tactical Situation
- Mission Route
- Aircraft Configurations
- Flight Conditions Prior to Encounter
- Initial Detection
- Action Initiated
- Situation Development
- Ordnance
- Equipment Problems
- Aircrew Comments
- Data Sources

Following the above, an edited narrative is presented which integrates all the information sources pertaining to the designated air-to-air engagement. Wherever an air-to-air engagement proved to be of sufficient complexity that a perspective drawing aided in its understanding, such a representation was developed.

Although every precaution has been taken to depict the engagements accurately, the artists' representations serve only as guides to the reader in following through the complex series of situations and should not be interpreted as the precise flight paths of the aircraft involved.

The perspective representations of the air-to-air engagements were developed by the SED Graphics Department employing the Illustromat 1100 Analog Computer at the Ballistic Research

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Laboratory, Aberdeen Proving Ground, Maryland with the aid of maps and overlays developed during interviews of the air crews. Artists then added perspective views of aircraft in approximate attitudes and positions indicated in the Event Summary charts.

The names and official call signs of the participants have been replaced by standardized nomenclature to give anonymity to the interviewees. This precaution was followed throughout to encourage frank and honest answers to all questions posed by the interview teams.

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II. DATA DEFINITION AND COLLECTION

A. BACKGROUND - GOALS AND LIMITATIONS

The broad goal formulated for the data definition/collection effort was to obtain sufficient data to enable reconstruction of the various air-to-air encounters in appropriate detail with maximum accuracy and completeness ("reconstruction" being the key word).

The scope and degree of detail was not simply defined. It revolved around the needs of the R&D community and the limitations of the available data. The primary limitation was human ability to sense and recall. There were no recording devices in U.S. aircraft, and, therefore, with few exceptions (such as taped communications and photographs), all data had to be extracted from the minds of participants and observers.

There was also the question of the adequacy, for event reconstruction, of data reported from Southeast Asia through the standard reporting systems. IDA/WSEG experience¹ showed that while these systems offered certain worthwhile information for R&D purposes, they were far from adequate for the purposes of this specific study.

It was decided that IDA/WSEG would interview participants in air-to-air encounters as the principal source of data.

¹WSEG Report 101, Requirements of Defense R&D Agencies for Data from Combat Air Operations in Southeast Asia (U), July 1966, (SECRET). WSEG Staff Study 134, Adequacy of Data from Southeast Asia Combat Air Operations for Research and Development Analyses of Aircraft Loss and Damage (U), February 1967, (SECRET).

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B. APPROACH

The data collection program involved several interrelated areas of operations. They were:

1. Identification of air-to-air encounters and the participants.
2. Development of more specific data needs and resolution of needs with limitations.
3. Collection of appropriate documentary information on Southeast Asia air-to-air encounters.
4. Development of optimum interview techniques.
5. Location of and arrangements for interviewing participants.

These operations were not necessarily sequential and were continued throughout the data collection phase.

Items 1 and 3 initially were interrelated, i.e., the means of identifying encounters was through search of existing documentation -- various formally and informally maintained "box scores" and other files.

Early information was gained from the Office of the Chief of Naval Operations and the USAF Air Staff. Additional basic documentation came from the USAF Tactical Fighter Weapons Center, CINCPACFLT, CINCPACAF, COMNAVAIRPAC, and the Commander, 7th Air Force. It was quickly determined that the various "box scores" did not agree. This was attributed to a variance in definition of what constituted an air-to-air encounter/engagement and possibly administrative or communications failures within the commands.

Additionally, early in the study, the CNO and the Chief of Staff, USAF, were advised of Project RED BARON and requested to provide reference to appropriate documentation. Numerous replies were received from various offices within the Services.

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Gradually, sources of documented information were increased until they included; standard reporting system (OPREPs, COACT, Navy 3480 Reports, Guided Missile Performance Reports); various reports of associated studies made by OEG representatives and other analytical groups; letters from pilots who could not be interviewed; various records kept at all levels of command; gun-camera films; tapes of communications made by pilots; and miscellaneous message traffic among military commands.

Identification of participants was a particular problem since there is no existing mechanism for providing this information. With a relatively few exceptions, names of participants were not included in reports. However, names were gradually acquired through informal communications with USN and USAF pilots and, as the interview program proceeded, other persons were identified by the interviewees.

Some specific items of data desired were defined by visits to various Service R&D and training organizations and through meetings with representatives of various industrial organizations concerned with components of U.S. fighter weapons systems. (These visits and conferences also provided information on the technical and operational aspects of the weapons systems concerned.) Eventually, a categorized list of data specifically desired from each encounter was formulated.

Having established the data requirements, an interview program was desired which would:

- Allow the greatest number of interviews, while
- Maximizing the quality, depth, and scope of information obtained from each interview.

There were uncertainties about the interview program, however. They involved such considerations as the human ability to recall stressful incidents and the effect of elapsed time between the event and attempt to recount it. Large numbers

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of people throughout the world had to be interviewed, great quantities of interview data had to be reduced, and time and manpower had to be considered.

With the assistance of IDA psychologists, H. W. Sinaiko and W. R. Kite, basic interview concepts were delineated. These concepts stressed unhurried informality, anonymity of the interviewee, a chronological approach to the entire flight in question (not just the air-to-air encounter period of it), and much use of visual aids -- maps, sketches, airplane models -- to reconstruct events.

A systematic program was developed to interview a maximum number of participants in the combat theater and throughout CONUS and Europe. There was little chance to control the elapsed time between events and interview. As a result, the elapsed time varied from days to more than one year.

Efficiency of operation was approached in various ways. Several levels of encounter were defined according to their complexity and intensity,¹ and the basic interview procedure was somewhat expanded or abbreviated according to the level of encounter and the knowledge of the interviewee. Data formats were devised which attempted to facilitate the recording (and subsequent reduction) of information while stimulating the memory of the interviewee.

A total of ten persons were trained as interviewers. Where it was possible to communicate with a participant but not practical or possible to interview him, he was contacted by mail.

While there was the desire to interview a maximum number of pilots, it was superseded by a desire to maximize coverage over the largest number of encounters. Consequently, where a

¹Sighting only (visual or radar); either side taking hostile or evasive action; expenditure of ordnance by either side; loss or damage by either side.

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choice had to be made as to whom to interview, breadth of coverage was the first consideration.

At the start, various test interviews were conducted, their results evaluated, and improvements made before a large scale program was undertaken. Minor changes in procedure were made throughout the program.

C. DESCRIPTION OF INTERVIEW PROCEDURE¹

In spite of the small changes that evolved and flexibility included to accommodate each situation, the basic interview procedure remained largely constant after the early test cases.

Ideally, the interviewee was given advance notice and a general idea of what would be discussed. The interview team consisted of two persons, one a military pilot with a significant amount of flying experience and the second person a military officer or civilian. The team would meet with one crewman at a time in a closed room, with minimum distraction, and with what was intended to be more than ample time allotted for the meeting. The team attempted to create an air of relaxed informality.

The interviewee was given an explanation of the study, how it came about, what it hoped to accomplish, and what his role was. It was emphasized that his name would not appear in print and that, in general, attempts would be made to preserve the anonymity of the persons interviewed. This was done to encourage frank and honest answers. The complete interview procedure was explained in detail.

Next, the pilot was asked to give an uninterrupted narrative of the encounter in question. He was asked to start from planning for the mission and discuss all aspects through the flight's return to base. He was first given examples of the kind of detail desired. Early in the project it became standard for the interviewers to use a tape recorder for the

¹A more detailed discussion is presented in Volume IV of this report.

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narrative phase. This, of course, depended upon the interviewee's consent and he was always free to go back and erase anything he wished from the tape. He was assured that the tape was only for the use of the interviewers in gaining complete, accurate information from the meeting and its use was limited to the project.

Next, depending on the intensity and complexity of the encounter, a sketch of the action was made. Again, the sketch covered a greater part of the mission than just the air-to-air encounter, dealing with ingress and egress as well. The technique was to put a transparent paper overlay on a large scale map and trace the paths, in plan view, of the various aircraft known to have been present (as they were believed to be) relative to known geographical points. The third dimension to the picture was introduced by means of a keyed time-sequence vs. altitude plot at the top of the overlay.

With regard to time, early in the study it became clear that the air-to-air combatant rarely had any reasonable concept of the time duration of events or phases of the combat. He could, however, recall well the sequence of events. This caused the injecting of time-sequences into the interview process. The procedure was for the interviewer to "stop the action" at a point where something significant was occurring and try to elicit a detailed account of the scene at that instant -- the location and altitude of each participant; status of the interviewee's aircraft in the way of speed, g's, fuel state, avionics modes, etc.; action by the individual and his reasons therefor; communications which took place; enemy actions; etc.

After such a stop the description would continue until the next significant event occurred at which point the action would be stopped again. These stops correspond with the "T" (or "Time") marks in events and pictures. While one team member

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worked with the pilot in making the sketch, the other kept notes on a specially designed note pad.

Upon completion of this step-by-step microscopic phase, the interviewers consulted their checklist on data items and asked specific questions about points which had not come out.

Finally, the interviewee was encouraged to comment on the whole range of considerations which might be of interest to the study -- comments derived from his experience in this specific encounter as well as from his overall experience.

The duration of an interview was from minutes to several hours, depending on the significance and complexity of the encounter and the knowledge of the interviewee.

D. GENERAL COMMENTS ON DATA

The Project identified 248 air-to-air encounters that occurred prior to 1 March 1967. Participants in 164 of these encounters were interviewed, with a total of 331 interviews conducted.¹ In addition, 37 written accounts of engagements were received. In general, priority was given to the more complex encounters; events for which no interviews were conducted were usually a sighting only, with no R&D significance.

The study group found that human ability to recall the details of incidents stressful to them is sometimes quite remarkable. With regard to the validity of recall, various comparisons were made between OPREP reports of the encounter and interviews and between interviews of various participants in the same encounter. There was generally good agreement. Where significant discrepancies appeared, they could usually be traced to the confusion of a fast moving, complex situation

¹If an individual was interviewed in connection with two or more different encounters, this would be considered as two or more interviews.

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rather than memory failure or some psychological phenomena. (Discrepancies between various accounts of the same event did cause some difficulty in the final reconstruction process. In almost all cases, discrepancies were resolved through repeated study of the data, use of logical deductions, and/or reinterview.)

Intuitively, it might appear that the best information would be obtained by minimizing the time lapse between encounter and interview. However, there are opinions and illustrations which counter this. The thought cannot be proved or disproved at this time. As noted earlier, elapsed time between encounter and interview ran from a period of days to more than a year. Dates of events and interviews have been included in the published data.

The interview techniques, in general, were highly regarded by interviewees for effectiveness in stimulating accurate, detailed recall. In some cases, through the procedures used, interviewees were able to correct and clarify their conceptions of events.

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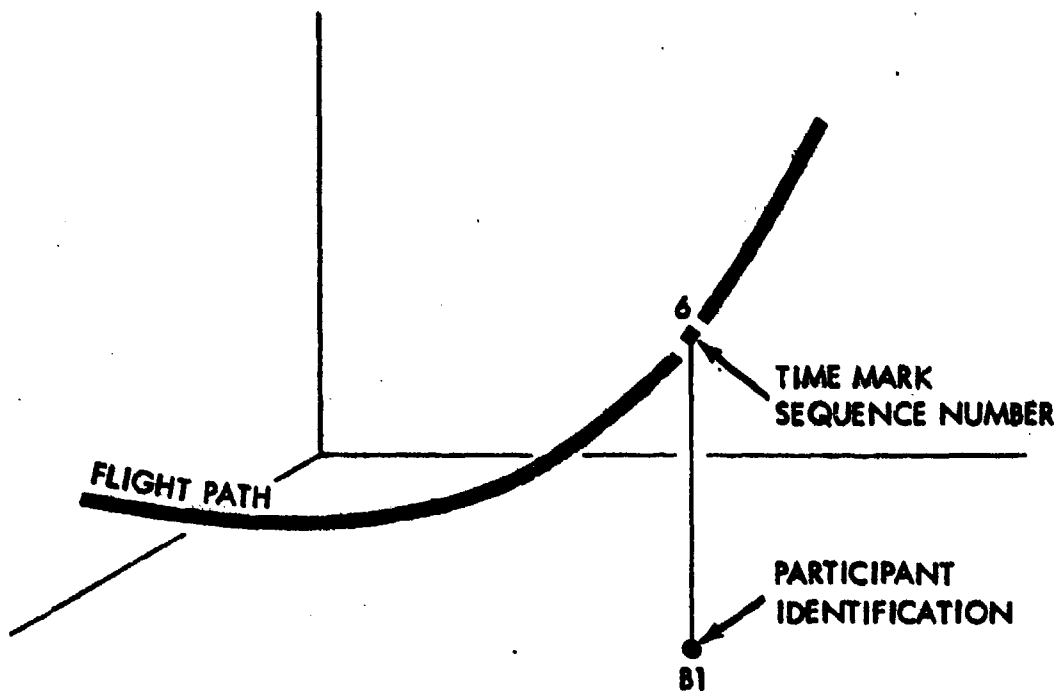
III. EVENT RECONSTRUCTIONS

The account of each event is presented in at least two basic parts: (1) An outline which gives an abbreviated presentation of the highlights of the event, and (2) A narrative of the encounter.

All of the events contained in this Volume are summarized in Table 1. A Glossary of Terms was developed to aid in the interpretation of events and is included at the end of this report. The glossary also contains descriptions and illustrations of the more common aircraft maneuvers.

In addition, whenever an air-to-air engagement proved to be of sufficient complexity that a perspective drawing aided in its understanding, such a representation was developed. The perspective drawings were keyed by an Event Summary Chart which describes the actions of friendly aircraft (BLUE 1, 2, etc.), and enemy aircraft, as well as known communication information, at significant points in the event. As explained in Section II, these are identified by "time marks" (T_0 , T_1 , T_2 , etc.), and are instants in time when significant points arose and are not intervals of seconds or minutes of clock time. In the perspective sketch, a vertical line representing altitude appears on the flight path at each of these "time marks" with the time mark sequence number printed at the top and the participant to which it referred printed at the bottom (e.g., B2, M3, etc.). The keyed flight paths presented in the sketches were color coded such that the paths of all friendly aircraft were shown in blue and those of enemy aircraft, in red.

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It is recognized that precise flight paths could not be reconstructed since the participating airplanes did not carry instrumentation for recording of position. Thus, while every effort was made to depict the engagements as accurately as possible, it must be remembered that artists' representations serve only as guides to the reader in following the complex series of situations and should not be interpreted as the precise flight paths of the aircraft involved.

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Table 1. LIST OF EVENTS

Event	Date/Time	Aircraft Involved		Results Lost/Damaged	
		No-Type		U.S.	Enemy
		U.S.	Enemy	U.S.	Enemy
II-1	4 Apr '65/1215H	4 F-105D	4 MIG-17	2/0	0/0
II-2	24 Jun '65/1600H	4 F-105	2 MIG-15	0/0	0/0
II-3	5 Oct '65/day	1 F-105	MIGS	1/0	0/0
II-4	---Oct '65/-----	4 F-105	2 MIG-17	0/0	0/0
II-5	16 Nov '65/1540H	5 F-105	2 MIG-17	0/0	0/0
II-6	28 Nov '65/1212H	1 F-105	2 MIG-?	Sighting	
II-7	15 Dec '65/1630H	4 F-105	5 MIG-17	Sighting	
II-8	16 Dec '65/1625H	3 F-105	2 MIG-?	Sighting	
II-9	20 Dec '65/1600H	4 F-105	2 MIG-17?	0/0	0/0
II-10	16 Mar '66/1433H	4 F-105	2 MIG-21	Sighting	
II-11	23 Apr '66/1532H	4 F-105D	3 MIG-17	0/0	0/0
II-12	8 May '66/1605H	4 F-105D	2 MIG-17	0/0	0/0
II-13	10 May '66/1621H	4 F-105D	4 MIG-17	Sighting	
II-14	10 May '66/1800H	4 F-105	3 MIG-17	Sighting	
II-15	29 Jun '66/1310H	4 F-105	4 MIG-17	0/2	1/0
II-16	---Jun '66/-----	4 F-105	1 MIG-17	Sighting	
II-17	Jun-Jul '66/1500H	2 F-105	2 MIG-17	0/0	0/0
II-18	7 Jul '66/-----	4 F-105D	4 MIG-17	0/0	0/0
II-19	7 Jul '66/1615H	{1 F-105D 1 F-105F	2 MIG-21	0/0	0/0
II-20	12 Jul '66/-----	4 F-105	2 MIG-17	0/0	0/0
II-21	11 Jul '66/0705Z	{1 F-105 1 F-105	{2 MIG-21 2 MIG-21	0/0	0/0
II-22	14 Jul '66/-----	4 F-105	1 MIG-21	Sighting	
II-23	19 Jul '66/1611H	8 F-105	4 MIG-17	1/1	0/3
II-24	---Jul '66/-----	4 F-105	2 MIG-17	0/0	0/0
II-25	20 Jul '66/0842H	4 F-105	2 MIG-21	0/0	0/0
II-26	---Jul '66/1300H	1 F-105	5 MIG-17	Sighting	
II-27	20 Jul '66/0850H	4 F-105	2 Unid.	0/0	0/0
II-28	20 Jul '66/1446H	4 F-105	1 MIG-21	0/0	0/0
II-29	20 Jul '66/1602H	4 F-105	1 MIG-21	Sighting	
II-30	22 Jul '66/1630H	4 F-105	3 MIG-17	Sighting	
II-31	25 Jul '66/1020H	4 F-105	2 MIG-19	0/0	0/0
II-32	12 Aug '66/1088H	4 F-105	2 MIG-17	0/1	0/1?
II-33	17 Aug '66/1516H	2 F-105D	1 MIG-17	0/0	0/0
II-34	17 Aug '66/1502H	2 F-105D	2?MIG-17	0/0	0/0
II-35	18 Aug '66/1528H	2 F-105	2 MIG-17	0/1	1/0
II-36	18 Aug '66/1603H	4 F-105D	2 MIG-17	0/0	0/0
II-37	18 Aug '66/1603H	2 F-105D	3 MIG-17	0/0	0/0
II-38	22 Aug '66/1626H	4 F-105D	4 MIG-17	0/2	0/0
II-39	9 Sep '66/0900H	{1 F-105F 1 F-105D	3 MIG-21	0/0	0/0
II-40	11 Sep '66/-----	3 F-105	1 Unid.	Sighting	
II-41	14 Sep '66/1643H	4 F-105	2 MIG-17	0/0	0/0
II-42	14 Sep '66/1636H	4 F-105D	3 MIG-17	0/0	0/0
II-43	14 Sep '66/1638H	4 F-105	2 MIG-17	Sighting	
II-44	15 Sep '66/1555H	3 F-105	2 MIG-?	Sighting	
II-45	16 Sep '66/1645H	4 F-105	4 MIG-21	Sighting	
II-46	16 Sep '66/1650H	4 F-105D	2 MIG-17	0/0	0/0
II-47	16 Sep '66/1647H	4 F-105D	4 MIG-17	0/0	0/0
II-48	17 Sep '66/0927H	3 F-105	{1 MIG-19 3 MIG-?	0/0	0/0
II-49	18 Sep '66/0931H	3 F-105D	3 MIG-17	0/0	0/0
II-50	18 Sep '66/1648H	2 F-105D	4 MIG-17	0/0	0/0
II-51	18 Sep '66/1644H	4 F-105	2 MIG-17	Sighting	
II-52	18 Sep '66/1645H	4 F-105D	4 MIG-17	0/0	0/0
II-53	20 Sep '66/1645H	11 F-105	4 MIG-17	0/0	0/0
II-54	21 Sep '66/1027H	4 F-105	2 MIG-21	0/0	0/0
II-55	21 Sep '66/1015H	4 F-105	1 MIG-17	0/0	0/1
II-56	21 Sep '66/1000H	4 F-105	2 MIG-17	0/0	1/0
II-57	21 Sep '66/1015H	4 F-105D	2 MIG-17	0/0	1/0
II-58	21 Sep '66/1025H	4 F-105D	{4 MIG-17 2 MIG-21	0/0	0/1
II-59	21 Sep '66/1032H	4 F-105	3 MIG-17	0/0	0/1
II-60	21 Sep '66/1030H	2 F-105	4 MIG-17	0/0	0/0
II-61	22 Sep '66/0845H	4 F-105	1 MIG-?	Sighting	
II-62	28 Sep '66/-----	4 F-105	1 MIG-21?	Sighting	
II-63	28 Sep '66/1725H	4 F-105D	4 MIG-21	Sighting	
II-64	8 Oct '66/1545H	4 F-105	2 MIG-17	0/0	0/0

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Event	Date/Time	Aircraft Involved		Results	
		U.S.	Enemy	U.S.	Enemy
II-65	8 Oct '66/1545H	4 F-105	4 MIG-21	0/0	0/1?
II-66	8 Oct '66/1543H	4 F-105	{ 3 MIG-17	0/0	0/0
II-67	8 Oct '66/1541H	4 F-105	{ 2 MIG-21	Sighting	
II-68	---Oct '66/----	4 F-105	{ 4 MIG-17	Sighting	
II-69	3 Nov '66/1556H	4 F-105	{ 1 MIG-19	Sighting	
II-70	---Nov '66/----	4 F-105	{ 1 MIG-15?	Sighting	
II-71	---Nov '66/----	4 F-105	2 MIG-21	Sighting	
II-72	---Nov '66/----	4 F-105D	6 MIG-17	Sighting	
II-73	---Nov '66/----	4 F-105D	7 MIG-21	Sighting	
II-74	---Nov '66/----	4 F-105	3 MIG-21	Sighting	
II-75	2 Dec '66/1425H	4 F-105	1 MIG-21	0/0	0/0
II-76	2 Dec '66/1430H	4 F-105	2 MIG-21	0/0	0/0
II-77	3 Dec '66/1220H	4 F-105	2 MIG-21	0/0	0/0
II-78	3 Dec '66/1240H	4 F-105	2 MIG-15/17	Sighting	
II-79	3 Dec '66/1213H	4 F-105	1 MIG-21	Sighting	
II-80	4 Dec '66/1040H	4 F-105	1 MIG-17	Sighting	
II-81	4 Dec '66/-----	4 F-105D	1 MIG?	Sighting	
II-82	4 Dec '66/1040H	4 F-105	2 MIG?	Sighting	
II-83	4 Dec '66/1637H	4 F-105	8-10 MIG-17	0/0	0/0
II-84	4 Dec '66/1642H	4 F-105	16 MIG-17	0/0	1?/0
II-85	4 Dec '66/1645H	4 F-105	{ 2 MIG-17	0/0	0/0
II-86	4 Dec '66/1706H	4 F-105D	{ 2 MIG-21	Sighting	
II-87	4 Dec '66/1705H	4 F-105	4 MIG-17	0/0	1/0
II-88	4 Dec '66/1715H	4 F-105	4 MIG-17	0/0	0/0
II-89	4 Dec '66/1713H	4 F-105	9 MIG-17	0/0	0/0
II-90	5 Dec '66/1012H	4 F-105D	2 MIG-21	Sighting	
II-91	5 Dec '66/1015H	4 F-105	2 MIG-21	0/0	0/0
II-92	5 Dec '66/1530H	3 F-105D	4 MIG-21	0/0	0/0
II-93	5 Dec '66/1630H	{ 2 F-105F		0/0	0/0
II-94	5 Dec '66/1652H	{ 2 F-105D	4 MIG-21	0/0	0/0
II-95	5 Dec '66/1655H	{ 1 F-105F	2 MIG-17	1/0	0/0
II-96	8 Dec '66/1615H	{ 3 F-105D	8 Unid.	Sighting	
II-97	13 Dec '66/1610H	4 F-105	8 MIG-21	0/0	0/0
II-98	13 Dec '66/1600H	4 F-105	1 MIG-21	Sighting	
II-99	14 Dec '66/1625H	16 F-105D	? MIGS	0/0	0/0
II-100	14 Dec '66/1530H	4 F-105D	6 MIG-21	1/0	0/0
II-101	14 Dec '66/1707H	4 F-105	{ 6 MIG-17	0/0	0/0
II-102	14 Dec '66/1615H	4 F-105	2 MIG-17	0/0	0/0
II-103	14 Dec '66/1704H	2 F-105	2 MIG-21	0/0	0/0
II-104	14 Dec '66/1650H	4 F-105	2 MIG Poss	0/0	0/0
II-105	14 Dec '66/1613H	4 F-105	2 MIG-21	Sighting	
II-106	14 Dec '66/-----	1 F-105	? MIGS	0/0	0/0
II-107	19 Dec '66/1548H	4 F-105D	2 MIG-21	Sighting	
II-108	19 Dec '66/1600H	4 F-105	{ 2 MIG-17	0/0	0/0
II-109	19 Dec '66/1605H	4 F-105D	{ 2 MIG-21	Sighting	
II-110	19 Dec '66/1603H	4 F-105D	1 MIG-21C	0/0	0/0
II-111	19 Dec '66/1600H	4 F-105D	4 MIG-?	Sighting	
II-112	19 Dec '66/1603H	4 F-105	4 MIG-?	Sighting	
II-113	19 Dec '66/1549H	4 F-105D	4 MIG-?	Sighting	
II-114	19 Dec '66/1545H	4 F-105	6 MIG-17	0/0	0/0
II-115	19 Dec '66/1547H	4 F-105D	4 MIG-21	Sighting	
II-116	19 Dec '66/1545H	4 F-105D	2 MIG-17	0/0	0/0
II-117	---Dec '66/----	4 F-105D	{ 2 MIG-?	0/0	0/0
II-118	2 Jan '67/1510H	{ 2 F-105D	2 MIG-21	0/0	0/0
II-119	6 Jan '67/1534H	{ 2 F-105F	2 MIG-21	Sighting	
II-120	7 Jan '67/late afternoon	4 F-105	1 MIG-21	Sighting	
II-121	7 Jan '67/late afternoon	4 F-105	4 MIG-21	0/0	0/0
II-122	7 Jan '67/0830Z	20-F-105	4 MIG-21	0/0	0/0

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Event	Date/Time	Aircraft Involved No-Type		Results Lost/Damaged	
		U.S.	Enemy	U.S.	Enemy
II-123	8 Jan '67/0825H	4 F-105D	4 MIG-21	Sighting	
II-124	15 Jan '67/1615H	8 F-105	4 MIG-21	0/0	0/0
II-125	15 Jan '67/1645H	4 F-105D	1 MIG-21	Sighting	
II-126	16 Jan '67/0818H	4 F-105	4?MIG-?	Sighting	
II-127	16 Jan '67/0838H	4 F-105	2 MIG-21	Sighting	
II-128	16 Jan '67/0825H	4 F-105	1 MIG-21	Sighting	
II-129	16 Jan '67/0825H	4 F-105	2 MIG-21	Sighting	
II-130	17 Jan '67/0759H	4 F-105	4 MIG-21	0/0	0/0
II-131	16 Jan '67/1538H	4 F-105	1 MIG-21	Sighting	
II-132	17 Jan '67/0838H	4 F-105	2 MIG-21	0/0	0/0
II-133	17 Jan '67/0715H	4 F-105	? MIGS	0/0	0/0
II-134	17 Jan '67/1609H	3 F-105	1 MIG-?	Sighting	
II-135	17 Jan '67/0820H	4 F-105	2 MIG-17	Sighting	
II-136	21 Jan '67/0844H	4 F-105D	4 MIG-21	0/0	0/0
II-137	21 Jan '67/0842H	4 F-105D	3 MIG-21	0/0	0/0
II-138	21 Jan '67/1605H	4 F-105	{ 8 MIG-17 2 MIG-21	0/0	0/0
II-139	21 Jan '67/0844H	4 F-105	1 MIG-21	Sighting	
II-140	21 Jan '67/1525H	4 F-105	2 MIG-17	0/0	0/0
II-141	21 Jan '67/0840H	4 F-105D	10?MIG-21	0/0	0/0
II-142	21 Jan '67/1522H	4 F-105D	5 MIG-17	0/0	0/0
II-143	21 Jan '67/1621H	4 F-105D	2 MIG-19	0/0	0/0
II-144	21 Jan '67/1620H	4 F-105	5-8 MIG-17	0/1	0/0
II-145	22 Jan '67/0936H	4 F-105	4 MIG-17	0/0	0/0
II-146	27 Jan '67/-----	4 F-105	4 MIG-17	0/0	0/0
II-147	29 Jan '67/-----	4 F-105D	3 MIG-21	0/0	0/0
II-148	4 Feb '67/0848H	4 F-105	4 MIG-21	Sighting	
II-149	4 Feb '67/0730H	4 F-105	6 MIG-21	Sighting	
II-150	4 Feb '67/0859H	4 F-105	3 Unid.	Sighting	
II-151	4 Feb '67/1600H	4 F-105	2 MIG-17	0/0	0/0

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GLOSSARY OF TERMS

(All Terms Unclassified Unless Otherwise Stated)

AA - air-to-air weapon
AAA - antiaircraft artillery
AAM - air-to-air missile
AAWC - Anti-Air-Warfare Commander
AB - afterburner
ACM - air combat maneuvering
ACT - air combat tactics
ADF - automatic direction finder
AEW - airborne early warning
AGL - above ground level
AIM-7 (D&E models) (SPARROW) - semiactive radar type, air-to-air missile
AIM-9 (B&D models) (SIDEWINDER) - passive IR type, air-to-air missile
AIM-9C (SIDEWINDER) - Radar guided air-to-air missile
AI radar - airborne intercept radar
Aircraft commander - a pilot designated pilot-in-command of a given aircraft (Air Force name for front seater in F-4)
ALKALI - Soviet air-to-air missile - radar beam rider type
ALQ-51 - Broadband deception ECM system
ALQ-71 - Noise jamming ECM pod (production model of QRC-160-1)
ANCHOR (Various colors) - see Figure 9 on page 34 - code names for specific refueling tracks
AN/APA-157 - CW radar illuminator and fire control computer for SPARROW missile system
Angle-off - angular position off the tail of the reference aircraft
APQ-72 - airborne intercept radar in F-4B aircraft

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- APQ-94 - airborne intercept radar in F-8E aircraft
- APQ-100/109 - airborne intercept radar in F-4C/D aircraft
- APR-25 - vector homing and warning system - providing 360° directional warning of threat signals in certain bands with instantaneous bearing to radiating source.
- APR-26 - crystal video airborne warning receiver to detect SA-2 guidance signals
- APR-27 - airborne radar warning receiver
- armed reconnaissance - an air mission flown with the primary purpose of locating and attacking targets of opportunity, i.e., enemy materiel, personnel, and facilities in assigned general areas or along assigned ground communications routes, and not for the purpose of attacking specific briefed targets.
- ASE circle - allowable steering error - circle on radar display provided by fire control computer.
- ATOLL - Soviet air-to-air missile, infrared seeker type
- autotrack - automatic tracking in which a servo mechanism keeps the radar beam trained on the target.
- Back - the individual occupying the back seat of the F-4; in Navy called RIO, in Air Force called pilot or GIB.
- BARCAP - Barrier combat air patrol - a MIGSCREEN for one or more missions
- barrel roll - see Figure 2 (page 27) - a 360° rolling maneuver in which the flight path of the aircraft decides about the intended direction of the flight.
- BDA - bomb damage assessment
- BINGO (fuel) - minimum fuel quantity reserve established for a given geographical point to permit aircraft to return safely to home base or aerial refueling point.
- bogey - unidentified aircraft
- boresight mode - in the boresight mode the radar antenna is aligned and locked to the roll axis of the aircraft.
- break - an emergency turn in which maximum performance is desired instantly to destroy an attackers tracking solution.
- break X - minimum range indication for missile launch. X appears in the radar scope at minimum range.

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- CAP - combat air patrol - an aircraft patrol provided over an objective area, over the force protected, over the critical area of a combat zone, or over an air defense area, for the purpose of intercepting and destroying hostile aircraft before they reach their target.
- (NAVY) Condition I CAP (Standby): aircraft ready for immediate (maximum delay of two (2) minutes) takeoff. Aircraft with engine not running (starter batteries plugged in) will be positioned for take-off. Pilots in cockpit and deck crew on alert.
- CAS - calibrated air speed (knots)
- CBU-24 - canister dispensed air-to-ground bomblet type munition; the canister is carried externally on the aircraft and opens after release at a preset altitude.
- centerline tank - a fuel tank carried externally on centerline of aircraft.
- chaff - a type of confusion reflector, which consist of thin, narrow metallic strips of various lengths to provide different responses, used to create false signals on radarscope.
- Channel 97 - A TACAN station located during the period of the study at 20°27'N/103°43'E used for navigational aids. (SECRET)
- chandelle - a maximum performance climbing turn in which speed is converted to altitude while reversing direction.
- CMR-312 (Little Ears) - aural radar warning receiver
- CROWN - call-sign for rescue force commander
- CRT - Combat Rated Thrust - maximum augmented thrust condition of engine
- DF - direction finder
- DME - distance measuring equipment
- dot - (aim dot, steering dot) - electronic dot appearing in radar scope when radar is locked on providing computed steering vector information
- element - Air Force term for the basic fighting unit (two aircraft)
- EWO - electronic warfare officer
- FANSONG - tracking radar for Soviet SA-2 surface-to-air missile system (CONFIDENTIAL)
- fighting (wing) position - an area for the wingman in which optimum coverage and maneuverability is achieved in maximum performance maneuvers.
- finger-four formation - see Figure 6 (page 29) - also fingertip formation - a four-plane formation in

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which the aircraft occupy positions suggested by the four finger tips of either hand, the fingers being held together in a horizontal plane.

flak - antiaircraft fire

fluid element - the second or supporting element in fluid four formation, flying in a high or low element position.

fluid-four - see Figure 5 (page 29) - a tactical formation having the second element spread in both the vertical and horizontal planes to enhance maneuverability, mutual support and look-out ability.

fragged - mission directed by fragmentary operational order from higher headquarters.

Front - the individual in the front seat in the F-4 aircraft; in the Navy called the pilot, in the Air Force called the aircraft commander.

g - unit of acceleration (32.2 ft/sec^2)

gaggle - slang for a number of aircraft operating in close proximity, not necessarily in any semblance of formation.

GAM-83 - BULLPUP; air-to-ground guided missile

GCI - ground control intercept

GUARD - emergency UHF radio channel usually monitored by all aircraft and ground stations as a secondary frequency.

Hard turn - a planned turn in which the intensity of the turn is governed by the angle-off and range of the attacking aircraft.

HEAT - armament switch setting for using infrared missiles

hot mike intercom - intercommunication system continuously active (hot)

IAS - indicated air speed

ICS - intercommunication system

ID - identification; to make identification

IFF - identification, friend or foe; aircraft transponding beacon received by radar distinguishing friend from foe.

Immelmann - see Figure 8 (page 30) - maneuver in which the aircraft completes the first half of a loop and then rolls over to an upright position thus changing direction 180° with a simultaneous gain in altitude.

IMN - indicated Mach number

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IP - initial point; a well-defined point, easily distinguishable visually and/or by radar, used as a starting point for a bomb run to the target.

IR missile - an infrared or heat-seeking missile

IRON HAND - a code name for a flight with special ordnance and avionics equipment whose mission is to seek and destroy enemy surface-to-air missile sites.

JCS target - a target appearing on the JCS target list

jinking - constant maneuvering in both the horizontal and vertical planes to present difficult target to enemy defenses by spoiling the tracking solution. Bank, pitch and velocity are all simultaneously changed in this maneuver.

karst - a limestone outcropping or ridge

KIAS - knots indicated air speed

kt - abbreviation for knot (nautical miles/hour)

KTAS - knots true air speed

LAU-3 - a rocket launcher adaptable to external bomb racks holding 19 2.75 inch air-to-ground folding fin rockets

LAU-17 adapters - stub pylon on F-4

loose deuce - a term to describe fighter tactics in which two to four airplanes maneuver to provide mutual support and increased fire power.

Lufberry circle - a circular tail chase, ascending or descending

M - abbreviation for Mach number

MER - multiple ejection rack

mi - nautical mile, as used in this report

MIGCAP - combat air patrol mission whose actions are directed against MIG aircraft

MIG SCREEN - mission wherein protecting fighters are placed between the threat and the protected force in a specific area

military power - maximum unaugmented thrust condition of engine

missile free - authority is granted to fire unless target is identified as friendly

missile tone - audio signal indicating AIM-9 is locked on to an IR source

MRT - military rated thrust - see military power

MSL - altitude referenced to mean sea level

OPREP - message report in joint operational reporting system

PANAMA - call sign for GCI site located near Danang

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pipper - aircraft weapon sight indicator (a dot of light within a lighted ring)

PIRAZ - positive identification radar zone

Pod formation - A flight formation configured to maximize the jamming of Fansong radar. Slight alteration is made to provide for better defense under MIG threat. (See Fig. 9)

PRF - pulse recurrence frequency

QRC-160 - noise jamming ECM pod

RAG - replacement air group

ready light - light which indicates a particular avionics/ munitions system is operating and available for use

RED CROWN - voice call for USS LONG BEACH (CLN-9)

RESCAP - rescue combat air patrol

RHAW - radar homing and warning

RIO - radar intercept officer

RO - abbreviated form of RIO

road interdiction - to prevent or hinder, by aerial means, enemy use of a road or route

ROLLING THUNDER - code name for air strikes against North Vietnam

Route Package - see Figure 9 - geographical division of North Vietnam for purposes of air strike targeting

rudder reversal - a climbing aircraft maneuver in which direction is changed by rotation around the aircraft's vertical axis

SA-2 - Soviet surface-to-air missile system

SAM - surface-to-air missile

SAR - search and rescue

scissors - See Figure 1 (page 27) - a defensive maneuver in which a series of turn reversals are executed in an attempt to achieve offensive after an overshoot by the attacker.

SCAN-ODD - MIG airborne intercept radar
(CONFIDENTIAL)

section - a Navy term for a tactical element of two or more aircraft (usually two)/an Air Force term for two flights of four

SHRIKE (AGM-45) - air-to-surface radar seeking missile

SIDEWINDER - see AIM-9

SIDEWINDER tone - see missile tone

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- SIF - selective identification feature - electronic device with variable codes for identification
- SILVER DAWN - a code name for an intelligence collecting aircraft (SECRET)
- "S" maneuver - a weave in a horizontal plane
- Snap-up - a rapid pullup to establish a climb in order to launch a weapon
- SPARROW -- see AIM-7
- "Split-S" maneuver - see Figure 7 (page 30) - 180° rotation about the aircraft longitudinal axis followed by a 180° change of heading in a vertical plane (half loop starting from top)
- STBY - standby
- steering dot - see dot
- Switchology - a coined word addressing the human engineering considerations of switch arrangements
- TACAN - tactical air navigation - an active electronic navigational system which locates the aircraft with respect to another installation
- TARCAP - target combat air patrol - aircraft assigned the air-to-air defense role in the target area
- TAS - true air speed in knots
- TCA - track crossing angle - the angle between flight paths measured from the tail of the reference aircraft
- Thud Ridge - A nickname given to a prominent geographical feature in North Vietnam. It is a ridge running in a general NW-SE direction from 21°40'N/105°25'E to 21°20'N/105°48'E.
- TOT - time over target
- TRACK (various colors) - see Figure 9 - code names for specific refueling tracks
- TROJAN HORSE - a code name of a U-2 air reconnaissance program (SECRET)
- unit (of turn) - divisions on an angle-of-attack indicator on F-4 aircraft
- UHT - unit horizontal tail (applied to F-8 aircraft) - a tail design whereby the whole surface rotates about a pivot point
- unloading - decreasing g's
- V_c - closing velocity (relative)
- vector box - see APR-25
- WILD WEASEL - F-105F specially equipped for locating and attacking SA-2 sites (employed on IRON HAND missions)

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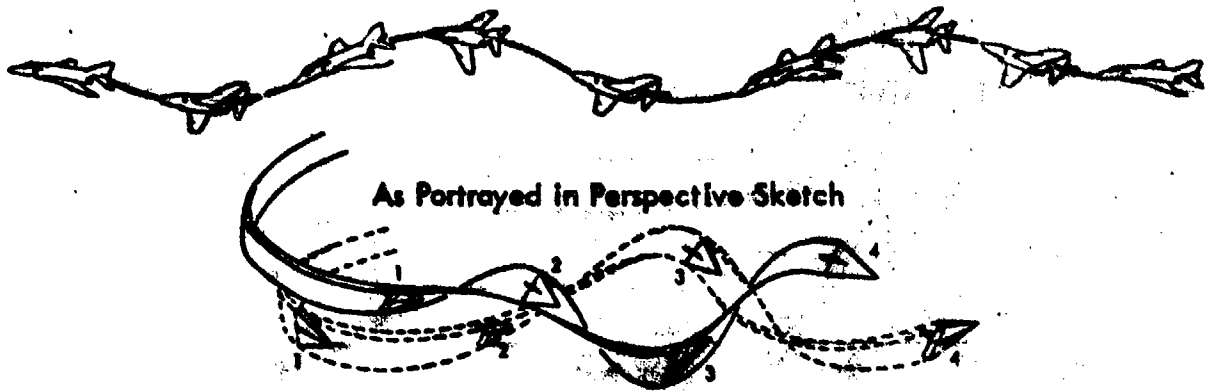
yo-yo - See Figures 3 and 4 (page 29)

High speed - an offensive tactic in which the attacker maneuvers through both vertical and horizontal planes to prevent an overshoot in the plane of the defender's turn.

Low speed - a dive for airspeed and a pull up for position closure.

ZUNI - five inch air-to-ground unguided rocket.

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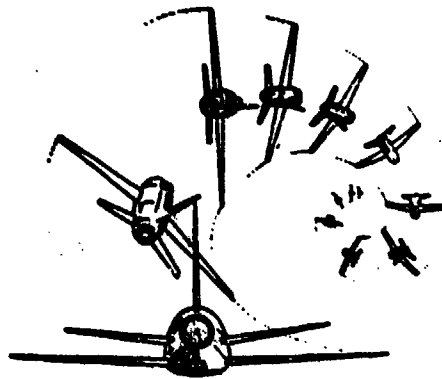


As Portrayed in Perspective Sketch

FIGURE 1. Scissors



As Portrayed in Perspective Sketch



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FIGURE 2. Barrel Roll

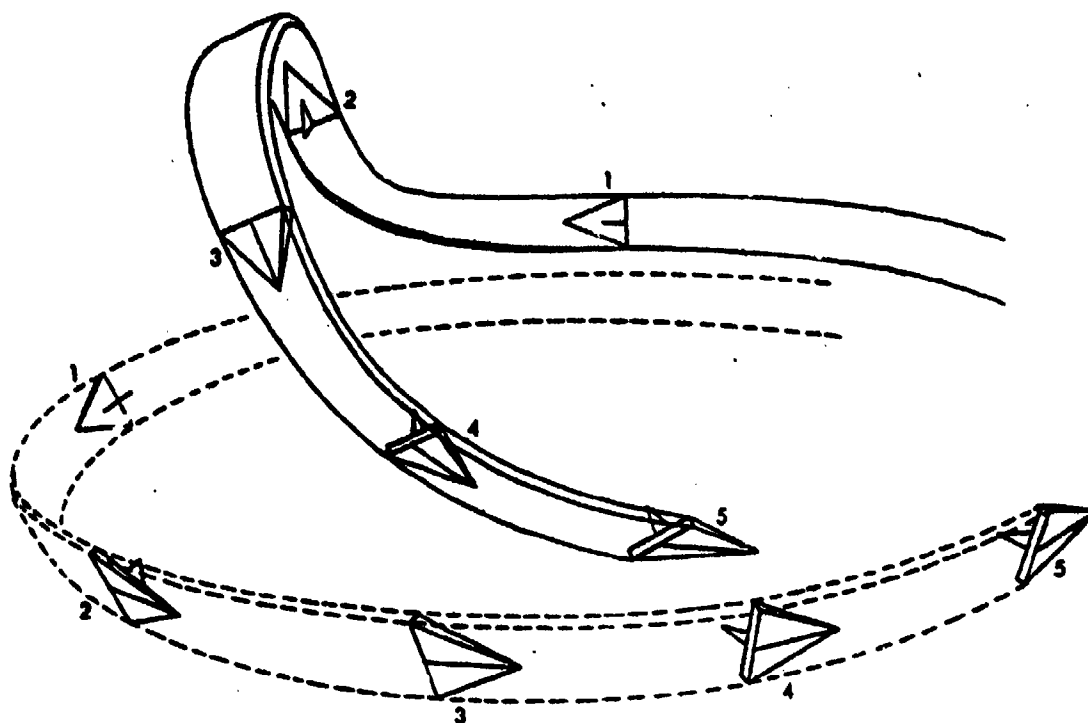


FIGURE 3. High-Speed Yo-Yo

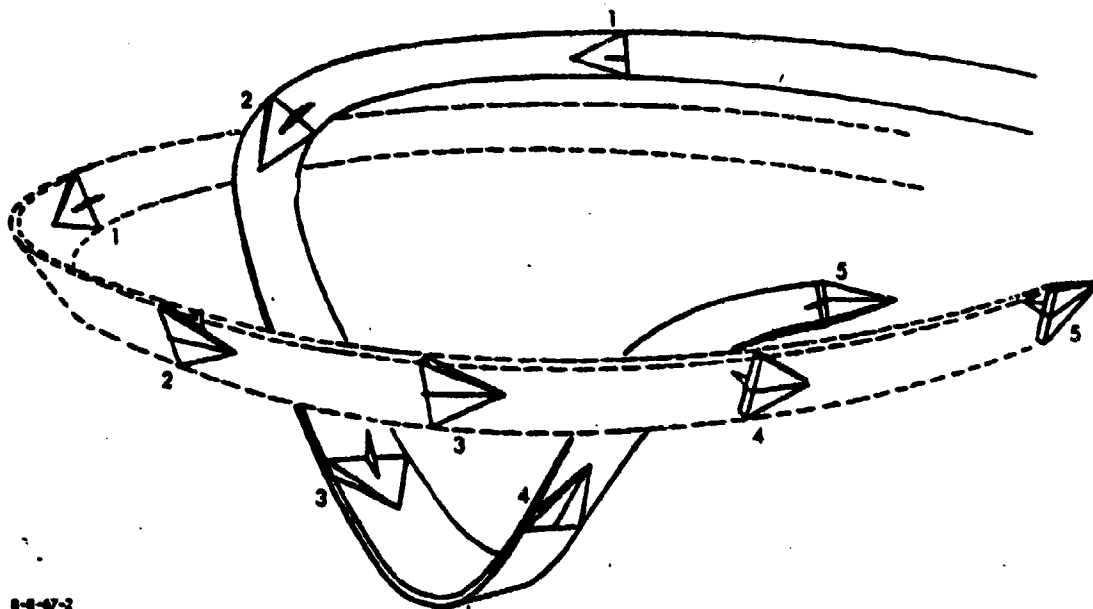


FIGURE 4. Low-Speed Yo-Yo

8-4-47-2

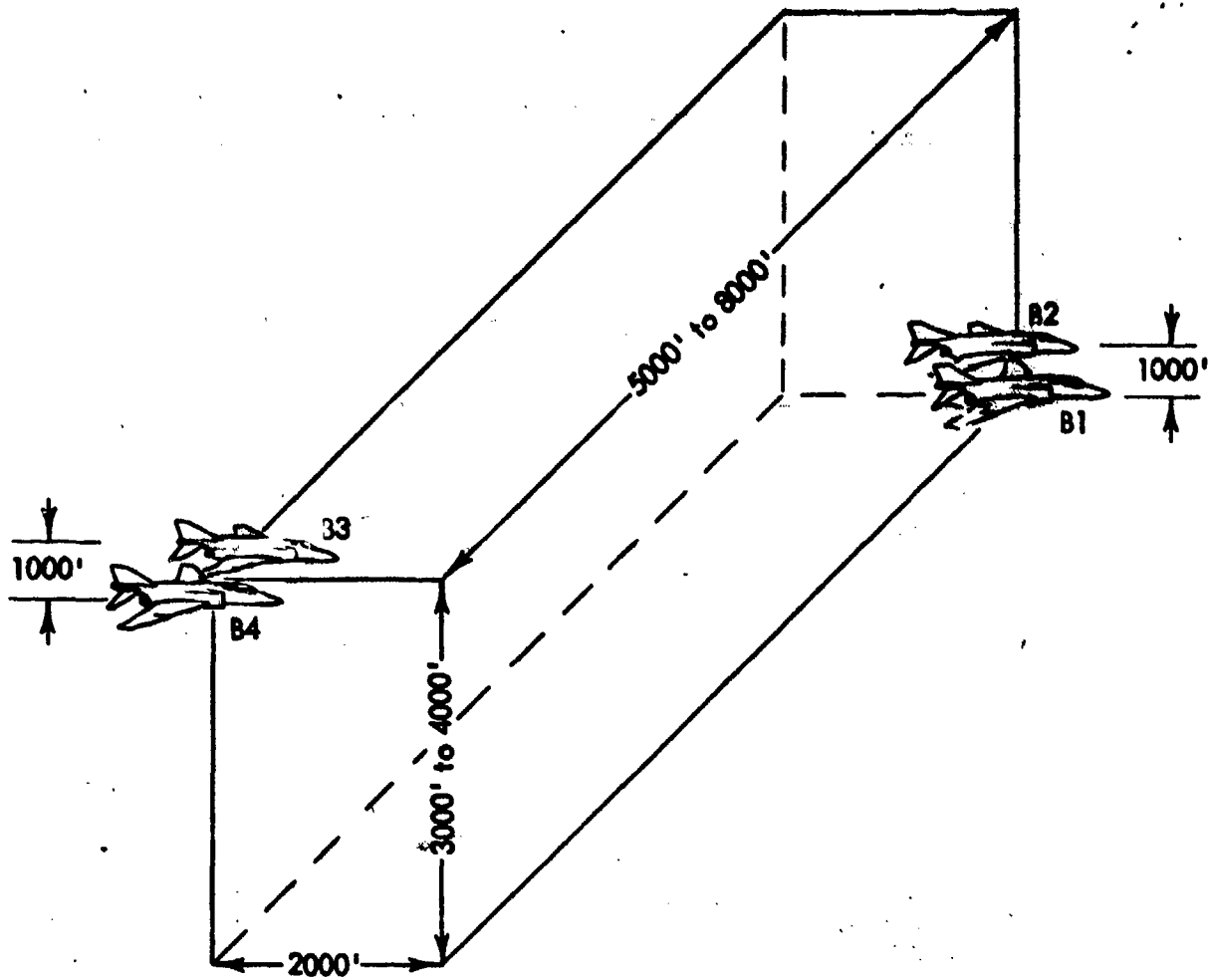
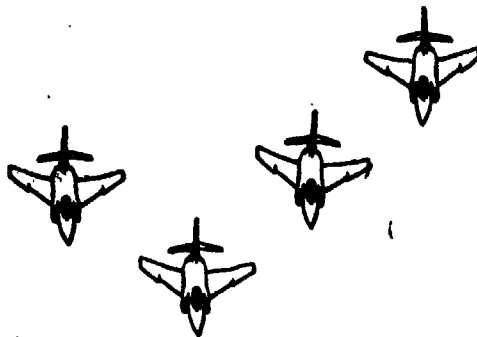
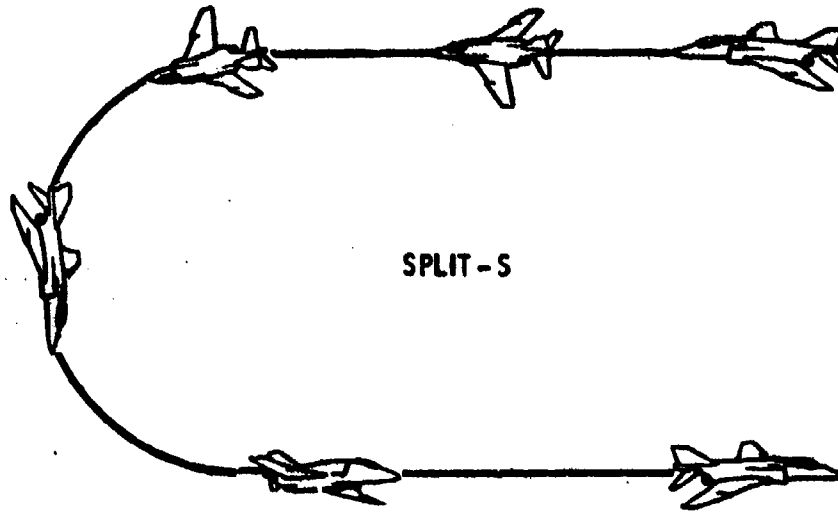


FIGURE 5. Fluid Four



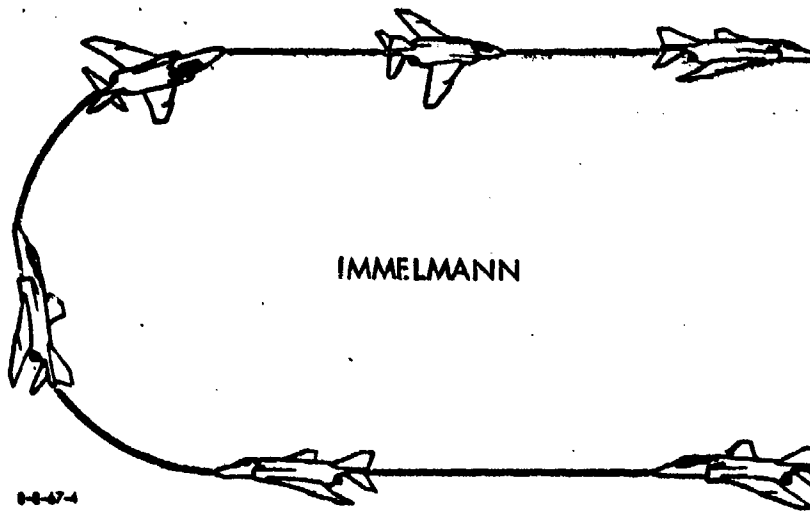
4-4-3

FIGURE 6. Fingertip or Finger Four (All at Same Elevation)



SPLIT-S

FIGURE 7. Split-S



IMMELMANN

FIGURE 8. Immelmann

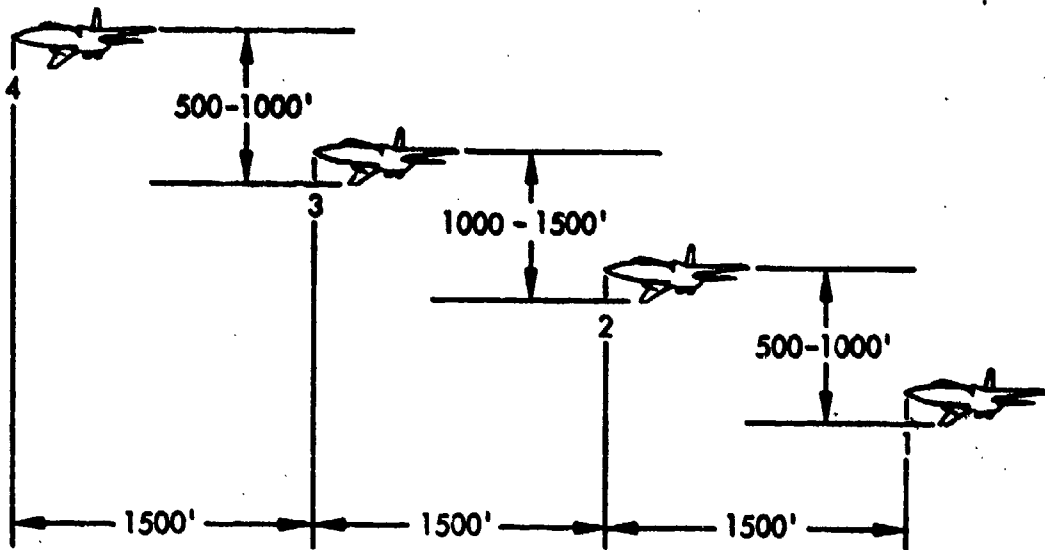


FIGURE 9 (S). Pod Formation*(U)
*Element may be on Left or Right

SECRET

Event II-1

Aircraft Involved: Four F-105s vs four MIG-17s

Result: Two F-105s lost

Vicinity of Encounter: 10 mi south of Thanh Hoa

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 April 1965/1215H

ROLLING THUNDER 9 AX mission - Target 14 - Thanh Hoa Bridge; 48 F-105s attacking target in flights of four; 4 F-100s on MIGCAP. The flight of 4 F-105s involved in this encounter was holding at the IP prior to attacking target.

2. MISSION ROUTE

Take-off 1130H (local time) from Korat, flew northeast to tanker, refueled about 1200. Proceeded at 480 kt to IP, 10 mi south of Thanh Hoa bridge.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1(L), 2, 3, 4

Full load 20mm cannon ammo

8 - 750-lb bombs

2 - 450-gal external wing tanks

Gross weight 49,000 lb at beginning of encounter

MIG-17 MIG 1, 2, 3, 4

Light gray, Chinese Communist marking - guns

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Haze layer - heaviest haze between 12,000-15,000 ft

Altitude: 15,000 ft

Heading: B1(L), 2, 3, 4 all beginning left-hand orbit at IP, B3 on heading of 200° at acquisition

Speed: 325-kt CAS (approximately Mach 0.63)

Fuel State: 11,000 lb

Flight Formation

5. INITIAL DETECTION

While in left-hand turn (beginning holding orbit at IP) 10° to 15° bank, B3 looked back and sighted two aircraft approaching the flight about 5000 ft away. In 1 to 2 sec he identified them as MIG-15 or 17s "coming out of the haze." Distance to MIGs when identified estimated at 3000 ft. Estimated MIG's speed at Mach 0.85. (F-105's speed approximately Mach 0.63.) When first element identified as MIGs, a second element of MIGs were sighted following first and aligned for attack on B3 and B4. B3 called MIGs; B4 followed with call when B1(L) and B2 did not react or acknowledge B3's warning.

6. ACTION INITIATED

B3 called break - B3 and B4 made hard nose-down turn into attackers, jettisoned stores, began switching to air-to-air mode. B1 and B2 continued in shallow banking left turn not reacting to warnings.

7. SITUATION DEVELOPMENT

Four heavily loaded F-105s flying a holding orbit at the IP at 15,000 to 16,000 ft altitude were attacked by four MIG-17s. The second element of F-105s (B3, B4) detected MIGs and called warnings. The warnings appeared to be unheeded by the lead element. Both F-105s in the lead element (B1 and B2) were hit by cannon fire from the first two MIGs attacking from above at the 105's 6 o'clock position. B1 and B2 jettisoned tanks after being hit. Enroute to acting RESCAP for B1, B3 was attacked by two MIGs (unknown if element of original four MIGs). B3 evaded MIG attack by executing a rapid slowdown maneuver while in a diving turn, causing MIGs to overshoot. One MIG in vertical dive near ground may not have recovered. B1 and B2 ejected.

8. ORDNANCE

	<u>No. Fired/No. Hits</u>	<u>Remarks</u>
BLUE 1, 2, 3, 4	0/0	
MIG 1	Guns 23 or 37mm/yes on B1	No HE flashes observed
MIG 2	Guns 23 or 37mm/yes on B2	HE flashes observed

9. EQUIPMENT PROBLEMS

B1 and B2 did not appear to receive voice transmissions from B3 and B4 although other aircraft in area verified warnings transmitted by B3 and B4. Unknown whether equipment failure or heavy transmission traffic on strike frequency responsible for not receiving or masking warning.

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10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 3</u>	3000	400- 500	2nd in SEA	Tactical fighter experience in F-84s and F-100s since 1957
<u>BLUE 4</u>	1700	600	5th in SEA	Limited gun training. Fired 2 AIM-9s in training.

Comments on this Encounter

Briefing to squadron, on rapid deceleration of F-105 when nose is pulled up sharply, was the maneuver employed to shake MIGs making second attack on B3. B3 had never practised this maneuver previous to this engagement.

Without radar protection (Big Eye, etc, were put into operation at a later date) the holding orbit near the target at low speed made the loaded F-105s ideal targets for the MIGs.

Communications "breakdown" between flight elements responsible for successful MIG attack on lead element of F-105s.

MIGs appeared to be GCI directed.

Comments from Overall Experience

Rapid, simple procedures for changing from ground attack to air-to-air mode without requiring pilot to look into cockpit are essential.

Air cover is inadequate and uncoordinated at this early date in war.

"Sterilizing" the target area against enemy air attack requires extraordinary coordination between GCI facility, interceptors and strike aircraft.

11. DATA SOURCES

Project Interviews: BLUE 3 - 4 January 1967; BLUE 4 - 4 January 1967

Messages, Reports:

PACAF Tactics/Technique Progress Bulletin No. 2 - 5 May 1965

Message from 2AD - 041437Z April 1965

Message from 2AD - 060740Z April 1965

PACAF - 052213Z April 1965

DIA Intelligence Bulletin 6 April 1965, page F-3

12. NARRATIVE DESCRIPTION

The following MIG encounter took place 4 April 1965 during an F-105D strike on Thanh Hoc bridge in Route Package III. The strike force consisted of 48 F-105s in flights of four. Four F-100s on MIGCAP for the strike are not part of this event (see Event III-1). The flight of four F-105s involved in this event are designated BLUE 1 (Leader), 2, 3 and 4. This flight was the fourth or fifth element in the strike force.

Because of refueling problems and consequent delays, (BLUE flight was 15 minutes behind schedule) the attacking elements were not on schedule and were "bunching" over the target. The strike was under control of a mission commander orbiting the strike area. As BLUE flight approached the IP the mission commander instructed them to orbit over the IP, which was approximately 10 mi south of the target.

T₀ BLUE flight was the third flight in orbit at the IP, flying at about 15,000 ft.

BLUE flight could see the second flight orbiting about 2000 ft below in the haze which hung between 12,000 and 15,000 ft. Because of the bomb and fuel load (eight 750-lb bombs; 11,000 lb fuel) the flight required military power to hold at 325-kt CAS at 15,000-ft altitude.

T₁T₂ As the flight completed a 180° left turn in the orbit, B3 and B4 were positioned about 800 ft above B1(L) and outward. The flight had been briefed that MIGs had been in the air the previous day, had come south to a point 30 mi off the target, made 180° turn and headed home. The flight was therefore alerted that MIGs were getting airborne and hence were hunting them. As B3 began turning inside Lead to maintain position in the turn, he looked to north for MIGs and sighted two airplanes approaching from behind in a 20° dive approximately 5000 ft behind the flight (B3 was passing thru a heading of 200° at the time). They were not identifiable for 1 or 2 sec. When at about 3000 to 4000-ft range, B3 identified the airplanes as MIGs, aligned on B1 and B2. B3 called "BLUE Lead break - you have MIGs behind you - - BLUE Lead - Break - BLUE Lead we're being attacked." This transmission on strike frequency was followed shortly by a similar warning from B4 to B1 and B2. Neither B1 nor B2 reacted to the warnings which were heard by

SECRET

Event II-1

other aircraft in the area. B3 reported that in addition to the 48 F-105s, 30 or more F-4Bs, F-100s, MIGCAPs, RESCAPs, as well as the mission commander, were calling on the strike frequency - "the F-4Bs were doing a bit of talking and in fact the 100s got into some sort of engagement and they were doing a bit of talking" - although the channel was cluttered, B3 and B4 felt they were close enough to override the more distant transmission and both made numerous attempts to warn Lead.

T₃ The lead element of MIGs coming in on a southerly heading in a slight dive (approx 20°) from above and at 6 o'clock, set up for an attack on the BLUE lead element. Two more MIGs sighted further behind the first element were setting up to attack B3 and B4. B3 called break, B3 and B4 broke left into the attack, lowered nose, put in maximum bank and g's. The attacking MIG element passed over and behind B3 and B4 - continuing in the original attack direction. Acceleration from 325-kt CAS (~ Mach 0.65) "was too slow to put either B3 or B4 into an effective fighting position fast enough."

The lead MIG element passed in front and above B3 and B4 at high speed (Mach 0.85 or higher). They were observed to be light grey in color with Chinese Communist red-star-and-bar markings on bottom of the wings and close enough to be identified as MIG-17s. The MIG leader's guns began flashing when about 1500 ft behind B1, and B3 observed several hits ("pieces of metal coming off") in the aft section of B1's aircraft. The second MIG, flying in "almost" a fighting wing position fired on B2 "almost simultaneously." B3 observed flames on the aft section of B2's airplane (the hits on B1 did not flash). B2 called B1... "Lead you have a MIG behind you - (pause) - I've been hit." The two MIGs ceased firing at a range of approximately 700-800 ft, rolled wings level, and continued straight ahead at high speed.

T₄ After a time the MIGs started a slow turn to the right and were lost to sight in the haze.

B4, with extensive training in F-105 systems (as gunnery officer instructor for 3 yr) and completely familiar with F-105 switches, was unable to complete sequence to air-to-air mode in time to engage the MIGs. He was unable to activate his gun sight. While attempting to set up switches he lost sight of the MIGs. B4 broke down in a tight spiral, and left to check his 6 o'clock position (B3 was no longer there), picked up speed to 1.1 to 1.2 Mach, then climbed to join B1 and B2. B4 decided to join B2 and B3 would join B1. B4 enroute to intercept B2 was flying at 0.96 Mach and overtook B2 doing about 200 kt (at about 500-ft altitude). Because of the haze, B4 did not see B2 until about 1000 to 1500 ft behind him, hence, overshot and lost him in the weather. As B4 turned and tried to find B2, B2 announced he was going to eject.

T₅, B3 flew toward B1 to act as RESCAP. As B3 turned to look for B1, B3 saw flashes behind him as two MIGs began an attack on B3 (B3 was flying about Mach 0.64 at 10,000 ft). B3 immediately pulled more g's and lowered the nose slightly, then T₆, rolled under, reversed his turn and began climbing. During the climb he kept turning T₇, to keep the attacking MIGs in sight. B3 observed that the MIGs were closing, so he T₈ rolled to the left as if starting a split-S. The MIGs followed. B3 pulled the nose downwards to left. He pulled power to idle in the turn until nearly 3/4 turn completed when he pulled the stick back sharply, bringing the nose up (20°-30° above the horizon) and rapidly slowing to about 250-kt CAS at about 4000-ft altitude. The MIGs slid outside and ahead of the F-105. The lead MIG went by B3 on the right about 800 ft away in "almost a vertical dive" followed by the second MIG in about a 30-40° dive. (Whether the lead MIG pulled out of the dive was unknown.) B3 eased the nose over and went to full power to recover as the MIGs overshot. B3 was so low that he had to slowly ease the nose up to avoid "mushing" into the ground. He pulled out at between 500 and 1000 ft of altitude, losing sight of the MIGs in the haze.

B3 began transmitting to B1(L) and DF homing until B1 was located. B1 indicated that he could fly safely and was instructed by B3 to climb out to as high an altitude as possible. Eventually they reached 20,000-22,000 ft. B3 flew around B1 to observe the damage. He reported seeing a large hole in the bottom panel of the speed brake, some damage to the top panel and a large hole ("about a foot or so across") in the left trailing edge flap. The drag chute door was open, but the chute was still inside. The speed brake petals were in the ejector position which indicated that B1 probably had a utility system hydraulic failure. This was confirmed by Lead. B3 also noted fluid coming out around the tailpipe which appeared to be hydraulic fluid and reported this to Lead.

B4 circled the area but could not observe B2 land because of an intervening low cloud deck. He did observe what he thought was the B2 aircraft impact the water. He thought later it could be fuel tanks from the F-100 RESCAPs in the area. An HU-16 SAR conducted a search but was unsuccessful in recovering B2.

B4 joined B3, escorting B1 toward Danang. The three airplanes were 10-12 mi (TACAN radio DME) from Danang at 15,000 ft when B1 eased back on engine power to begin the descent. (The field had been alerted to the emergency landing.) B1's engine lost oil pressure and "froze".

Lead had been preparing to make a spiraling descent landing, but as the engine froze he leveled out and began flying straight ahead at about 300-320 kt. He elected to eject.

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SECRET

Event II-1

Ejection appeared normal to B3 and B4 but B1 came out of the cockpit without his helmet. B1's parachute was not observed to open. Because of intervening clouds, B1 could not be observed to the water. B4 stayed high because he was at "almost emergency condition" on fuel. B3 spiraled down looking for Lead and stayed in the area until the rescue helicopter arrived. B3 had noticed a large naval vessel (later identified as USS CAMBERRA) about 10 mi to the south and he flew over it "waddling" his wing. The vessel immediately began moving to the area of the helicopter. B3 reached emergency fuel, but coordinated with the helicopter before leaving the scene. B1's body was recovered by rescue vessel, his chute had deployed but it was unknown if it had opened in time to check fall. Low on fuel, B3 and B4 made routine landings at Danang.

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RED BARON EVENT II-1 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1, 2, 3, 4)	Remarks
	Status	Action				
T0	8 - 750-lb bombs M6 ~ 49,000 lb 340-350 kt	Initiating holding orbit at IP at Mission Commander's order. B3 and B4 sliding out and under B1 and B2 as they approach 180° position of orbit				Successive strikes "bunching-up" over target required several flights to hold at IP, 10 mi south of target.
T1	Approaching southerly heading 320-kt CAS 15,000-16,000 ft			B3 called MIGs and	7 o'clock high - two MIGs attacking B1 and B2 about 5000 ft behind and 1500 ft to 2000 ft above. Closing speed ~ 200 kt	
T2 (~10 sec)	B3 and B4 see MIGs B1 and B2 unaware of attack (MIGs at 6 o'clock of B1 and B2)	B3 and B4 jettison bombs and begin setting up switches for air-to-air. Note second element of MIGs coming out of haze.	B1 and B2 made no change in flight position until MIGs complete firing pass.	B2 calls warning to B1 and reports being hit	M1 and M2 initiate firing about 2000-ft range. Continued to about 400 ft.	
T3 (~5-10 sec)	B1 and B2 jettison bombs. B2 losing power headed for sea descending slowly. B1 headed out to sea then south to Danang.	B3 and B4 broke down and left		B2 called going over to rescue frequency. Gave RESCUE information and tones for DF steers for B4 and RESCUE.	All MIGs continued straight ahead after passes, climbed, then started to right into haze.	B3 and B4 were at low speed (320 kt) and without gun sights. Complex switching not completed - B3 to RESCAP B1, B4 to RESCAP B2
T4					MIGs turning right disappear into haze	
T5	B2 headed for sea descending to about 5000 ft. B1 headed toward Danang climbing to 20,000-22,000 ft. B3 trying to find B1 to act RESCAP (0.8M). B4 trying to find B2 to act RESCAP (0.8M)			B1 reported on 165° heading, B3 homing in on transmissions on UHF/VF. B4 talking to B2 in attempt to find B2.		B3 slowed down so as not to over-shoot B1

Interval after last time mark

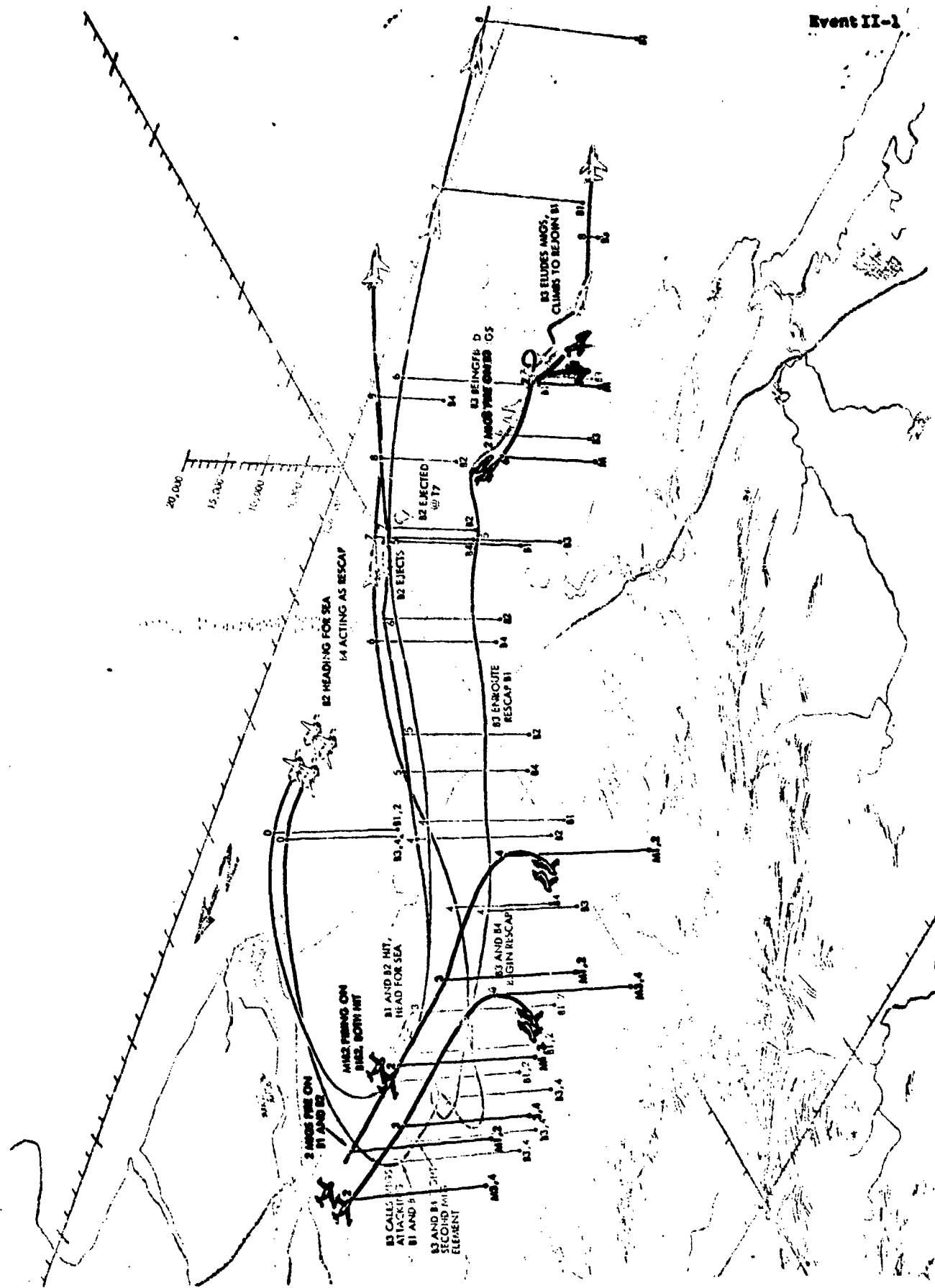
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RED BARON EVENT II-1 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1, 2, 3, 4)	Remarks
	Status	Action				
T6	B3 in left turn 10,000 ft, 400 kt AB/for short turns	Sees 2 MIGs firing. Rolls under, reverses turn and climbs	B1, 2 and 4 separate	B2 announced he was ejecting. Reported control problems.	MIGs shooting at B3 from rear (coming from north)	
T7	B3 rolls as though going into split-S makes corkscrew turn to left (3/4 turn) pulls up sharply slowing to 250-kt CAS at 4000 ft	Decelerates in descending spiral by bringing nose up fast.	B2 ejected		Head MIG in vertical dive about 800 ft ahead and to side. Second MIG in 30°-40° dive (at 4000 ft altitude).	
T8	B3 recovers at 500-1000 ft	B3 climbs to rejoin B1				

SECRET

Event II-1



SECRET

9. EQUIPMENT PROBLEMS

BLUE 1 was unable to get a lock-on with his gun sight.

10. AIRCREW COMMENTS

<u>Experience</u>	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Missions</u>
BLUE 1, 2 & 3	Unknown		
BLUE 4	1800	1000	Unknown

Comments on this Encounter

BLUE 4 - MIG 1 fire control system was apparently not too good because the bullets were missing by a gross range. MIG 1 apparently did not want to pull any more g. MIGs didn't punch their tanks until F-105s did.

BLUE 1 - As an effective fight, we didn't do too well as far as being attacked by the MIGs is concerned. This was our first actual engagement. Would have been nice to have a few missiles on this engagement.

Comments from Overall Experience

BLUE 1 - For an aircraft we need high energy maneuverability or a high sustained g capability. Need good visibility to the rear. Need a good gun sight; we have a low reliability on our integrated radar or computer gun sight.

BLUE 2 - 105 should engage MIG at Mach .98.

11. DATA SOURCES

Project Interviews: BLUE 1 - 9 March 1967; BLUE 2 - March 1967;
BLUE 3 - 6 January 1967.

Messages: 2AD OPREP-4 241721Z June 1965
2 DOTO 03230
CINCPACFLT Staff Study 3-67

12. NARRATIVE DESCRIPTION

BLUE Flight was scheduled for a target in the Son La area. Takeoff was delayed so as to arrive over target at about the termination time of the other strikes with a minimum of fuel expended and then proceed on a MIG search. Refueling was normal but the target was weathered in and an alternate target was hit (a railroad). Then BLUE Flight proceeded on a southerly heading in a Fluid 4 formation (3 & 4 2,000 ft high) to a position approximately northwest of Phuc Yen, when they made a turn to the north. On rolling out on a heading of 360°, BLUE 2 called out to the high element (BLUE 3 & 4), "Look out (BLUE 4), you have two at 6 o'clock." BLUE 4 couldn't see the MIGs. All four aircraft then jettisoned their tanks. The MIGs came out of the clouds at a high altitude and on seeing the 105s jettisoning their tanks, did the same. BLUE 1 then called, "Break, right" and climbed toward the high element. BLUE 3 and 4 simultaneously turned right and descended so as to sandwich the MIGs between them and the low element (BLUE 1 and 2). At first only one MIG was sighted by BLUE 2, but 1000 ft behind MIG 1 came MIG 2 closing on MIG 1. BLUE 1 and 2 managed to get behind the MIGs. While in the turn, BLUE 4 still couldn't see the MIGs and at this time BLUE 1 called out, "Rog, they're MIGs, they're firing keep going." Again BLUE 1 called out, "Four, look out, they're firing." BLUE 4 then crossed over to the left side of BLUE 3 and saw the MIGs at his 5 o'clock position.

BLUE 4 was so engrossed with the MIGs and being fired on that he failed to notice BLUE 3 increasing his g's. MIG 1 was now about 2,500 ft back at BLUE 4's 5 o'clock position. BLUE 4 became separated from BLUE 3. By this time BLUE 1 and 2 were approximately 5000 ft in trail with the two MIGs when MIG 2 tightened his turn and appeared to be cutting across the circle possibly going after BLUE 3. MIG 1 was still on BLUE 4's tail and firing. At this point BLUE 4 asked for someone to get the MIG off his tail. BLUE 1 and 2 were unable to close on MIG 1 mainly because they hadn't selected afterburner, but when MIG 2 turned they were able to go after him. Just as BLUE 1 fired at MIG 2, the MIG broke left hard and inside BLUE 4's turn. BLUE 4 continued on around in his turn but MIG 1 was not pulling lead and was maintaining 2500 ft separation. After 180° of turn, BLUE 4 was at 7,000 ft with MIG 1 still on his tail.

Meanwhile BLUE 1 and 2 turned left and up with MIG 2 and went through some turns which appeared to BLUE 1 as though MIG 2 was looking for MIG 1. Then MIG 2 turned right and appeared to see BLUE 1 and 2 at which time he turned left sharply and climbed into the clouds. BLUE 1 attempted to follow and called and said he had lost sight of BLUE 4. BLUE 4 then lit afterburner, dove for the deck to pick up 1.1 Mach and lost MIG 1. BLUE 4 after a few miles separation turned left to find that he had lost MIG 1, at which time BLUE 1 called and told BLUE 4 to leave the area to the south.

BLUE Flight joined and returned home safely.

RED BARON EVENT II-2 SUMMARY

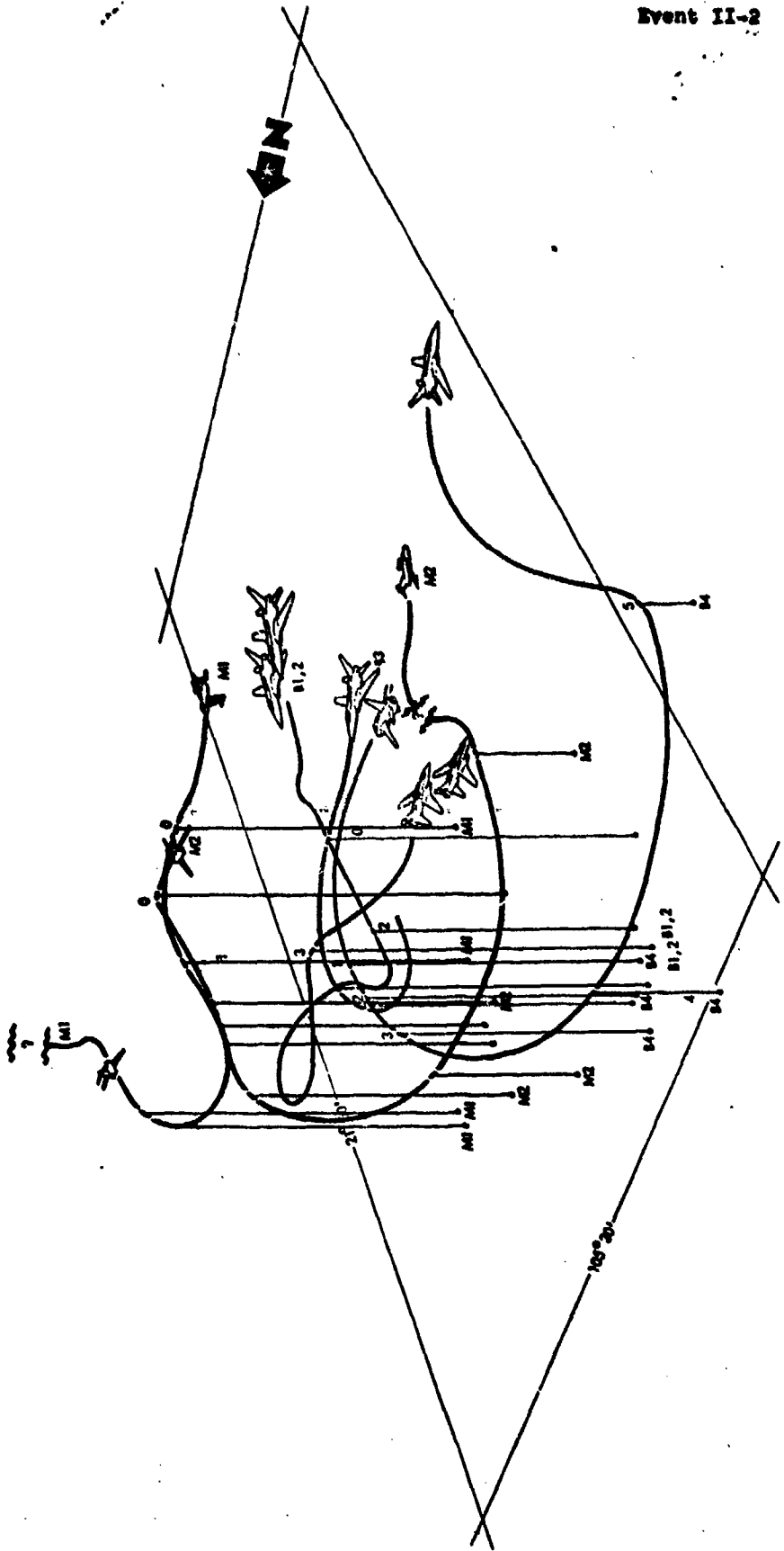
Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	Alt B1&2 15,000 ft Alt B3 & 4 17,000 ft Speed - 460 KCAS Head - 360°	High element broke rt and down. Low element broke rt and up. All aircraft jettisoned external stores.		B2 called "Look out (BLUE 4) you have two at 6 o'clock." Calls break right. B4 tells B3 "you've got it, three." B1 says "No, they're MIG's, they're firing, keep going."	Came out of clouds from a high altitude on a 10-150 dive at B3 & 4's 6 o'clock. Jettisoned external stores on seeing friendlies do so. M2 about 2,000 ft behind M1.	B3 at this point doesn't see MIGs.
T ₁	B3 & 4 speed .90M Alt - approx 17,000 ft pulling 3 g's.	B3 & 4 are out in front with M1 firing on B4. B1 & 2 are closing on M1 & 2. B4 goes to the outside of B3 (on left wing) and sees MIGs about 2,000 ft back.		"Four, look out they're firing" by B1.	M1 firing on B4; 1: about 2,000 ft back.	
T ₂		B1 & 2 too far out on M1 out of position. Chose M2 to attack.	B3 pulls high g's and loses B4 who is looking at MIGs. B3 now out of action. B3 in descending steep turn. B4 still pulling 3 g's.	B3 asks someone to get MIG off his tail, that MIG is cutting him off.	M2 attempts to cut across circle and intercept B3 in tight turn.	M1 was not pulling any lead on B4. A11 cannon fire was not close in range. Believe M2 was attempting to pull lead on B3.
T ₃		B1 fires at M2 in turn B1 tries to lock-up to M2 on radar when M2 rolls out. B1 about 4,000 ft behind M2.	M2 is followed in left turn by B1 & 2.		M2 breaks left and up. M2 still on B4's tail. M2 being fired at by B1.	
T ₄		B1 follows M2 who then breaks hard left and into overcast. B1 reverses turn to look for B4.	B4 still has M1 on tail heading 180° 7,000 ft.	B1 has lost sight of B4.	M2 makes hard left turn into clouds and loses B1&2.	It was believed M2 was looking for M1 when he saw B1 & 2 and broke to left.

RED BARON EVENT II-2 SUMMARY

Time Mark	Action Aircraft (BLUE 1. 3. 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T 5		B4 descends to obtain 1.M. loses M1. B3 joins up with B1 & 2.		Transmitting of steers to lead but B1 unable to locate B4. B1 told B4 to leave area.		B4, after a few miles separation, turns back to the left but unable to find M1. Climbs to 15,000 ft and leaves area. BLUE Flight later joins and returns home safely.

SECRET

Event II-2



SECRET

SECRET

Event II-3

Aircraft Involved: One F-105 vs MIGs
Result: One F-105 lost
Vicinity of Encounter: 21°55'N/106°42'E
(Dong Dang)

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 October 1965, daylight

Four F-105s (BLUE Flight) on a strike mission against the Lang Met highway bridge (21°30'N/106°21'E).

11. DATA SOURCES

OP-05W4 List of MIG Encounters
DIA Intelligence Bulletin 18 July 1966
WSEG Compendium of Aircraft Losses

12. NARRATIVE DESCRIPTION

After the strike, BLUE 2 heard BLUE 1 call that BLUE 1 was off on a heading of 114°. This was BLUE 1's last transmission. China claimed a border violation and that the F-105 was shot down by MIGs.

Event II-4

Aircraft Involved: Four F-105s vs two MIG-17s
Result: No damage
Vicinity of Encounter: 21°N/107°50'

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: October 1965/Not specified

Exiting from IRON HAND mission in conjunction with strike on missile site southeast of Kep.

11. DATA SOURCES

Project Interviews: BLUE 3, 6 Jan 67

12. NARRATIVE DESCRIPTION

BLUE Flight of four F-105s were exiting to the Gulf of Tonkin after an IRON HAND mission in support of a strike on a missile site southeast of Kep. They were heading east, on the deck, at a speed of Mach 0.98 to 1.01 when two MIG-17s fell in behind at a range of 5000 to 6000 feet. The MIGs apparently tried to catch up but never got much closer than a mile even though BLUE 4 had been damaged by ground fire.

BLUE Flight was short on fuel but this was not necessarily a factor which kept them from engaging the MIGs. (See BLUE 3 comments in Event II-17).

Event II-5

Aircraft Involved: Five F-105s vs two MIG-17s
Result: No damage
Vicinity of Encounter: 21°18'N/104°12'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 November 1965/1540H

Five F-105s (BLUE Flight) on a strike mission.

11. DATA SOURCE

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

MIGs closed fast, moving to 6 o'clock position approximately 3 miles behind BLUE Flight. BLUE Flight accelerated to Mach 0.93 and pulled away, being unable to engage due to low fuel state.

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SECRET

Event II-6

Aircraft Involved: One F-105 vs two MIG-17
Result: Sighting
Vicinity of Encounter: 20°55'N/104°46'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 November 1965/1212H
An F-105 (BLUE 3) was on RESCAP for BLUE 2.

11. DATA SOURCE

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

BLUE 3 observed two MIGs for approximately 3 seconds while descending, but no attack was made by either side.

Event II-7

Aircraft Involved: Four F-105s and five MIG-17s
Result: Sightings only
Vicinity of Encounter: 21°30'N/104°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 December 1965/1630H
A flight of four F-105s (BLUE Flight) was on a strike mission.

11. DATA SOURCES

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

BLUE Flight sighted five MIGs, one in lead and two sections following in trail. No engagement resulted.

Event II-8

Aircraft Involved: Three F-105s vs two MIGs
Result: Sighting only
Vicinity of Encounter: 20°30'N/103°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 December 1965/1625H
Three F-105s (BLUE Flight) on a mission on RT 44A-1.

11. DATA SOURCES

RED BARON MIG Incident Summary.

12. NARRATIVE DESCRIPTION

BLUE Flight sighted the MIGs 1-1/2 miles behind the flight. No engagement occurred.

SECRET

SECRET

Event II-9

Aircraft Involved: Four F-105s vs two MIG-17s

Result: No damage

Vicinity of Encounter: 21°15'N/107°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 December 1965/1600H.

Four F-105s (BLUE Flight) on a SARCAP for another F-105 (GREEN 3).

11. DATA SOURCES

CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

BLUE Flight sighted two MIGs coming from the direction of Haiphong. The F-105s attempted to attack but could not catch the MIGs. The MIGs were coming straight and level; and BLUE Flight turned into the MIGs who passed under BLUE Flight with about 700 ft separation. The MIGs did not slow or turn, and no further action resulted.

Event II-10

Aircraft Involved: Four F-105s vs two possible MIG-21s

Result: Sighting only

Vicinity of Encounter: 21°26'N/103°02'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 March 1966/1433H

BLUE Flight was diverted from primary target for RESCAP mission. Dropped ordnance on secondary target prior to RESCAP.

5. INITIAL DETECTION

It is not known which member of BLUE Flight sighted MIGs. MIGs crossed 2 miles in front of BLUE Flight headed for Hanoi.

6. ACTION INITIATED

Distance between aircraft prevented action.

7. SITUATION DEVELOPMENT

MIGs exit to Hanoi; BLUE Flight continued RESCAP.

8. ORDNANCE

None expended

9. EQUIPMENT PROBLEMS

None noted.

10. AIRCREW COMMENTS

No interviews.

11. DATA SOURCE

Message: 2AD 101155Z, DOCS 15376, Mar 66.

12. NARRATIVE DESCRIPTION

BLUE Flight was on a strike mission. They were diverted to a RESCAP mission and dropped their ordnance on a secondary target. At about 21°26'N/103°02'E, they sighted two possible MIG-21s 2 miles ahead, heading to Hanoi. They did not pursue the MIGs. Markings were unidentifiable due to distance. MIGs were at 24,000 ft.

SECRET

SECRET

Event II-11

Aircraft Involved: Four F-105s vs three MIG-17s

Result: No damage

Vicinity of Encounter: 21°55'N/105°34'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 23 April 66/1532H

Four F-105s (BLUE Flight) had bombed the Bac Giang Bridge and was exiting the area. BLUE 2 was separated from the rest of the flight.

2. MISSION ROUTE

BLUE flight was from Korat but route to target unknown. Egress was overland through Laos.

3. AIRCRAFT CONFIGURATIONS

BLUE Flight carried an unknown number of 750 lb bombs.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Cloud cover at unknown altitude.

BLUE Heading -290° 1500 ft AGL 550 KTAS

5. INITIAL DETECTION

BLUE 2 detected 3 MIGs at his 3 o'clock position, on a reciprocal heading at an altitude of 2,000 ft.

6. ACTION INITIATED

BLUE 2 entered cloud layer to elude MIGs.

7. SITUATION DEVELOPMENT

Two of the three MIGs chased BLUE 2 for 20 n mi (about 3 minutes) and fired before breaking off. BLUE 2 rejoined flight and exited the area.

8. ORDNANCE

BLUE flight expended no air-to-air ordnance. MIGs had cannons and fired unknown number of times at BLUE 2. No hits.

9. EQUIPMENT PROBLEMS

None noted.

10. AIRCREW COMMENTS

None.

11. DATA SOURCES

Project Interviews: BLUE 4 14 March 1967

Messages, Reports: Messages: a. 7AF 231133Z, DOCO-18143, Apr 66, OPREP-3
b. 250420 Apr 66, DIAAP-2 9208
CINCPACFLT Staff Study 3-67

12. NARRATIVE DESCRIPTION

BLUE flight was part of the strike force which was supported by the U.S. aircraft in Events I-22 (F-4s escorting a B-66) and I-23 (F-4s on MIG SCREEN). These aircraft were not involved in this event.

After attacking the target, BLUE Flight, which was the last of 3 or 4 strike flights, turned north to evade heavy 37mm, 57mm and 85mm flak from the Kep area. During this maneuver BLUE 2 became separated from the flight. BLUE 2 was heading 290 degrees about 55 miles NW of the target when he observed 3 MIG-17s at 3 o'clock on a reciprocal heading. Two of the MIGs made a 180 degree turn and gave chase firing on BLUE 2. Although the MIGs chased him for 20 miles, BLUE 2 successfully evaded by using cloud cover and low altitude. BLUE 2 did not use afterburner. During the chase, BLUE 2 informed the rest of the flight of the situation, but BLUE 4 did not hear the transmission.

The remaining 3 aircraft of BLUE Flight turned west for the Red River and the turning point south. BLUE 2 rendezvoused with the rest of the flight on the West bound leg but by that time the MIGs had broken off.

SECRET

Aircraft Involved: Four F-105Ds vs two MIG-17s

Result: No damage

Vicinity of Encounter: 21°22'N/107°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 May 1966/1605H

BLUE flight had left the target after a strike and was heading toward Tonkin Gulf.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	<u>Altitude</u>	<u>Speed</u>	<u>Heading</u>
BLUE 1, 2, 3, 4	5,000 ft	450 kt	110°
MIG 1, 2	7,000 ft	Unknown	130°

BLUE Flight in Fingertip-Four formation

5. INITIAL DETECTION

BLUE Flight had received a general MIG alert from EC-121.

BLUE 3 detected MIG flight of two aircraft at 8 o'clock, about 2,000 ft above. MIGs crossed over and continued to 3 o'clock position, apparently not detecting BLUE Flight.

6. ACTION INITIATED

The MIGs turned to close on BLUE Flight. BLUE Flight accelerated to 575 knots. MIG 2 attacked from 6 o'clock.

7. SITUATION DEVELOPMENT

BLUE 1 did not know of presence of MIGs because of bad radio receiver and continued straight and level. BLUE 2, 3, and 4 started jinking maneuver. BLUE 4 reported that MIG 2 fired his cannon. During maneuvering, BLUE 2 took a snapshot burst at MIG 1 at 3 o'clock position. MIG flight withdrew with no damage to either side.

8. ORDNANCE

	<u>(No. fired/No. hits)</u>	<u>Remarks</u>
	Cannon	
BLUE 2	1/0	Snapshot during jinking maneuver.
MIG 2	1/0	Miss.

9. EQUIPMENT PROBLEMS

Radio communications very poor. BLUE 1 had no receiver.

10. AIRCREW COMMENTS

BLUE 2: MIG attacked from above and showed low level of training/experience. During later events, the MIG attacks were more aggressive and attacked from below.

11. DATA SOURCES

Project Interview: BLUE 2, 15 March 1967.Reports: CINCPACFLT Staff Study 3-67.

12. NARRATIVE DESCRIPTION

BLUE Flight of 4 F-105s was returning from a strike mission when BLUE 3 detected a pair of MIG-17s at 8 o'clock. The MIG flight was about 2,000 ft above and crossed over to the 3 o'clock position, apparently without seeing BLUE Flight.

BLUE Flight continued straight and level and MIG flight turned to close. BLUE Flight accelerated to 575 kt. BLUE 1, unaware of MIG presence due to radio malfunction, continued to fly straight and level but BLUE 2, 3, and 4 flew jinking maneuver. MIG 2 attacked from 6 o'clock position. MIG cannon fire was reported by BLUE 4. BLUE 2 fired snapshot burst at MIG 1 at 3 o'clock position turning jinking maneuver. MIG flight withdrew, no damage.

SECRET

Event II-13

Aircraft Involved: Four F-105Ds vs four MIG-17s

Result: Sighting only

Vicinity of Encounter: 21°10'N/104°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 May 1966/1621H

BLUE Flight was returning from RESCAP mission in two elements when MIGs were sighted by each element. BLUE 1 and 2 were several miles behind BLUE 4 and 5. BLUE 3 had been shot down by ground fire.

2. MISSION ROUTE

Enroute to Udorn from a bombing mission in the vicinity of Yen Bai.

3. AIRCRAFT CONFIGURATIONS

BLUE 1, 2 Unknown
BLUE 4, 5 Drop tanks
MIG 1, 2 No external stores, silver color
MIG 3, 4 Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	<u>Altitude</u>	<u>Heading</u>	<u>Fuel State</u>
BLUE 1, 2	7,000 ft	225°	Low
BLUE 4, 5	12,000 ft	225°	1200 lb
MIG 1, 2	7,000 ft	315°	--
MIG 3, 4	--	225°	--

5. INITIAL DETECTION

BLUE 1 and 2 visually detected two MIGs at 9 o'clock.

BLUE 4 detected the presence of MIGs by means of a MIG-type armed vector. MIG 3 and 4 were visually detected at 6 o'clock as two specks at a range of seven miles and closing fast. The location was between the Red and Black Rivers.

6. ACTION INITIATED

BLUE 1 and 2 began to descend as MIG 1 and 2 began a slow 30° bank into a pursuit curve.

BLUE 4 and 5, who had been descending, continued to descend. MIG 3 and 4 continued to close.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 continued to descend. MIG 1 and 2 closed to about one mile at 6 o'clock when BLUE 1 and 2 reached 3,000 ft AGL at a speed of 1.1 Mach. BLUE 1 and 2 out accelerated MIG 1 and 2.

BLUE 4 dropped tanks and both BLUE 4 and 5 lit afterburner. They descended to the deck at Mach 1.3-1.4 and lost MIG 3 and 4 before reaching the Black River.

8. ORDNANCE

None.

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

None.

11. DATA SOURCES

Project Interview: BLUE 5 - February 1967

Messages, Reports:

7AF OPREP 101637Z DOCO-0 19229 May 66
7AF OPREP 102117Z DOCO-0 19253 May 66
CINCPACFLT Staff Study 3-67

12. NARRATIVE DESCRIPTION

BLUE 1, 2, 3 and 4 attacked a target near Yen Bai and BLUE 3 was shot down by ground fire. BLUE 1, 2, and 4 were joined by a member of an earlier flight and all formed a RESCAP. The new member is called BLUE 5.

SECRET

SECRET

Event II-13

BLUE 4 and 5 became low on fuel and departed for Udorn. BLUE 1 and 2 followed a few minutes later.

BLUE 1 and 2 sighted two MIGs at 9 o'clock in a slow 30° bank as if in a pursuit curve. The MIGs closed to about one mile at 6 o'clock as BLUE 1 and 2 descended to 3,000 ft AGL and accelerated to Mach 1.1. The MIGs were out accelerated. No attempt was made to engage the MIGs because of the low fuel state.

BLUE 4 detected the presence of MIGs by means of a MIG-type armed vector. MIG 3 and 4 were visually detected at 6 o'clock as two specks at a range of seven miles and closing fast. BLUE 4 and 5 decreased altitude, BLUE 4 dropped tanks, and both lit afterburners. They descended to the deck at 1.3 Mach and lost the MIGs.

SECRET

SECRET

Event II-14

Aircraft Involved: Four F-105s vs three MIG-17s

Result: Sighting only

Vicinity of Encounter: 21°10'N/104°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 10 May 1966/1800H

BLUE Flight was returning from a bombing mission near Yen Bai.

11. DATA SOURCES

DIA Intelligence Bulletin

12. NARRATIVE DESCRIPTION

BLUE Flight of four F-105s was returning from a bombing mission near Yen Bai when they encountered three MIG-17s. The MIG flight made three descending turns over the flight coming as close as two miles. Apparently no firing passes were made.

A flight of F-4s was informed of the MIG's presence. The MIG flight withdrew on arrival of the F-4s.

SECRET

SECRET

Event II-15

Aircraft Involved: Four F-105s vs four MIG-17s

Result: One MIG destroyed and two F-105s damaged

Vicinity of Encounter: 21°33'N/105°37'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 June 1966/1310H

Four F-105s were on an IRON HAND mission in the vicinity of JCS Target 51 at 21°10'N/105°51'E. The flight had left the target and was heading northwest at 4-5,000 ft AGL when attacked by four MIG-17s.

2. MISSION ROUTE

BLUE Flight took off from Korat at 1215H. They headed north at 0.8 Mach and at 16,000 ft to rendezvous with the Orange track tanker. After refueling, BLUE Flight headed northeast at 18,000 ft and 420 knots ground speed. The flight proceeded past checkpoint Alpha and on to JCS Target 51.

3. AIRCRAFT CONFIGURATION

	<u>Aircraft</u>	<u>Tanks (Inboard)</u>	<u>SHRIKE (Outboard)</u>	<u>LAU-3A (Outboard)</u>
F-105F,	BLUE 1	two, 450 lb	one left, one right	
F-105D,	BLUE 2	two, 450 lb		one left, one right
F-105D,	BLUE 3	two, 450 lb	one left	one right
F-105D,	BLUE 4	two, 450 lb		one left, one right

All of BLUE flight camouflaged. BLUE 1 had vector and WILD WEASEL equipment. BLUE 3 had vector equipment.

MIG flight (1, 2, 3, 4) had Red Stars on wing tips and on the vertical stabilizer. No missiles or missile racks were observed.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken to overcast between 2 and 12,000 feet. Below the cloud base, the visibility was about seven miles.

Altitude: 4,000-5,000 ft AGL

Speed: 480 knots ground speed

Fuel State: 13,000 pounds

Flight Formation: Two elements of two F-105s. BLUE 3 and 4 approximately one-half mile to rear and one-half mile to right of BLUE 1 and 2.

5. INITIAL DETECTION

BLUE 4 sighted MIG flight at 7 o'clock at 2-3,000 ft. MIGs were closing with 50 to 70 knots closing speed at an altitude of 2-3,000 ft AGL.

6. ACTION INITIATED

BLUE 4 broadcast MIG warning. BLUE 3 called for a hard left break, carried out by BLUE 3 and 4. BLUE 1 and 2 apparently did not hear the warning.

7. SITUATION DEVELOPMENT

MIG 1 fires at BLUE 3 (miss) as BLUE 3 and 4 break and dive. MIG 1 and 2 continued on and headed for the lead element. (MIG 3 and 4 followed but did not take active part in fight.) BLUE 1 and 2 had begun a left turn when BLUE 1 sighted the MIG flight at 8 o'clock. He called to break left, go to afterburner, and jettison ordnance. MIG 1 hit BLUE 2 with 23mm cannon fire but overflew the target and ended up at BLUE 2's 12 o'clock. BLUE 2 shot down MIG 1.

Meanwhile, MIG 2 attacked BLUE 1 causing damage. BLUE 4 engaged MIG 4, firing 200 rounds of 20mm. BLUE 3 closed on MIG 2 and fired a fleeting shot.

BLUE 2 departed due to damage and BLUE 3 left to cover BLUE 2. BLUE 1 took a long range shot at two departing MIGs.

8. ORDNANCE

	<u>No. Fired/No. Hits</u>	<u>Remarks</u>	
	<u>SHRIKE</u>	<u>Cannon</u>	
BLUE 1	1/0	1/0	Fired SHRIKE at SAM site. Site went down 40 seconds after launch. No BDA. Short burst 20mm, no damage.
BLUE 2		1/1	200 rounds. Confirmed MIG kill.

SECRET

8. ORDNANCE (Cont'd)

	No. Fired/No. Hits		
	<u>SHRIKE</u>	<u>Cannon</u>	
BLUE 3	1/0	1/0	SHRIKE fired into the blind. 100 rounds of 20mm; range 2,500 ft at high angle off.
BLUE 4		1/0	200 rounds, no damage.
MIG 1		2/1	Missed BLUE 3, damaged BLUE 2.
MIG 2		1/1	Damaged BLUE 1.

9. EQUIPMENT PROBLEMS

BLUE 2 took 23mm cannon hits on side of cockpit and one shell through cockpit. These hits knocked out all instruments except engine instruments but including the gun sight and the oxygen equipment. MIG kill made in spite of lack of gun sight.

Communication problems between aircraft prevented effective MIG warning.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	
BLUE 3	3100	1000+	25	Had no formal air-to-air training for 13 years. Qualified on DART twice a year. Would have liked to have had better combat training including more air-to-air practice. BLUE 3 stated the F-105 needs better turning capability and a panic means to get into air-to-air mode. The equipment worked fine.
BLUE 1,2,4				Not Interviewed

11. DATA SOURCES

Project Interview: BLUE 3, 6 January 1967

Letter Statement: BLUE 2, 20 February 1967

Messages:

7AF/NMCC/Z291150Z, 29 June 1966

7AF/OPREP/Z291235Z, 29 June 1966

7AF/DAI/0300226Z, 30 June 1966

7AF/AIG 913/0250627Z, 25 September 1966

12. NARRATIVE DESCRIPTION

BLUE Flight of four F-105s are on an IRON HAND mission in the vicinity of 105°37'E/21°33'N when they are attacked by a flight of three MIG-17s. (MIG 4 is about four miles to the rear.)

T₀ - BLUE Flight is divided into two elements of two. BLUE 3 and 4 following about a half-mile to the rear and a half-mile to the right. All are flying straight and level at 4 to 5,000 feet and at approximately 480 knots ground speed. BLUE 4 sighted MIG flight closing with 50 to 70 knots closing velocity, at a range of 2 to 3,000 feet, and at an altitude of 2 to 3,000 feet AGL.

T₁ - BLUE 4 gives MIG warning and BLUE 3 calls for a left break. Apparently BLUE 1 and 2 did not hear transmissions as they continued on. MIG 1 fired at BLUE 3 but missed. MIGs 1, 2, and 3 continue after BLUE 1, 2.

T₂ - BLUE 3 and 4 continue their diving break. BLUE 3 radios BLUE 4: "Glad you called the MIGs." At about this time, BLUE 1 and 2 begin a left turn when BLUE 1 sights MIGs at 8 o'clock and called for a diving left break. BLUE 1 and 2 go into afterburner and dive left.

MIG 1 fires at BLUE 2. Several rounds hit and one round went through the cockpit. This round knocked BLUE 2's hand off the throttle (putting him out of afterburner) and damaged his instruments, except engine instruments, including his gun sight and oxygen equipment.

MIG 2 fires at BLUE 1 and hits him in the vertical and horizontal stabilizer.

T₄ - MIG 1 overflew the target and ended up at BLUE 2's 12 o'clock. BLUE 2 fired about 200 rounds and observed about ten hits. MIG 1 rolled over and did Split-S into clouds (at 2,000 ft).

BLUE 2 sees MIG 2 at 10 o'clock and 200 feet away. But when BLUE 2 maneuvers toward MIG 2, he observed MIG 3 at 6 o'clock. BLUE 2 escapes into broken clouds.

T₃ - Meanwhile, BLUE 4 engages MIG 4 who is joining the MIG flight. No damage. MIG 4 disengages and BLUE 4 attempts to rejoin BLUE Flight.

SECRET

Event II-15

BLUE 3 ends break after 270 of 360 degree turn and finds he is separated from BLUE 4. BLUE 3 heads into clouds to lose any MIGs which may be attacking.

T₅ - BLUE 2 announces he is damaged and heading for Point Alpha. BLUE 3 acknowledged, said he would meet him there, and engages afterburner.

T₆ - In heading for Point Alpha, BLUE 3 sees MIG 2 on tail of BLUE 1. BLUE 3 takes high angle shot at MIG who executes very sharp break. BLUE 3 departs for Point Alpha.

T₇ - MIG 3 joins with MIG 2 as BLUE 1 fires burst at long range. No damage.

Official weather forecast puts clouds at 5 to 12,000 ft. But both BLUE 2 and BLUE 3 mention clouds as low as 2,000 ft. The scattered clouds alternately helped and hindered the BLUE Flight as both sides used the available cover when necessary.

SECRET

RED BARON EVENT II-15 SUMMARY

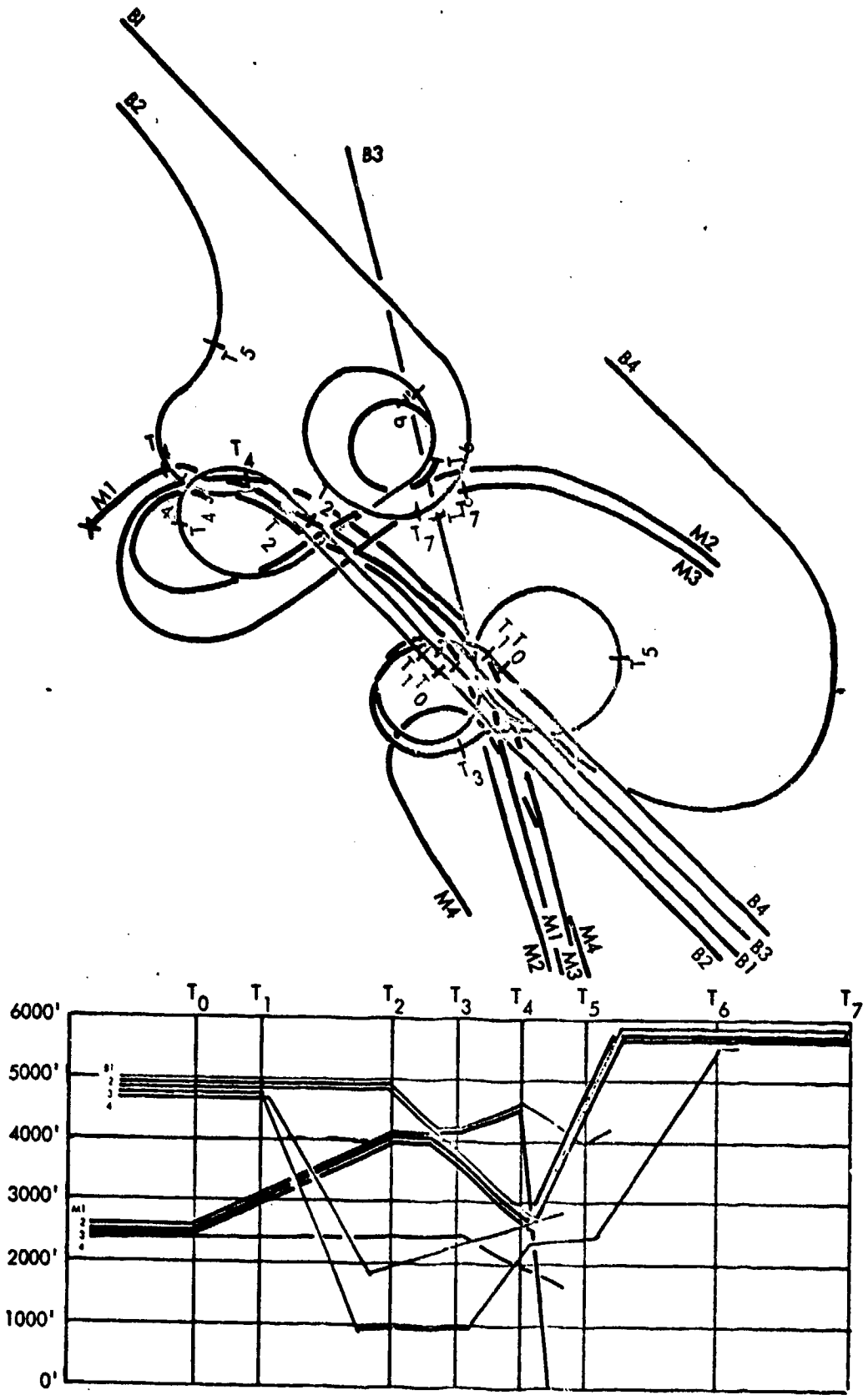
Time Mark	Action Aircraft (BLUE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	4-5,000 ft AGL 480 kt ground speed Straight and level Fuel 13,000 lb	B4 catching up to flight sights 3 MIG-17s at 7 o'clock at 2 to 3,000 feet AGL, at approxi- mately 2-3,000 ft range. (A fourth MIG-17 is trailing by 4 miles)	B1,2,3, flying straight and level	B4: "Migs at 7 o'clock." B3: "Are you sure they are MIGs?" B4: "Damn right."	MIG flight closing at 50-70 knots.	Apparently B1 and B2 did not hear transmission.
T ₁	B3,4 full after- burner	Hard left break and dive to 1,000 ft AGL	B1,2 continue straight and level.	B3: "Break, hard left."	M1 fires at B3. MIG flight con- tinues on to B1 and B2.	Transmissions not heard by other element.
T ₂	B1 and 2 begin left turn	B1 sights MIG flight at 8 o'clock	B3 and 4 in hard left break.	B3: "Glad you called the MIGs." B1: "Break left. go to afterburners, and jettison ordnance."	MIG Flight closing on B1 and 2. M1 damages B2. M2 damages B1.	
T ₃	B4 comes out of break at 2,000 ft	B4 attacks M4	B1 attempts to evade M2. B2 slows down as result of damage. B3 seeks out clouds to lose any MIGs on tail.		M1 overflies B2. M2 chases B1. M3 closing on B2. M4 avoids B4.	
T ₄	B2 loses instru- ments and gun sight as result of dam- age.	B2 fires at M1, sees flashes in left wing root. M2 at 10 o'clock and M3 at 6 o'clock and closing. Evaded by diving into broken clouds.	B1 attempting to evade M2. B3 circling in clouds. B4 attempting to reacquire M4.		M1 hit. Rolls over and does Split-S into clouds at 2,000 ft. M2 and 3 continue after B1. M2 considerably ahead of M3. M4 departs.	B2 credited with confirmed kill.
T ₅		B3 goes to afterburner to meet B2.		B2: "I'm hit. I'll see you at Point Alpha." B3: "Roger, will meet you when I can."		

RED BARON EVENT II-15 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T 6	<p>B3 sights M2 on tail of B1. Fires 100 rounds at high angle off. Cannot turn with M2. Exits to join B2.</p> <p>B1 circles and closes on M2 and M3. Fires at MIGs at long range.</p>				<p>M2 makes very tight left break. M3 joins with M2.</p>	

SECRET

Event II-15



SECRET

SECRET

Event II-16

Aircraft Involved: Four F-105s vs one MIG-17

Result: Sighting only

Vicinity of Encounter: 21°40'N/105°30'E

I. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: Mid June 1966/unknown

BLUE Flight was on a strike mission against Thai Nguyen

II. DATA SOURCES

Project Interview: BLUE 1 - 5 January 1967

III. NARRATIVE DESCRIPTION

BLUE Flight was inbound on a strike mission against Thai Nguyen. They were heading in an easterly direction north of Thud Ridge at an altitude of 1000 ft AGL and at a speed of 500 knots. BLUE 2 sighted a MIG at 10 o'clock at 5 to 6,000 feet AGL, 3 to 4 miles out, and heading in a westerly direction. As the F-105s had been instructed to hit the target first, they did not engage. The MIG did not maneuver either and passed at a range of 3 to 4 miles.

MIG warnings had been broadcast but none were of any consequence to this flight.

SECRET

SECRET

Event II-17

Aircraft Involved: Two F-105s vs two MIG-17s.
Result: No damage
Vicinity of Encounter: 21° 36' N / 105° 20' E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: Late June or early July 1966/1500H

BLUE flight of four F-105s were part of an F-105 strike force bombing a preselected target located at 10°30'N/105°37'E. BLUE 3 and 4 had separated from BLUE 1 and 2 during a maneuver to avoid a SAM.

2. MISSION ROUTE

BLUE flight departed Korat and joined ORANGE ANCHOR tanker for prestrike refueling. BLUE flight proceeded to check point near 22°N/104°37'E and on to target near 21°30'N/105°37'E.

3. AIRCRAFT CONFIGURATION

BLUR 3, 4 Empty MER rack and two empty 450 gal tanks
MIG 1, 2 Silver color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered cumulus north of the Red River. Visibility 10 plus miles with haze on the deck.

BLUE 3 and 4

Altitude: Approximately 1000 feet AGL
Heading: Northwest
Speed: 500 KCAS
Fuel State: 7500 pounds internal

5. INITIAL DETECTION

BLUE 3 sighted two MIG-17s at 3000 to 4000 feet AGL, traveling at a speed of 400 knots, and in a close formation. Range not reported. Bearing: 12 to 1 o'clock. MIGs were identified by their high tail and their silver color.

There was no MIG alert.

6. ACTION INITIATED

BLUE 3 called "Bogies at 12 o'clock high." BLUE 3 and 4 pulled up, went into afterburner, and chased the MIGs. (BLUE 3 noted they were in afterburner for "a long time.")

7. SITUATION DEVELOPMENT

BLUE flight had reached a position 3000 feet to the rear and 1000 feet over the MIG's 7:30 sector. BLUE 3 told BLUE 4 he would take the one on the left. BLUE flight rolled and dove on the MIGs. At about this time the MIGs broke left. BLUE fired 300 rounds at MIG 1 while BLUE 4 fired 200 rounds at MIG 2. Neither BLUE member could hold his sight on his MIG so BLUE flight disengaged by breaking (4 to 5 g's) to the right.

8. ORDNANCE

BLUE 3	300 rounds 20mm	No damage observed.
BLUE 4	200 rounds 20mm	No damage observed.

9. EQUIPMENT PROBLEMS

BLUE 3: Radar would not lock on target. It apparently was locking on the ground.
BLUE 4: Sight did not have a reticle and also could not get a radar lock on target.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 3	1600	600	80	Very little ACM training, had fired at DART 3 or 4 times.

BLUE 4 -----Not interviewed-----

Comments on this Encounter

BLUE 3 felt this was a minor engagement in that the two flights sort of ran into each other and one made a pass at the other and then left. When asked why he disengaged, he stated that he felt he was in a bad position so he broke it off. He knew he had a speed advantage and was capable of getting away. If he had had an airplane that could maneuver

SECRET

SECRET

- Event II-17

with the MIG, he would have stayed and fought (unless such action was contrary to SOP). BLUE 3 is of the opinion that it doesn't make sense to slow down with the MIGs or to get into a dog fight with a MIG-17 because of its maneuverability.

11. DATA SOURCES

Project Interview: BLUE 3, 6 Jan 1967.

12. NARRATIVE DESCRIPTION

T₀, T₁- BLUE flight of four F-105s bombed a target at approximately 21° 32' N/105° 47' E. As they were coming off the target at 2000 feet and a speed of 500 knots CAS, BLUE 4 sighted a SAM and gave the warning: "Missiles, 9 o'clock, break," BLUE 1 and 2 broke right as BLUE 3 and 4 broke left. BLUE 3 saw the SAM and observed it closing at roughly a level angle. It passed at least 500 feet from him and blew up behind the flight. BLUE 1, 2 and BLUE 3, 4 continued as separate elements toward their return check point.

T₂- BLUE 3 and 4 are continuing toward the return check point at 1000 feet AGL, 500 knots CAS when BLUE 3 sighted a pair of airplanes at approximately 1 o'clock. They were recognized as MIG-17s by their high tail and silver color. BLUE 3 radioed, "Bogies at 12 o'clock high." BLUE 3, 4 pulled up and went into afterburner. (They stayed in afterburner "a long time.")

T₃- When they reached a point 1000 feet over and 3000 to the rear of the MIG's 7:30 position BLUE 3 called, "I'm taking the one on the left." They rolled and dove as the MIGs broke to the left. BLUE 3 fired about 300 rounds and BLUE 4 fired about 200 rounds, but neither could keep his target in the gun sight. BLUE 3, 4 disengaged by breaking right.

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RED BARON EVENT II-17 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	2000 ft AGL 500 KCAS climbing	B1,2 break right B3,4 break left and go down within 50 ft AGL		B4: "Missiles, 9 o'clock, break."	SA-2 missile fired at flight.	SAM came in level and passed 500 ft behind and below B3. SAM exploded behind the flight.
T ₁	Completed diving break. 1000 ft AGL 500 KCAS			B3 to 1: "Have lost you. Am going up the (THUD) ridge."		
T ₂	500 KCAS on full military power. 10,000 ft approx. 750C lb of fuel internal	B3 and 4 pulled up and lit afterburners. Rolled and dove to approx. 1000 ft above MIGs.	B1 and 2 flying as independent element.	B3: "Bogeys at 12 o'clock high."	M1 and 2 in level flight, close formation flying slow (400 kt) at 3-4000 ft AGL.	
T ₃		B3 attempted to follow turn, fired 300 rounds (one burst). Could not hold sight on M1 so broke right (4 to 5 g's) and headed for check point. B4 fired 200 rounds at M2 on right. No damage.		B3: "I'm taking left MIG."	MIGs broke hard left when B3 and 4 attacked from MIG's 7:30 position. 1000 ft up and 3000 ft out.	B3 felt he was in a bad position so broke off engagement and utilized speed advantage to get away from MIGs.

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Event II-18

Aircraft Involved: Four F-105Ds vs four MIG-17s

Result: No damage

Vicinity of Encounter: NE rail line

1. PRIMARY MISSION AND TACTICAL SITUATION

Date: 7 July 1966 / unknown

BLUE Flight was on a strike mission against a target on the NE rail line.

11. DATA SOURCES

Letter from BLUE 3.

12. NARRATIVE DESCRIPTION

As BLUE Flight was coming off a target on the NE rail line two MIG-17s jumped the lead element. BLUE 3 accelerated to Mach 1.1 to attain a more favorable position when BLUE 4 called out two more MIGs at seven o'clock. The latter MIGs overshot and BLUE 3 and 4 turned back into them. Contact was lost due to haze and the engagement ended without loss or damage.

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Event II-19

8. ORDNANCE

		<u>No. fired/No. hits</u> (AA Missile)	<u>Remarks</u>
BLUE 1, 2	No ordnance expended		
MIG-1	No cannon ordnance observed	2/0	Missiles fired at high angle off.

9. EQUIPMENT PROBLEMS

BLUE 2

- Jettison circuit malfunction - could not jettison outboard stores.
- Visibility severely limited due to condensation around outside of canopy at high Mach. An inherent characteristic when flying in moist conditions.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>Combat Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>				
Front	-----	Unknown	-----	
Back	2,000	239	45	Four years/1500 hours in B-52.
<u>BLUE 2</u>	-----	Unknown	-----	

Comments on this Encounter

BLUE 2: In the high speed dash to evade RED 2, BLUE 2 had to slow down to decrease the condensation around his canopy and consequently increase his visibility.

BLUE 2 estimated that RED 1 had approximately 560 kt on the first pass and this surprised him because he thought that the MIG-21 was limited to 500 kt at low altitude.

Comments from Overall Experience

BLUE 2 felt that BIG EYE did little more than garble up Guard Channel.

11. DATA SOURCES

Project Interviews:

BLUE 1 Backseat (9 Mar 1967)

BLUE 2 (5 Jan 1967)

Messages, Reports:

Letter from BLUE 1 Backseat (July 1967)

Letter from BLUE 1 (7 July 1967)

7AF 071650Z July, DIO 9957

7AF 0717Q2Z July, DOCCO-O 22483

7AF 071334Z July, DOCCO-O 22483

DIA Intsum, 8 July 1966

USAF Fighter Weapons Center Bulletin CAD-7

12. NARRATIVE DESCRIPTION

BLUE 1 and 2 were on an IRON HAND mission. The mission route extended in the general direction of 155° along the southern side of Thud Ridge, and near the end of Thud Ridge, just above Phuc Yen. BLUE Flight received a strong signal and pulled up while B-1 launched a SHRIKE missile. After missile launch, BLUE Flight started a left turn back to the north. BLUE Flight was at 8-12,000 ft altitude at about 425 KTAS.

BLUE 2 sighted a MIG-21 closing on the flight at high speed with about 100 kt overtake, and alerted B-1. The MIG was at BLUE 2's 7 o'clock, and at BLUE 1's 6 o'clock, 5,000 ft behind BLUE 1. The MIG was passing from BLUE 1's 4 o'clock to his 10 o'clock and climbing so that while the MIG started slightly below BLUE 2, the MIG passed above BLUE 1.

Due to the approach of the MIG, it appeared that the MIG had been directed on a GCI pursuit curve but with excessive cutoff so that the MIG overshot B-1 and 2, and passed out in front.

As the MIG passed, BLUE 2 attempted to jettison external stores and track the MIG for a firing pass. However, BLUE 2 was too busy with the switches and could not simultaneously jettison stores and setup for an attack, before the MIG passed out of range.

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As the MIG passed BLUE Flight, to the left, he started a right turn. This put the MIG at BLUE 1's 10 o'clock position but high above BLUE 1. At this time BLUE 1 also started a right turn to stay with the MIG. The MIG was not observed to fire during this pass.

BLUE 2 had been on the outside of the turn when the flight was turning left, but on BLUE 1's right turn BLUE 2 ended up on the inside. As BLUE 1 started to turn to the right, he observed a MIG at BLUE 2's 6 o'clock at 2,000 ft range and apparently tracking BLUE 2, BLUE 1 called for BLUE 2 to break and BLUE 2 did so, although BLUE 2 never saw this MIG. (BLUE 1 indicates that his instructions were for BLUE 2 to break left, although BLUE 2's actions were described as a break to the right.)

BLUE 2 executed a maximum g descending turn to the deck, simultaneously going to afterburner and jettisoning stores (except for the outboard stores which hung). BLUE 2 descended to treetop level (about 500 ft) and accelerated to Mach 1.1. He went up a valley through the clouds over Thud Ridge. BLUE 2 left the Ridge on the north side, turned to a heading of NW, came out of afterburner and subsequently joined on BLUE 1 with a DF steer, by crossing back over the ridge.

BLUE 1 and the first MIG continued to turn right, with BLUE 1 continuing to descend and tighten the turn. The MIG, in descent, outturned BLUE 1 however, so that after approximately 180° of turn the MIG was at 90° angle off to BLUE 1 and at BLUE 1's 3 o'clock position. The MIG then simultaneously launched two air-to-air missiles from 2,000 ft range at 3 o'clock, 90° angle off. The missiles passed behind BLUE 1, as did the MIG and BLUE 1 unloaded and accelerated (in afterburner) away towards the clouds at low altitude, reaching 650 KTAS by the time minimum altitude was reached. The MIG was not seen again. BLUE 1 was now heading back to the northwest on the south side of Thud Ridge.

After joining with BLUE 2, who crossed back over the Ridge, the flight turned around and headed back down the Ridge to continue the mission. Just before leaving the mission area, BLUE 1 launched his remaining SHRIKE at a SAM site, and BLUE Flight egressed on a similar route as the ingress.

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Event II-20

Aircraft Involved: Four F-105s vs two MIG-17s

Result: No damage

Vicinity of Encounter: 21°30'N/106°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date: 11 July 1966/unknown

BLUE Flight was inbound to JCS Target 18.24 at 21°33'N/106°30'E on a strike mission.

11. DATA SOURCES

Project Interviews: BLUE 1, 5 January 1967.

12. NARRATIVE DESCRIPTION

BLUE Flight was north of Kep flying at 50 ft altitude heading east-southeast. Bomb load was two 3,000 lb bombs per aircraft for use on a bridge target. MIGs were not to be engaged unless they posed a real threat. Two MIG-17s were sighted at 8,000 to 10,000 ft altitude headed south. No MIG warnings were received for this area. The F-105s were camouflaged, making them difficult to see from above over North Vietnamese terrain. The flight members felt that the MIGs did not see them and no maneuvering took place on either side.

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Event II-21

Aircraft Involved: Part (a) one F-105 vs two
MIG-21s
Part (b) one F-105 vs two
MIG-21s

Result: No Damage (One F-105 destroyed
when aircraft ran out of fuel --
pilot recovered).

Vicinity of Encounter: 21°30'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 Jul 1966/0705Z

BLUE flight, a flight of four 105s was on an IRON HAND SAM suppression mission 25 miles northeast of Hanoi. Two separate engagements occurred in the vicinity of Thud Ridge as the flight was egressing the target area.

2. MISSION ROUTE

The route of flight was from Takhl1, direct to the tanker, direct to the northwest end of Thud Ridge, and east to the Kep area (northeast of Hanoi). The egress route was back to Thud Ridge, southwest across the Red River to Takhl1.

3. AIRCRAFT CONFIGURATIONS

F-105F BLUE 1, 3

2 - AGM-45
1000 rd 20mm

F-105D BLUE 2, 4

2 - LAU-3 rocket pods
1000 rd 20mm

All 105s 650-gal bomb bay tanks.

MIG-21

2 - AAM (known)
Aircraft silver with Red Star on wing.
No drop tanks.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken clouds, 5/8 coverage, bases 3 to 4000 ft, tops 6000 ft, 5 miles in haze below clouds, clear and 7 miles plus above clouds. BLUE Flight had just attacked a SAM site and the flight had become separated from each other. All four aircraft were approaching Thud Ridge from the east individually.

	<u>BLUE 2</u>	<u>BLUE 4</u>
<u>Altitude:</u>	6000-7000 ft MSL	6000-8000 ft MSL
<u>Heading:</u>	SSE	250°-270°
<u>Speed:</u>	450 KCAS	350 KCAS
<u>Fuel State:</u>	Bingo	Bingo
<u>Flight Formation:</u>	Single Ship	Single Ship

5. INITIAL DETECTION

MIG warnings had been received; however, they were not called in the same area that BLUE Flight was working.

a. BLUE 2 sighted two unidentified aircraft at 12 to 1 o'clock, 4-5 miles, which he assumed to be members of his flight.

b. BLUE 4 sighted two MIG-21s at 4 o'clock, 2000 ft high, in a pursuit curve attack.

6. ACTION INITIATED

a. BLUE 2 closed in a tail chase attempting to join on the two unidentified aircraft (MIG-21s) assumed to be friendly.

b. BLUE 4 jettisoned tanks and pylons, went afterburner, and dived straight ahead.

7. SITUATION DEVELOPMENT

a. When BLUE 2 had closed to approximately 2 miles one of the then identified MIG-21s made a hard right climbing break and the other MIG continued straight ahead. BLUE 2 jettisoned external stores, went afterburner, and initiated a hard right 180 degree turn. As BLUE 2 started to roll out of this right turn he saw a MIG-21 "canopy to canopy" approximately 30 degrees ahead, 500 ft high and to the right. BLUE 2 then broke right, down, and under, rolling out "on the deck" and egressed the area supersonic at minimum altitude.

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Event II-21

b. After accelerating to 600 KCAS, BLUE 4 broke hard right and continued around to meet one of the MIGs head-on. This MIG broke up and to the right and BLUE 4 reversed into a climbing left barrel roll to keep the MIG in sight. The MIG began descending in his right turn and BLUE 4 continued the roll over the top to a 6 o'clock trail position, 2000 ft behind the MIG. The MIG started down through the clouds on a northerly heading and BLUE 4 broke off in a left climbing turn towards home. After establishing a climb, BLUE 4 banked left to clear his tail and saw the other MIG-21 approximately 2000 ft behind him in a firing position. As BLUE 4 went to afterburner and broke hard left and down, this MIG fired two air-to-air missiles which appeared to track to the left but could not match BLUE 4's turn and passed behind the F-105. The MIG broke up and to the left rolling over the top and reversing direction for a northerly descent toward the clouds. Although BLUE 4 had achieved a trail position on the MIG by pulling up and rolling out over the top in his left turn, fuel considerations required him to disengage and egress from the area.

8. ORDNANCE

F-105 -- None.

MIG-21 -- One MIG-21 fired two AAMs at BLUE 4.

9. EQUIPMENT PROBLEMS

a. BLUE 2 -- Lost modular cooling, IFF, and all flight instruments during his low altitude supersonic egress. The fuel quantity gauge was also suspected to be malfunctioning.

b. BLUE 4 -- Experienced a UHF radio failure during the strike on the SAM site. The bomb bay tank would not feed normally due to a continually popping circuit breaker.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 2	3000	350	51	Considerable tactical fighter experience.
BLUE 4	--- Hours not available ---			Considerable tactical fighter experience.

BLUE 2 felt that if he had been equipped with AAMs he may have had a shot at the MIGs. Also he would have been more psychologically prepared for an air-to-air encounter.

The turning radius of the MIG-21 caught BLUE 2 by surprise.

BLUE 2 believed that the MIG flight could not have detected his approach and received warning from GCI or other MIGs in the area.

The canopy on BLUE 2's aircraft was completely obscured with vapor from 2 to 10 o'clock back on both sides as he was going supersonic on the deck. This prevented him from clearing his 6 o'clock position to determine if the MIG had disengaged.

BLUE 4 commented that he thought the maneuverability of the F-105 at high speed caught the MIGs off guard. BLUE 4 felt that for both instances when he was at the MIG's 6 o'clock position, he was too close to use an AAM.

Both pilots complained about the complicated switch settings required to change from the ground attack mode to the air-to-air attack mode.

11. DATA SOURCES

Project Interview: BLUE 2 (2 Feb 67) and BLUE 4 (8 Mar 1967)

Messages:

OPREP-3 DOCO-0 22712 Jul 66
AF Command Post Message S-12-02, 12 Jul 66
DAI Message 29986 Jul 66
Det 5 Udorn Thailand Message 30666 Jul 66
USAF Fighter Weapons Center Bulletin - 7.

12. NARRATIVE DESCRIPTION

a. BLUE 1 and BLUE 2 initiated a follow-up gun and rocket attack on a visually acquired SAM site following a SHRIKE launch. BLUE 2 became separated from his leader as both aircraft pulled off the target and entered a cloud jinking to avoid heavy AA and automatic weapon fire. BLUE 2 broke out on top at 5-6,000 ft on a westerly heading toward the northern edge of Thud Ridge and requested a DF steer from BLUE 1. After turning 45° to 80° left to the indicated DF heading, BLUE 2 saw two dots of aircraft in the distance on a southerly heading toward Thud Ridge. When the two aircraft made a left turn to parallel Thud Ridge, BLUE 2 became concerned and asked BLUE 1 if he was in a left turn. When BLUE 1 confirmed a left turn, BLUE 2 initiated a cutoff to join and maneuvered into a closing trail position 4 miles behind the two aircraft now flying down Thud Ridge about 3000 ft above the Ridge level. As BLUE 2 closed to a 2 mile trail position,

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approximately 2000 ft below the two aircraft, he realized that they were not F-105s. He then noticed that his reticle was not on and because of the complicated switching arrangements did not believe he was set up to fire his guns. At that instant the aircraft on the right broke sharply up and to the right and the other aircraft continued straight ahead. The Red Star and the MIG-21 top profile was immediately identified. BLUE 2 went afterburner, jettisoned external stores and made a hard right 180 degree turn to parallel Thud Ridge northbound. As BLUE 2 relaxed "g's" and started to roll out he sighted a MIG-21 in an inverted "canopy to canopy" position, approximately 30 degrees ahead, 500 ft high and to the right. BLUE 2 broke right into the MIG pulling the nose down and rolling under to recover at minimum altitude "on the deck" heading northwest "hugging" the northside of Thud Ridge. Although he had lost cooling and flight instruments, BLUE 2 knew he was supersonic due to the vapor that formed around his canopy obscuring all rearward visibility from 2 o'clock and 10 o'clock aft. Since BLUE 2 could not clear his 6 o'clock position to determine if the MIG had disengaged, he crossed Thud Ridge through a valley and continued west in supersonic flight on the deck jinking hard right and left until crossing the Red River. After crossing the Red River with 2000 lb indicated fuel remaining, BLUE 2 came out of afterburner and zoomed to 25,000 ft continuing a full military climb to 35,000 ft. GCI was saturated with three other emergency fuel aircraft and had only intermittent skin paints on BLUE 2 since his IFF was inoperative. BLUE 2 flamed out shortly after gaining visual contact with the tanker and ejected descending through 4000 ft.

b. BLUE 4 became separated from the flight as the flight maneuvered into a broken 5-6000 ft area of cumulus clouds for a follow-up attack after BLUE 1 launched a SHRIKE missile at a SAM site. BLUE 4 then noted that his bomb bay tank had not fed properly and he had a low fuel indication. He pulled off of the target and also discovered his radio was inoperative when he could not contact his flight. BLUE 4 climbed out to the west topping the clouds at 5-6000 ft as he approached Thud Ridge. He discovered he could get intermittent bomb bay tank fuel by constantly resetting a popped circuit breaker. As BLUE 4 was climbing through 6-8000 ft at 350 KCAS, he sighted two MIG-21s approximately 2000 ft high and closing in a pursuit attack curve from 4 o'clock. BLUE 4 jettisoned his tanks and pylons, went afterburner and accelerated to 600 KCAS in a straight dive to 2000 ft. BLUE 4 broke hard right and continued around in his turn to meet one of the MIGs head-on. BLUE 4 did not see the other MIG at this time. When the MIG broke up and to the right, BLUE 4 reversed his turn and entered a climbing left turn to keep the MIG in sight. When the MIG started a descent in his right turn, BLUE 4 continued a left barrel roll over the top and rolled out approximately 2000 ft behind the MIG. As the MIG continued down on a northerly heading toward the clouds, BLUE 4 broke off in a left climbing turn toward home hoping to nurse enough fuel out of the bomb bay tank to reach a safe bail-out area. After establishing a climb and resetting the fuel circuit breaker, BLUE 4 banked left to clear his tail and saw the other MIG-21 approximately 2000 ft behind him in "perfect" firing position. BLUE 4 went afterburner and broke hard left and down just as the MIG launched two air-to-air missiles. Although the missiles appeared to initially start tracking to the left, BLUE 4 believed that the hard break at 600 KCAS down and into the ground clutter defeated missile guidance and caused them to pass behind him without observed detonation. After firing, the MIG broke up and to the left, rolling over the top and reversing direction for a northerly descent toward the clouds. Although BLUE 4 had achieved a trail position on the MIG by pulling up and rolling out over the top in his left turn, fuel considerations required him to disengage and egress from the area. BLUE 4 was able to successfully feed out his bomb bay tank by continually resetting his circuit breaker. He made a no-radio recovery at Udorn with 200 lb of fuel remaining.

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Event II-22

Aircraft Involved: Four F-105s vs one MIG-21

Result: Sighting only

Vicinity of Encounter: 21°28'N/104°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 July 1966/Unknown

11. DATA SOURCES

Messages, Reports: Message 7th AF 142254Z, DIO 0003, July 66, Part IV.

12. NARRATIVE DESCRIPTION

A MIG-21 was sighted by BLUE Flight (four F-105s) at 21°28'N/104°50'E near the Black River. The MIG was low beneath clouds on a 120° heading. When BLUE Flight turned toward the MIG, the MIG turned to 50° and then to a 310° heading. The MIG was lost in clouds before BLUE Flight could close. No markings were observed due to distance.

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Aircraft Involved: Eight F-105s vs four MIG-17s

Result: One F-105 lost; one F-105 damaged;
three MIG-17s damaged

Vicinity of Encounter: 21°13'N/105°48'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 July 1966/1611H

Four flights of four F-105 aircraft on ROLLING THUNDER mission to strike JCS-51, a POL storage 7 n mi north of Hanoi. The flights were one to three minutes apart and following identical route. The first four F-105s (BLUE Flight) and the second flight of four F-105s (GREEN Flight) were the only flights to engage hostile aircraft; however the third flight had visual sighting of the encounter. Two IRON HAND flights (4 F-105s) and their supporting MIGCAP flights (F-4Cs) were within 25 n mi of the target, one flight north and the other northwest of the target area. Also ABN/GCI EC-121 aircraft were supporting the strike mission along with B-66 ECM aircraft. For the location of these aircraft, see Figure 1.

2. MISSION ROUTE

Sixteen F-105s including BLUE and GREEN Flights departed Takhli Air Base for pre-strike refueling on Orange Anchor track extended N to 20° direct to 22°N/104°32'E direct 21°45'N/105°13'E direct target 21°10'08"N/105°59'21"E. After crossing Red River and proceeding on a 135° heading at 4,000 ft, four missiles were observed converging on BLUE Flight. Missiles were evaded by changing altitude and heading. Flight continued through heavy small arms and 85mm fire to vicinity 21°13'N/105°48'E where aerial encounter commenced. BLUE 3 and 4 became separated from BLUE 1 and 2 during missile evasive action. One to three SAMs were also fired at GREEN Flight as they passed 21°49'N/105°13'E. Post-strike refueling was on Red Anchor.

3. AIRCRAFT CONFIGURATIONSF-105 BLUE 1, 4

5 - 1000 lb GP bombs
2 - 450 gal tanks

BLUE 2

4 - 1000 lb GP bombs
1 - camera pod
2 - 450 gal tanks

BLUE 3

4 - CBU-24
2 - AIM-9B
2 - 450 gal tanks

Lead aircraft IFF on, TACAN plus doppler. All aircraft camouflage paint.

F-105 GREEN 1, 3, 4

2 - 3000 lb bombs
1 - 650 gal tank centerline

GREEN 2

4 - CBU-24
2 - AIM-9B

MIG-17 1, 2, 3, 4

Silver color with Red stars and had afterburners.
No external ordnance or tanks.

MIG-17 5 (This aircraft not engaged, visual sighting only)

Silver color
Underwing drop tanks

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTERWeather: Clear, visibility unlimited

	<u>BLUE Flight</u>	<u>GREEN Flight</u>
<u>Altitude:</u>	4000 ft AGL	4500 ft
<u>Heading:</u>	135°	135°
<u>Speed:</u>	480 kt	480 kt
<u>Fuel State:</u>	Unknown	Unknown

Flight Formation

BLUE Flight not clearly determined. They probably started in normal fluid-four

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Event II-23

formation, aircraft lined abreast, 500 to 1500 ft out for wingmen and 1500-3000 ft between lead and No. 3. During missile evasion the elements became separated, the exact distance of separation is not known.

GREEN Flight formation was fluid four, aircraft abreast, wingmen out 500-1500 ft.

5. INITIAL DETECTION

Missile and MIG warnings were issued on Guard Channel according to airborne GCI aircraft's log. However, BLUE and GREEN Flights did not receive warnings according to their reports. BLUE Flight was approaching Initial Point (IP) and had been jinking to avoid ground fire but generally heading 135° at 4000 ft with BLUE 3 and 4 a short distance behind BLUE 1 and 2. GREEN Flight one to three minutes behind BLUE Flight. Three MIG-17s approached BLUE 1 and 2 from 6 o'clock position, slightly higher than level with guns firing. BLUE 2 was the first to observe MIGs and called them over the radio. BLUE lead confirmed. Time of initial engagement 1611H.

6. ACTION INITIATED

BLUE 2 called out MIGs. BLUE one transmitted "Roger MIGs - clean it up." BLUE 1 and 2 jettisoned all external stores and broke into the firing MIGs. This is estimated to be a right break. The relative MIG positions in their attack formation is not known. BLUE 3 sighted MIGs attacking BLUE 1 and 2 and initiated a gun pass.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 broke into the three MIGs who were at 6 o'clock firing. BLUE 3 closed on MIGs, got a 90° deflection shot with gun at MIG 2 and observed pieces fly from the left wing and a puff of smoke. MIG 2 broke left, leaving encounter, leveled out and started a slight climb, heading toward Phuc Yen airfield. BLUE 3 and 4 continued after MIG 2 while BLUE 1 and 2 attempted to gain advantage of MIG 1 and 3. BLUE 3 set switches for missiles and launched 1 AIM-9B at MIG 2 4,000 ft in trail at 3-4000 ft AGL. Missile observed to head for ground, no apparent guidance. As MIG 2 started turn BLUE 3 launched second AIM-9B which did not hit target. Suspected reason for miss was missile g limits exceeded in turn. BLUE 3 continued attack with gun, observed no hits. MIG 2 broke sharply for ground causing BLUE 3 to overshoot. BLUE 3 and 4 then continued to target.

Shortly after the encounter started, GREEN 1 asked BLUE 1 if he needed any help. BLUE 1 replied "No, hit the target." As GREEN Flight passed the encounter GREEN 2 witnessed BLUE 1 and 2 with two MIG-17s "going around in circles in a lufberry at 3 to 4000 ft." BLUE 3 and 4 were not sighted by GREEN Flight. GREEN Flight continued on to target.

(From this point, the statements and reports are conflicting and confusing. All members of BLUE Flight are "Missing in Action" or "captured" and were not available for interview. The following is one logical sequence of events but the timing is not concretely supported by all reports and interviews.)

BLUE 1 and 2's ensuing encounter with MIG 1 and 3 lasted for 13 to 15 minutes. Maneuvers in "dogfight" reached from near the surface to 7000 ft and from point of initial encounter southeast to Phuc Yen airfield, with the majority of encounter in vicinity of Phuc Yen. MIGs made approximately 7 passes on BLUE 1 and 2. Maneuvers included "lufberry," "hard turns" with maximum power and "scissors." During this time period, GREEN Flight hit fragged target, probably ahead of BLUE 3 and 4. During GREEN Flight's delivery of ordnance, BLUE 1 requested assistance from both strike and CAP flights. GREEN 3 and 4 came off delivery run and proceeded NW towards foothills north of Phuc Yen where MIG 1 and 3 were spotted, engaged in tight turns at 500-1000 ft over the terrain at the 6 o'clock position of BLUE 1 and 2. All aircraft were at low airspeed with BLUE 1 and 2 losing out. GREEN 3 and 4 rolled in from above the MIGs at high airspeed, fired gun at MIG with no results, overshoot, and yo-yo'd up to kill off airspeed and attempted to keep engagement in sight. GREEN 3 and 4 lost sight of encounter in turn reversal at top of yo-yo and proceeded south toward Phuc Yen. At Green 1 and 2's completion of ordnance delivery, GREEN 2 was hit with ground fire. Since G-2's ordnance was for flack suppression, and not required, it was dropped on trains in target areas. This caused separation of GREEN 1 and 2 and required a period of time for GREEN 1 and 2 to get rejoined and determine extent of damage to GREEN 2.

While GREEN 1 and 2 were rejoining, BLUE 3 and 4 delivered their ordnance on fragged target and turned N toward Phuc Yen to answer BLUE 1's call for help. After GREEN 3 and 4's pass at MIGs and while BLUE 3 and 4 proceeded northward, BLUE 2 in steep left turn was hit (believed but not confirmed to be MIG fire). BLUE 2 broke right and stated he had been hit. MIG 3 overshoot and rolled back in behind BLUE 2 allowing BLUE 1 to get behind MIG 3 and damage horizontal stabilizer of MIG 3 with 20mm. MIG 3 then broke off BLUE 2 and engaged BLUE 1 with MIG 1. BLUE 2 stated he was heading out 240° and shortly thereafter said he "had to get out" and ejected at approximately 21°22'N/105°44'E. A beeper was heard from a parachute soon after BLUE 2's ejection. BLUE 1 was then hit by MIG fire and transmitted that he was over Phuc Yen with MIG in tail and had been hit.

GREEN 1 and 2, now rejoined, were directed by BLUE 1 to his position and GREEN 1 and 2, observing MIGs on BLUE 1, attacked from MIGs 6 o'clock with gun. GREEN 1 started

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firing at 3000 ft range and fired down to 50 ft damaging MIG 1's right wing. MIG 1 broke left causing GREEN 1 to overshoot. GREEN 2 with missiles attempted to track and turn with MIG 1 but was unable to track MIG using 6 gs. MIG 1 departed engagement and enabled BLUE 1 to disengage by use of afterburner descent, outrunning MIG 3.

As BLUE 3 and 4 approached Phuc Yen to aid BLUE 1, MIG 4 was encountered heading eastward. BLUE 3 and 4 rolled in behind MIG 4 with BLUE 3 firing as the encounter crossed Phuc Yen airfield from East to West at 500-1000 ft. BLUE 3 overshoot and MIG 4 broke off and headed South. No hits observed. This encounter was witnessed by GREEN 3 and 4 as they crossed Phuc Yen after their pass at MIG 1 and 3 behind BLUE 1 and 2. The North Viets were firing 37mm at MIG-4 and BLUE 3 as they crossed the airfield. BLUE 3 and 4 made another sweep around Phuc Yen observing a fifth MIG with underwing drop tanks. This MIG not engaged as BLUE 3 took a hit from ground fire and was below bingo fuel. GREEN 3 and 4, encountering heavy flak, egressed area also.

8. ORDNANCE

	(No. fired/No. hits)		
	<u>AIM-9B</u>	<u>20mm</u>	<u>Remarks</u>
BLUE 1	0/0	1/1	Hit MIG 3 with one burst 20mm.
BLUE 2	0/0	unk/unk	Pilot did not return from mission, but not suspected that he fired.
BLUE 3	2/0	3/1	Fired two AIM-9B at MIG 2. First missile did not guide. Second missile did not hit. Suspected exceeding "g" limits. Hit MIG 2 with 20mm. Fired second 20mm burst at MIG 2. No hits observed. Fired 20mm at MIG 4 with no observed hits.
GREEN 1		1/1	Hit MIG 1 in right wing with 20mm.
GREEN 3		1/1	Fired 20mm but observed no hits.
		<u>23/37mm</u>	
MIG 1		yes/yes	Hit BLUE 1 with cannon fire.
MIG 2		yes/no	Fired at BLUE 1 and 2, no hits.
MIG 3		yes/yes	Shot down BLUE 2.

9. EQUIPMENT PROBLEMS

Malfunctions

BLUE 3 First SIDEWINDER (AIM-9B) headed for ground, no apparent guidance.

GREEN 1 Gunsight grossly out of calibration.

Shortcomings

1. Communications difficulties due to range limitations, altitude (possible terrain masking) and single frequency usage by all strike and support aircraft. Neither MIGCAP aircraft nor strike aircraft heard MIG warnings issued at 1428, 1555, 1604L on guard frequency (243.0) by ABN/GCI aircraft. All aircraft indicated radio equipment fully operational.

BLUE 1 called MIGCAP for help on strike frequency but MIGCAP did not hear BLUE 1's call and remained unaware of engagement. MIGCAP was 18 mi from engagement at altitudes varying from 3000 ft to 14,000 ft supporting IRON HAND Flight. Altitude of BLUE Flight during engagement varied from 500 ft to 7000 ft. MIGCAP is expected to react immediately to a call from strike aircraft and MIGCAP is on the same frequency as strike aircraft. Frequency extremely crowded during engagement.

2. Inferior maneuverability of the F-105 against MIGs is, again, well established by the MIGs being able to make seven passes against BLUE 1 and 2 before making a mistake. Also GREEN 2 was unable to get sight on maneuvering MIG using 6 gs.

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10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	
GREEN 2	500	300	45	Air-to-air experience F-105 checkout Nellis. One dart mission. One AIM-9B firing.
GREEN 3	Experience unknown			

Comments on this Encounter

Radio communications were all but impossible due to the entire strike force, ECM, WILD WEASEL and Navy GCI aircraft being on the same UHF frequency. When engaging enemy aircraft and evading SAM activity the frequency cannot be used effectively (GREEN 3).

There were indications of ground control of the MIGs. The entire operation was unusual. First, they encountered SAMs, then heavy flak, then the MIGs and it was GREEN 2's impression that this was a coordinated effort against the strike force (GREEN 2).

MIG pilots weren't looking around enough (GREEN 2).

GREEN 1 should have got MIG, almost collided with him.
Gun shooting to right (GREEN 2).

Reason for GREEN 1 making gun attack rather than allowing GREEN 2, who was configured for air-to-air (2 AIM-9B), to make attack unknown. "GREEN 1 did what was natural," i.e., GREEN 1 saw MIG and went after him. (GREEN 2).

Comment from Overall Experience

Too many switches to change to set up missiles and gun. (GREEN 2).

MIGCAP missions were not useful to strike aircraft. They were usually too far away to be of any help. (GREEN 2)

The importance of having the M-61 cannon for MIG encounters at low level hasseling cannot be overemphasized. (GREEN 3)

11. DATA SOURCES

Project Interviews: GREEN 2 5 Jan 1967

Messages:

7AF OPREP 3, 112115Z Jul 66 DOCO-0 23174
355TFW Aircraft Mishap Report, 0 191157Z; DOC P-66-S0625 Jul 66
7AF Fastel; 221007Z; DOCO Fastel 197 Jul 66
7AF Flap Item Report, Z230248Z; DOCO 23345 Jul 66

Other:

Letter, GREEN 3
Letter, Member of third flight of four F-105's against target JCS-51
USAF Fighter Weapons Center; Bulletin - 7

12. NARRATIVE DESCRIPTION

BLUE and GREEN Flights (4 F-105s ea) were the first and second flights of four flights of F-105s fragg'd to strike JCS target #51 (POL storage 7-8 n mi N Hanoi) on 19 July 1966 at 1-3 minute intervals. IRON HAND, MIGCAP, GCI and ECM aircraft were in target area to support strike. Both BLUE and GREEN flights had SAMs fired at them passing the northwestern end of Thud Ridge. SAMs were evaded by both flights but separated the elements of BLUE Flight (lead strike flight). Missile and MIG warnings had been issued by airborne GCI but warnings were not received by Strike or MIGCAP aircraft. At the SE end of Thud Ridge approaching IP, three MIG-17s attacked BLUE 1 and 2 from 6 o'clock slightly high. BLUE 1 and 2 jettisoned ordnance and broke into MIGs allowing BLUE 3 who was a short distance behind to get a 90° deflection shot hitting MIG 2 who then broke left, leaving engagement, and started a slight climb heading toward Phuc Yen airfield. BLUE 3 and 4 pursued MIG 2 while BLUE 1 and 2 were engaged in a 15 minute "dogfight" with MIG 1 and 3. "Dogfight" consisted of "lufberry," "scissors" and hard turns with afterburner and ranged in altitude from surface to 7,000 ft AGL. GREEN Flight, hearing and observing BLUE 1 and 2's encounter, offered assistance but were advised to strike target by BLUE Lead which they did. BLUE 3 launched two AIM-9Bs at MIG 2, the first not guiding and the second missed possibly due to exceeding g limits. BLUE 3 made follow-up gun pass at MIG 2 observing no hits and overshooting as MIG 2 broke sharply towards ground. BLUE 3 and 4 then proceeded to target and expended ordnance.

MIG 1 and 3 accomplished seven passes at BLUE 2 while GREEN Flight and BLUE 3 and 4 expended ordnance. BLUE 1 decided he needed help and called for it. MIGCAP did not receive call, however GREEN Flight responded. GREEN 3 and 4 came off target and proceeded NW toward Phuc Yen AF where they observed BLUE 1 and 2 losing engagement. GREEN 3 and 4 made gun firing pass from above the MIGs, observed no hits, overshoot with high airspeed,

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yo-yo'd up to reposition; lost sight of encounter and proceeded south over Phuc Yen where they observed BLUE 3 and 4 in pursuit of MIG 4 heading east directly over Phuc Yen at low altitude receiving 37mm flak. BLUE 3 fired gun at MIG 4, observed no hits and overshoot as MIG 4 broke south toward Hanoi disengaging.

At this point BLUE 2, in steep left turn, was hit (probably by MIG fire but not confirmed). BLUE 2 broke right causing MIG 3 to overshoot and roll back in allowing BLUE 1 to position behind MIG and hit horizontal stabilizer of MIG 3 with 20mm. MIG 3 broke off BLUE 2 and got behind BLUE 1 along with MIG 1. BLUE 2 called he was heading out 240° and soon stated he had to get out. A parachute beeper was heard shortly thereafter. BLUE 1 was then hit by MIG 1 and called "over Phuc Yen with MIG in trail and have been hit."

GREEN 1 and 2, after some delay and difficulty rejoining off target, were vectored to BLUE 1's position by BLUE 1. GREEN 1, observing BLUE 1's predicament, elected to make gun pass rather than utilize his wingman's (GREEN 2) SIDEWINDERS. GREEN 1 opened fire at MIG 1 at 3000 ft and fired down to 50' nearly colliding with MIG 1 but getting hits in right wing of MIG and causing MIG 1 to break off BLUE 1. This enabled BLUE 1 to disengage by nosing down, lighting A/B and outrunning MIG 3. GREEN 2, out of position when GREEN 1 initiated pass, attempted to position behind MIG 1 for AIM-9B shot but was unable to get into missile envelope due to high g (+6 gs). GREEN 1 and 2 overshoot their passes, lost sight of MIGs, rejoined, and strafed trucks in area of encounter. Reason fuel and ammunition not used for RESCAP unknown.

BLUE 3 and 4 meanwhile made another sweep around Phuc Yen airfield and observed a fifth MIG, configured with drop tanks, in turn over east end of runways. This MIG not engaged as BLUE 3 received hit from flak and egressed area. GREEN 3 and 4 also encountered heavy flak and egressed area. GREEN 3 and 4 also encountering heavy flak over Phuc Yen egressed area westward.

BLUE 1, 3 and 4 and all of GREEN Flight recovered safely. BLUE 2 was not recovered.

The third flight struck the target and sighted the encounter but took no active part. The fourth flight also hit the target.

The MIG warnings issued by the EC-121 Ethan Bravo were broadcast on guard frequency (243.0) at 1428H, 1555H, and 1604H. The MIGCAP aircraft did not hear these MIG calls although their radio equipment was operational. Their flight altitudes varied from 3,000 to 14,000 feet so the CAP flights could have been too low to receive UHF transmission. This could also explain the failure of BLUE Flight to receive the MIG warnings.

The MIGCAP was called on strike frequency (277.2) by BLUE 1 but neither flight heard it, although they were close enough earlier to observe the SAM firings. BLUE 2 is listed as missing.

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RED BARON EVENT II-23 SUMMARY

Time Mark	Action Aircraft (JE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T0	BLUE Flight 480 kt, 4,000 ft 1350 heading- jinking to avoid flak BLUE 3 & 4 short distance behind B1 & 2	B2 calls MIGs. B1 confirms. B1 & 2 jettison stores and break into MIGs	GREEN Flight 1-3 m'n. behind BLUE Flight. GREEN Flight 500 kt, 4,500 ft goes to full mil power	B2 calls MIGs. B1 "Roger - MIGs - Clean it up"	MIG 1, 2 & 3 6 o'clock slightly high, firing on B1 & 2	IRON HAND, MIG- CAP, ECM B-66. ABN/GCI on station supporting strike MIG warnings trans- mitted but not received by Strike or MIGCAP aircraft B3 & 4 separated from B1 & 2 due to evading SAMs fired at them earlier
T1		B3 got 90° deflection shot with gun hitting M2 in left wing	GREEN Flight closing on BLUE Flight		M2 breaks left when hit, leaving encounter and starts slight climb toward Phuc Ven. M1 & 3 continue 6 o'clock B1 & 2	Pieces fly from M2 left wing with a puff of smoke. MIGs silver in color with Red Star markings and equipped with afterburners. MIGs had no ex- ternal stores or ordnance.
T2	B3 & 4 3-4,000 ft B1 & 2 Altitude and A/S varying	B3 & 4 behind M2 4,000 ft B3 launches AIM-9B at M2 - No guidance B1, 2 engaged in lufberry and scissors with M1, 3	GREEN Flight, 2 passing B1 & 2 Engagement, con- tinues to target. G2 sees B1 & 2 and MIGs B2 sees B1 & 2 and MIGs	GREEN 1 asks BLUE 1 if he needs help. B1 "Negative - Hit the target"	M1, 3 overshoot and reposition M2 wings level, slight climb	AIM-9B headed for ground after launch
T3		B3 launched second AIM-9B at M2 turning left. No hit B1, 2 in lufberry with M1, 3	GREEN Flight accelerating for pop-up		M2 starts left turn causing missile to miss	Second AIM-9B miss possibly due to exceeding g limits

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RED BARON EVENT II-23 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T4	B1 & 2 altitude from surface to 7,000 ft in dogfight	B3 made follow-up gun pass at M2. No hits observed - overshoot. B3 & 4 head for target. B1 & 2 continued engagement with M1, 3.	GREEN Flight - pop up and deliver ordnance. Maximum Alt. 12 - 15,000 ft above ground		M2 broke sharply for ground causing B3 to overshoot. M2 heads south disengaging	Target 7-8 n mi south Phuc Yen Airfield. G2 went missiles air on weapon select; search and attack on radar for sight, selected onboard stations. (Earlier checks had obtained good grounds on the missiles)
T5	G3, 4 climbing	G3, 4 off target, head for Phuc Yen to assist B1, 2. B1 & 2 losing engagement	G2 delivers CDU on trains in target area. G1 & 2 separated. B3 & 4 deliver ordnance on target	B1 calls for assistance. MIG CAP does not hear B1 request for help.	M1 & 3 make a total of seven passes at B1 & 3 during 15 min engagement	Maneuvers in dog fight "lufberry" "scissors" and hard turns
T6		G3 & 4 make gun pass at M1 & 3 behind B1 & 2. G3 & 4 overshoot and yo-yo up losing sight of engagement and head south. No hits on M1 & 3 observed	B3 & 4 off target, head for Phuc Yen. G1 & 2 trying to rejoin	G1 and G2 talk while trying to join up	M1 & 3 maintaining advantage behind B1 & 2	
T7		B2 hit (probably by M3) breaks right hard causing M3 to overshoot. B1 gets behind M3 and hits M3 horizontal stabilizer with 20mm	G1 & 2 rejoined head toward Phuc Yen. B3 & 4 spot M4 heading east approaching Phuc Yen	B2 calls he has been hit "Am heading out 2400". B1 & G1 talking to establish contact.	M3 overshoots B2 and rolls back in on B2 allowing B1 to get in position at 6 o'clock M3	

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RED BARN EVENT II-23 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T8	B3 & 4 500 - 1,000 ft	B3 & 4 behind M4 firing heading east - no hits observed - overshoot B1 is hit by M1's fire	G3 & 4 observe B3 & 4 in trail with M4 over Phuc Yen	B2 calls he has to get out B1 calls over Phuc Yen, MIGs in trail and have been hit	M4 breaks and heads south M3 breaks off B2 and gets behind B1 M1 hits B1 with cannon	
T9	G1 & 2 15,000 ft 350-400 kt in left hand turn	B1 trying to evade M1 & 3 G1 makes gun pass at M1 G2 trying to get on G1 wing	G1 & 2 approaching engagement Fuel state 6000 lb B3 & 4 make sweep of Phuc Yen after breaking off M4 G3 & 4 encounter heavy flak over Phuc Yen and egress area B2 ejects	B1 vectors G1 & 2 to his position G2 sights M1 & 3 Calls G1 and continues calling MIG positions G1 does not answer	M1 & 3 in one mile trail with B1; MIGs in left turn at 3000 ft. MIGs at cruise speed	G2 loses his position in the turn, has to use A/B to catch up since gets separated by 2 mi G2 configured with AIM-9Bs set up switches for missiles but G1 kept lead, electing a gun pass rather than using G2 missiles G3 or G4 has fuel malfunction Parachute beeper heard after B2 ejection
T10	B3 & 4 fuel below Bingo	G1 hits M1 in rt wing and overshoots G2 tries to turn with M1 for missile shot but cannot get in missile envelope (+6g) B1 lowers nose and lights afterburner	B3 hit by ground fire B3 & 4 start to egress		M1 breaks hard left causing G1 to overshoot M1 disengages and departs M3 trying to catch B1	G1 opens fire with gun at 3,000 ft and ceased fire at approx 50 ft almost colliding with M1. G1 gun sight grossly out of calibration. Gunshooting to the right.

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RED BARON EVENT II-23 SUMMARY

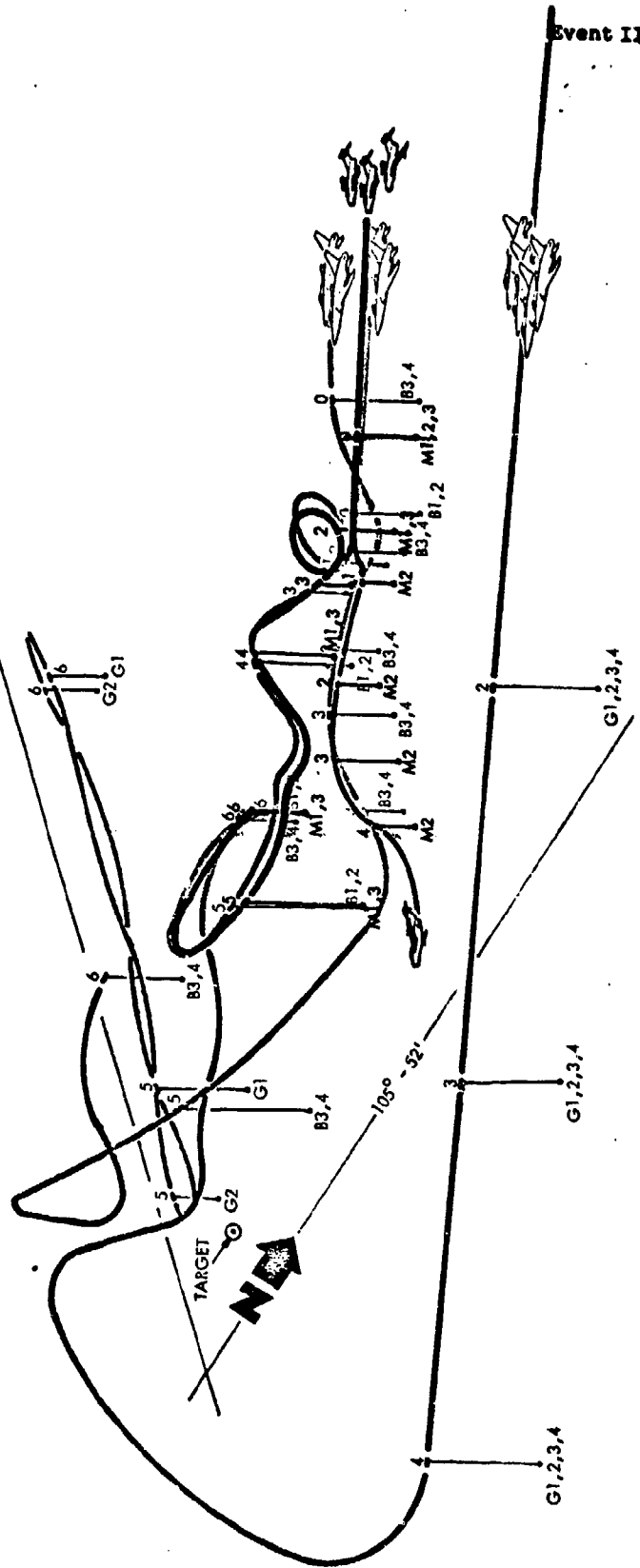
Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T11		B1 outruns M3 disengaging and egresses area	B3 & 4 spot M5 in turn over east end of runway of Phuc Yen but do not attempt to engage G1 & 2 lose sight of Migs so rejoin and strafe trucks in area of engagement prior to egressing		M3 cannot catch B1 M5 over east end Phuc Yen does not try to engage	M5 had under wing drop tanks No attempt at RESCAP indicated Reason for no RESCAP unknown

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Event II-23

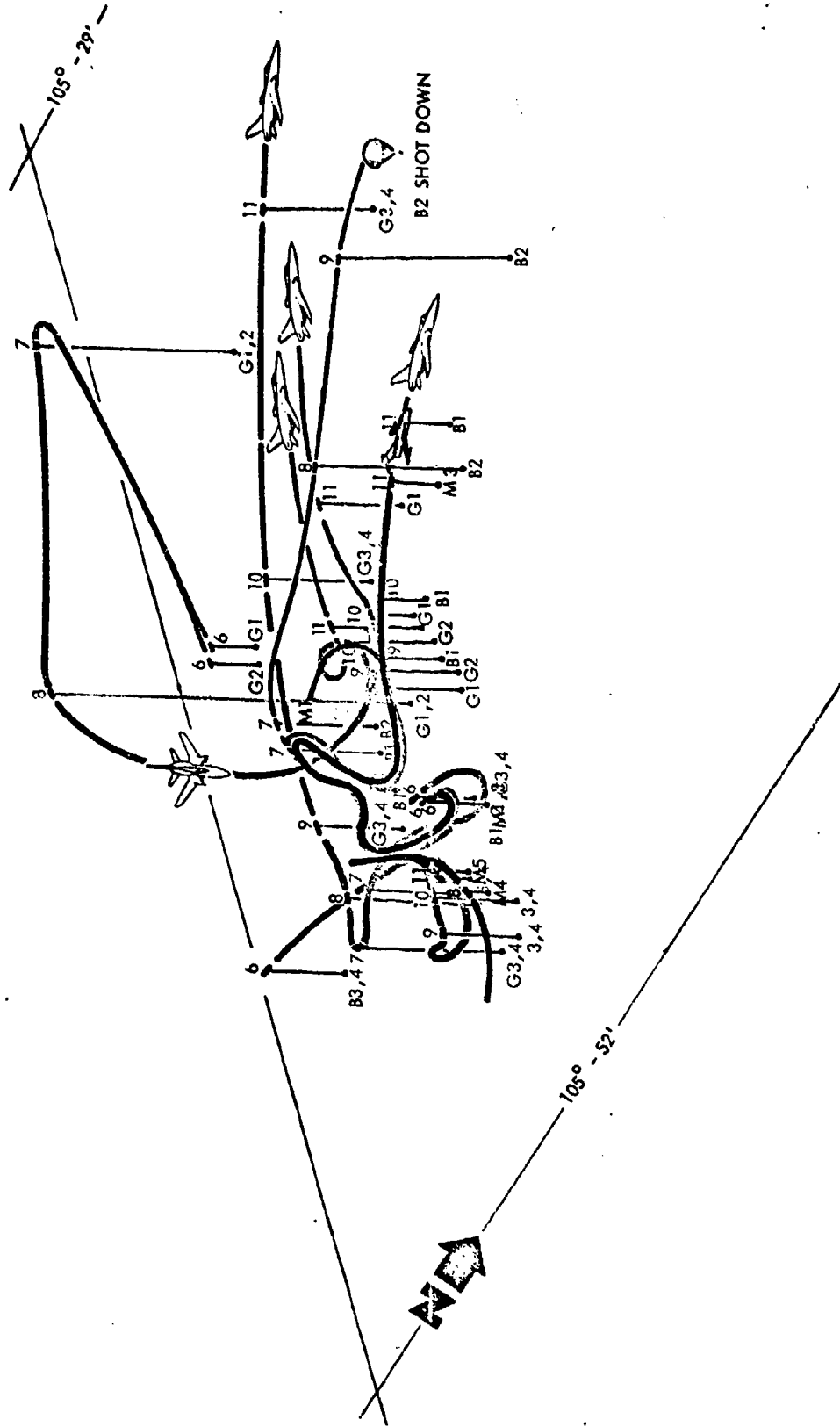
103° - 29'



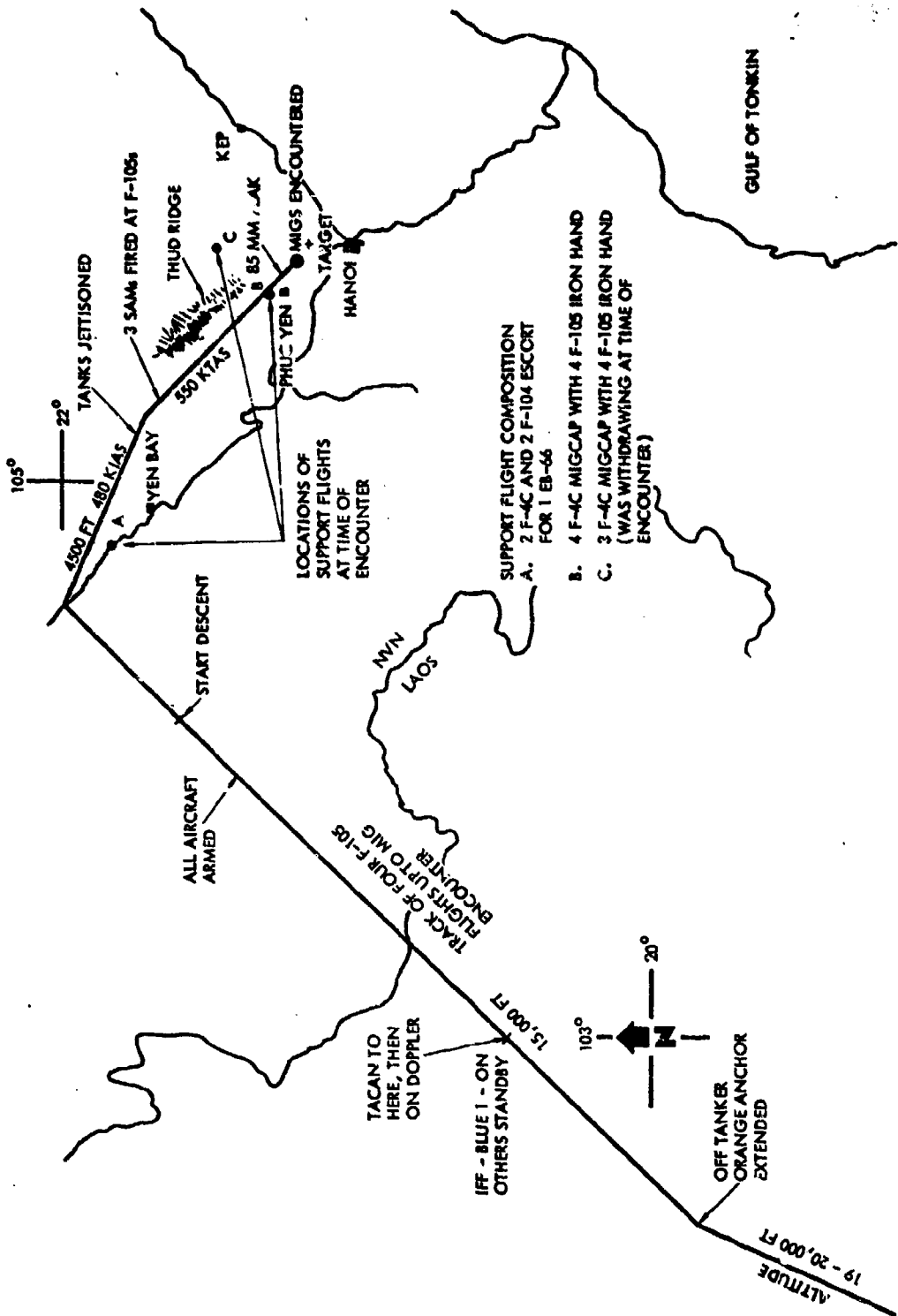
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Event II-23



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Event II-24

Aircraft Involved: Four F-105s vs two MIG-17s

Result: No damage

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: July 66/unknown

Four F-105s (BLUE Flight) on an IRON HAND mission in support of strike aircraft in the Phu Tho/Viet Tri area.

2. MISSION ROUTE

Unknown

3. AIRCRAFT CONFIGURATIONS

F-105 B1, 2, 3, 4

1 - Guns (Full - 1,029 rounds) 20mm

MIG-17 MIG 1, 2

Guns

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 3,500 ft broken

B1, 2, 3, 4

Altitude: 4-5,000 feet

Heading: 240°

Speed: 540 kt

Fuel State: Unknown

Flight Formation: Unknown

5. INITIAL DETECTION

BLUE Flight was heading 240° at 540 kt between 4 to 5,000 ft when B4 saw two MIG-17s at the flight's 6 o'clock position and firing.

6. ACTION INITIATED

BLUE Flight broke hard left and selected afterburner.

7. SITUATION DEVELOPMENT

None, no encounter.

8. ORDNANCE

	<u>Guns</u>	<u>Remarks</u>
<u>BLUE 1, 2, 3, 4</u>	No rounds fired	
<u>MIG 1, 2</u>	Unknown rounds fired	MIGs did not hit any aircraft

9. EQUIPMENT PROBLEMS

Unknown

10. AIRCREW COMMENTS

Experience

Unknown

Comments on this Encounter

None

Comments from Overall Experience

None

11. DATA SOURCES

Project Interviews: B3

12. NARRATIVE DESCRIPTION

BLUE Flight was outbound after making a run on a SAM site at 4-5,000 ft, heading 240°, 540 kt when B4 saw two MIG-17s at 6 o'clock and firing. B4 called for a left break. BLUE Flight engaged afterburner and went into a hard left turn and descended under the broken layer of clouds to approximately 1,000 ft. MIGs disengaged in the turn and headed back for Hanoi. BLUE Flight then continued on with the mission and returned safely to home station.

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Event II-25

Aircraft Involved: Four F-105s vs two MIG-21s

Results: No damage

Vicinity of Encounter: 21°32'N/106°13'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 July 66/0842H

BLUE Flight (four F-105s) was cruising at 7,000 ft enroute to a Package VI-A target.

11. DATA SOURCES

35 DOI-842 OPREP-3 20 July 66
7AF 202359Z July 66 DIO 30041
7AF 201629A July 66 DOCC-023239
7AF 201006Z July 66 DOCC-023214

12. NARRATIVE DESCRIPTION

BLUE Flight (from Korat) while on a mission in Package VI-A about 10 n mi northwest of Kep encountered two MIG-21s. BLUE Flight was at 7,000 ft when two MIG-21s made a descending pass on BLUE 3 and 4 and closed to 2,000 to 3,000 ft. A defensive left turn by BLUE 3 caused the one MIG-21 to overshoot and the MIG climbed to 10,000 ft and disappeared from BLUE 1's sight. The second MIG-21 began his pass but didn't complete it and he also disappeared from BLUE 1 and 3. There were no further MIG encounters on this mission. At 0844H BLUE 1 and 3 dropped ordnance and recovered at Danang due to refueling problems while BLUE 2 and 4 recovered at Korat.

Event II-26

Aircraft Involved: One F-105 vs five MIG-17s

Result: Sighting

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: July 66/1300H

BLUE 1 (one F-105) was on a strike mission.

11. DATA SOURCES

Letter from BLUE 1.

12. NARRATIVE DESCRIPTION

As BLUE 1 rolled in for a dive bomb run, five MIG-17s were spotted at his 1:30 o'clock high position. BLUE 1 continued with his dive bomb run and did not see the MIGs again.

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Event II-27

Aircraft Involved: Four F-105s vs two "bogeys"

Result: No damage

Vicinity of Encounter: 21°30'N/105°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 July 66/0850H

BLUE Flight (four F-105s) from Takhli enroute to target in Package VI-A

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather unknown

	<u>BLUE Flight</u>
Altitude:	4,000 ft
Heading:	130
Speed:	540 KTAS
Fuel State:	Unknown
Flight Formation:	Unknown

5. INITIAL DETECTION

BLUE Flight indistinctly spotted bogeys at 3 o'clock slightly high, heading 270°, 3 miles away.

6. ACTION INITIATED

The two bogeys turned to approximately 060° and launched two air-to-air missiles. BLUE Flight turned into the attack and the missiles approached from 2 o'clock to 4 o'clock and passed behind BLUE Flight without detonating. The missiles were unable to match BLUE Flight's turn. The launching aircraft remained about 3 miles away, then broke off the attack and were lost visually.

7. SITUATION DEVELOPMENT

BLUE Flight turned on course and proceeded to their target.

8. ORDNANCE

	<u>No. Fired/No. Hits</u>	<u>Remarks</u>
	AA Missiles	
RED Flight	2/0	Passed behind BLUE Flight

11. DATA SOURCES

7AF 200855Z July 66 DOCCO-O 23209
7AF 201145Z July 66 DOCCO-O 23209
USAF Fighter Weapons Center Bulletin 7

12. NARRATIVE DESCRIPTION

BLUE Flight enroute to target at 4,000 ft, 540 kt TAS attacked by two MIGs (type unknown) from a distance of approximately three miles at 3 o'clock, slightly high. The MIGs fired two air-to-air missiles from 3 o'clock. The missiles passed aft of BLUE Flight at an unknown distance. The launching aircraft remained about three miles away, broke off the attack and were lost visually. BLUE Flight turned back on course and proceeded to target.

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Event II-28

Aircraft Involved: Four F-105s vs one MIG-21

Results: No damage

Vicinity of Encounter: 21°52'N/105°12'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 July 1966/1446H

Four F-105s (BLUE flight) in Route Package VI-A for bombing mission against Thai Nguyen POL depot (TOT 1450H).

2. MISSION ROUTE

Unknown.

3. AIRCRAFT CONFIGURATION

BLUE Flight equipped with external tanks and an unknown number and type of bombs. MIG was observed to have no external stores or missiles.

4. FLIGHT CONDITION PRIOR TO ENCOUNTER

	<u>BLUE Flight</u>
<u>Altitude:</u>	8,000 ft
<u>Heading:</u>	100 degrees
<u>Speed:</u>	450 kt
<u>Fuel State:</u>	Full internal and some in the tanks
<u>Flight Formation:</u>	Unknown

5. INITIAL DETECTION

BLUE 3 called a bogey approaching at 9 o'clock, 1-1/2 to 2 miles out, 6,000 ft above.

6. ACTION INITIATED

BLUE flight jettisoned fuel tanks, broke left into the bogey. It was immediately recognized as a MIG-21 by delta wing and lack of camouflage paint (it was silver). BLUE 3 and 4 went high hoping to box in the MIG, but the MIG executed tight turn (direction unknown) and escaped to the south. The MIG closed to 6,000 to 8,000 ft from the flight. The distance was never closed during the turn.

7. SITUATION DEVELOPMENT

After the MIG escaped, BLUE flight continued on to the target and dropped their bombs on the target.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

Experience: Unknown except that this was BLUE 1's first MIG encounter.

Comments on this encounter: BLUE 1 commented that MIGs would usually depart anytime you jettisoned ordnance or tanks -- he assumed he had accomplished his mission and departed rather than actually engage.

11. DATA SOURCES

Project Interviews: BLUE 1 - 5 Jan 1967

Messages, Reports, etc:

7AF DOCO-0 23226 201328Z July 66
388TFW OPREP-4 Pinnacle/610 20 July 66

12. NARRATIVE DESCRIPTION

BLUE flight was inbound to a Package VI-A target when BLUE 3 called out a bogey 1-1/2 to 2 miles at 9 o'clock. BLUE flight jettisoned tanks - retaining bombs - and turned toward the bogey. The bogey, a clean MIG-21, executed a tight turn and accelerated and escaped in the haze heading south. BLUE flight turned with the MIG until they were headed down the Red River. The flight then proceeded to attack the target.

The MIG was initially in a position to launch a missile if he had carried one.

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Event II-29

Aircraft Involved: Four F-105s vs one MIG-21

Result: Two sightings

Vicinity of Encounters: 21°50'N/104°15'E
21°50'N/104°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 July 1966/1602H, 1610H

5. INITIAL DETECTION

BLUE Flight (four F-105s) at 12,000 ft and 21°50'N/104°15'E, approximately 35 miles west of Yen Bai observed a probable MIG-21 aircraft. The time was 1602H. The MIG was at 15,000 ft or higher heading southwest in the vicinity of 21°40'N/105°15'E.

6. ACTION INITIATED

Flight continued on mission.

7. SITUATION DEVELOPMENT

MIG "flew off in the distance" and disappeared. BLUE Flight continued on the mission. At 1610H when at 21°50'N/104°45'E BLUE Flight again observed a single probable MIG-21. The MIG was in the vicinity of 21°50'N/105°00'E, altitude 14,000 ft and climbing, heading east. BLUE Flight unable to discern color or markings due to distance, and only the delta wing could be recognized.

11. DATA SOURCE

TAF DOI 30041 202359Z July 1966.

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Event II-30

Aircraft Involved: Four F-105s vs three MIG-17s

Result: Sighting only

Vicinity of Encounter: 20°40'N/104°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 July 1966/1630H

BLUE Flight was on a strike mission. They had delivered their ordnance on a target of opportunity (unable to hit primary target due to weather) and were enroute to home base.

2. MISSION ROUTE

Route to target was unknown. Flight was returning from target and was at 20°40'N/104°30'E.

3. AIRCRAFT CONFIGURATIONS

Configuration of BLUE Flight unknown. Flight was carrying external fuel tanks at time of MIG sighting.

MIGs 1 and 2 had air-to-air rockets or missiles. MIG 3 had no radome on nose of aircraft, camouflaged on top (dark brown sandy color) and white on the bottom.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 2 to 3000 ft broken to overcast. Cumulus buildups in the area scattered to broken, tops above 23,000 ft.

	<u>Altitude</u>	<u>Air Speed</u>	<u>Heading</u>
BLUE	17,000 ft	400 kt	about 200°
MIGs	about 17,000 ft	above 400 kt	about 200°

Flight Formation:

Flight of four F-105s in a spread tactical formation with the second element (BLUE 3 and 4) to the right and behind BLUE Lead.

5. INITIAL DETECTION

BLUE 4 called bogeys out at 5 o'clock about 4-5 miles out.

6. ACTION INITIATED

BLUE 1 called for mil power and started a left turn, BLUE Flight went around a cloud and lost sight of the bogeys.

7. SITUATION DEVELOPMENT

BLUE 4 saw a MIG maneuver and identified bogeys as MIG-17s. BLUE 1 called to jettison tanks, go AB and started a shallow left turn toward a cloud bank on the left. BLUE 4 saw four air-to-air rockets or missiles fired from about 4 miles back (two each from MIGs 1 and 2) and called "Missiles away from the aircraft." BLUE 1 called for a left break and BLUE 1 and 2 entered the clouds. BLUE 4 saw MIGs 1 and 2 break up and right back to the North as if they were leaving the area. BLUE 3 and 4 entered the clouds descending to the left. BLUE 4 thought he was overtaking BLUE 1 and 2 so he pulled up. As he broke out of the clouds, he saw MIG 3 descending headon from 11 o'clock. BLUE 4 fired 63 20mm hoping MIG 3 would pass in front. MIG 3 went under BLUE 4 and was not seen again. BLUE 1, 2, 3 and 4 exited at M1.3 to 1.4 to the South.

8. ORDNANCE

BLUE 4 - approx. 60 to 180 rounds of 20mm cannon. -- no hits
MIG 1 - 2 air-to-air missiles¹ -- didn't guide; no hits
MIG 2 - 2 air-to-air missiles¹ -- didn't guide; no hits

¹Estimated to be AA-2/A by 7th Air Force - DIO 0055

9. EQUIPMENT PROBLEMS

None mentioned.

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Event II-30

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>105 Hours</u>	<u>Combat Missions</u>
BLUE 1	5000	200	20
BLUE 2	-----	Unknown	-----
BLUE 3	-----	Unknown	-----
BLUE 4	3800	650	4

Comments on this Encounter:

BLUE 1 - 4500 hours jet time. Korea experience. F-80, F-86, B-52, B-47.
No formal gunnery school.

BLUE 4 - Thirteen years in jet. F-80, T-33, F-84, F-100.

11. DATA SOURCES

Project Interviews: Interview with BLUE 1--1 Feb 67, and with BLUE 4--5 Feb 67.

Messages, Reports:

230825Z, 7AF, DOCO 23352, July 1966
221530Z, 7AF, DOCO 23353, July 1966
222238Z, 7AF, DIO 0055, July 1966
USAF Fighter Weapons Center Bulletin 7.

12. NARRATIVE DESCRIPTION

BLUE Flight was returning from a strike mission on a secondary target. The primary target was not hit due to weather. The flight was at 17,000 ft, .85 Mach, heading SW when BLUE 4 saw two bogeys at 5 o'clock. The bogeys seemed to be following the flight. BLUE 4 notified the flight. BLUE Flight went around a cloud (there were cumulus buildups to above 23,000 ft), and the bogeys followed. BLUE 4 now saw three bogeys and identified them as MIGs. BLUE Lead called for a gentle left turn to keep the MIGs in sight and BLUE Flight dropped tanks and went to AB. MIGs 1 and 2 then fired two air-to-air rockets or missiles at BLUE 1 and 2. Missiles probably were Soviet AA-2 or 2A type of missiles fired at a bad angle and near clouds and thus failed to guide. (Reference: 7th AF DIOD) BLUE 4 called the missiles and BLUE Flight broke left and down to a cloud bank. BLUE 4 had spread out slightly to keep the MIGs in sight. As BLUE 4 entered the clouds he felt he was overtaking BLUE 1, 2 and 3 so he pulled up out of the clouds. As he came out of the clouds, MIG 3 appeared at 11 o'clock and passed under BLUE 4. BLUE 4 fired approximately 65-180 rounds of 20mm cannon but missed. The MIG entered the clouds and was not seen again. BLUE Flight exited the area. No damage.

SECRET

Event II-31

Aircraft Involved: Four F-105s vs two possible
Result: No Damage MIG-19s

Vicinity of Encounter: 20°20'N/103°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 25 July 1966/1020H

Four F-105s (Blue Flight) from Takhli were on a strike mission.

11. DATA SOURCE

355TFW 250545Z Jul 1966

12. NARRATIVE

Blue Flight was egressing from a strike when they received air-to-air vector signals from 9 o'clock. They saw two bogeys two miles away. The bogeys began a pursuit curve and Blue Flight broke towards the bogeys and jettisoned external tanks, then reversed and disengaged to the south.

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Event II-32

Aircraft Involved: Four F-105s vs two MIG-17s

Results: 1 F-105 damaged
1 MIG-17 damaged
1 MIG-17 possible damage

Vicinity of Encounter: 21°49'N/104°42'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 12 August 1966/1088H

GREEN (4 F-105s) and BLUE (3 F-105s) Flights had completed their primary strike mission against the La Danh POL storage area and were egressing as separate flights northwest of Thud Ridge when GREEN 1 was hit by ground fire and ejected. GREEN 2 jettisoned his external tanks to RESCAP GREEN 1. The remaining members of GREEN and BLUE Flights continued egress for RESCAP refueling and returned to relieve GREEN 2 who then departed for home with BLUE 3 as an escort.

2. MISSION ROUTE

GREEN Flight departed Takhli AB, Thailand, refueled, and then proceeded on a northeasterly heading to the target area (La Danh storage area). After striking the target GREEN Flight proceeded northwest of Thud Ridge to approximately 21°49'N/104°42'E where GREEN 1 was downed, thence to the refueling area and back to this location.) BLUE Flight essentially followed this same route approximately 5 minutes behind GREEN Flight, joining with GREEN 3 and 4 during RESCAP refueling.

3. AIRCRAFT CONFIGURATION

F-105 BLUE 1, 2, 3

2 - 2000 lb or 3000 lb bombs^a
1 - Centerline tank
1 - M-61 Gatling Gun, 20mm (1029 rounds)

F-105 GREEN 1, 2, 3, 4

2 - CBU-24a
1 - Centerline tank
1 - M-61 Gatling gun, 20mm (1029 rounds)

MIG-17 MIG 1, 2

1 - Gun (23mm), clean wings
No camouflage, dull silver color, Red Star on wing.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken to scattered building cumulus. Bottoms at 3000 ft and tops at 12,000-15,000 ft.

	<u>GREEN 3, 4</u>	<u>BLUE 1, 2</u>
Altitude:	5000 ft	10,000-15,000 ft
Heading:	Left Turn	Left Turn
Air Speed:	300-350 KCAS	Unknown
Fuel State:	Bingo	Unknown

Flight Formation: BLUE 1, 2 about 3-5 n mi behind GREEN 3, 4.

5. INITIAL DETECTION

BLUE Flight was in a left bank when they sighted 2 MIG-17s at 11-12 o'clock, range of 2 n mi, trailing GREEN 3 and 4 in attack position.

6. ACTION INITIATED

BLUE 1 warned GREEN Flight of MIGs and after GREEN 3 confirmed presence of MIGs behind him at a range of about 1500 ft, GREEN 3 and 4 dropped tanks and headed for the deck in afterburner. BLUE 1 and 2 turned into the attack with BLUE 1 dropping tanks and 2 keeping his tanks.

7. SITUATION DEVELOPMENT

GREEN 3 and 4 split left and right, respectively. Then GREEN 4 turned on MIG 1 who was behind GREEN 3. GREEN 4, however, received some hits from MIG 2, yet was able to continue attack of MIG 1. Meanwhile, BLUE 2 was closing in on MIG 2 and when he fired MIG 2 broke sharply left into clouds, which previously GREEN 3 had done. BLUE 2 does not know if he hit MIG 2. Meanwhile BLUE 1 was after MIG 1 who had somehow gotten off of GREEN 4's tail and both of them (MIG 1 and BLUE 1) when into clouds as observed by BLUE 2.

^aDropped on target prior to MIG engagement.

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- Event II-32

8. ORDNANCE

	<u>No. Fired/No. Hits</u>	<u>Remarks</u>
BLUE 1	1/1 (damage)	Fired 457-507 rounds
BLUE 2	1/0	Fired 700-750 rounds
GREEN 3	0/0	
GREEN 4	1/1 (possible damage)	Fired 580 rounds
MIG 1		
MIG 2	1/1 (damaged G4)	Unknown no. of rounds fired

9. EQUIPMENT PROBLEMS

BLUE 1, 2: Gun camera film came out black (apparently unexposed).

10. AIRCREW COMMENTS

<u>Experience</u>	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>SEA Combat Missions</u>
BLUE 1	Unknown	Unknown	Unknown
BLUE 2	Unknown	Unknown	Unknown
GREEN 3	Over 5,000	Approx. 400	Approx. 60
GREEN 4	Unknown	Unknown	Unknown

Comments on this Encounter:

BLUE 2: Unable to track MIG in turn. (Still had external tanks).
Need more maneuverability to employ guns, use of missiles
requires less positioning.

General Comments

BLUE 2: SIDEWINDERS carried at times were in poor condition (i.e.,
scratched or pitted heads, etc.)
The training received did not include sufficient live firing
experience but relied too heavily on simulation.
He felt the concept of air-to-air missiles was good but should
be backed up with a good gun.
The warning equipment carried on-board is good but false alarms
(or ambiguities) should be eliminated.
Two men are not a necessity for type of mission flown.

11. DATA SOURCES

Project Interviews: BLUE 2 (16 Mar 1967) and GREEN 3 (8 Mar 1967)

Messages:

7AF 12 1754Z August 1966, DOCO-24192, SECRET
7AF 12 2300Z August 1966, DOCO-24207, CONFIDENTIAL

12. NARRATIVE DESCRIPTION

GREEN Flight dropped ordnance on target as scheduled. On the way home, flight observed truck traffic and proceeded to attack. GREEN 3 thought he was hit by ground fire and, along with GREEN 4, departed area as a precaution and headed for a tanker. GREEN 1 was hit by ground fire on a subsequent pass and was forced to eject. GREEN 2 stayed in the area as RESCAP and jettisoned his centerline tank so as to stay in area longer.

In the meantime, BLUE Flight, which was about five minutes behind GREEN Flight, had hit the target and heard the call that GREEN 1 (L) was down. BLUE Flight consisted of 3 airplanes since one had air-aborted prior to hitting the target. BLUE Flight proceeded to tanker to refuel so that they would be available for RESCAP if needed. BLUE 1 and 2 together with GREEN 3 and 4 returned for RESCAP and GREEN 2 and BLUE 3 were sent home. BLUE 1 and 2 were flying at high altitude (10-15,000 ft) while GREEN 3 and 4 were flying at low altitude (approx 5,000 ft) looking for the downed pilot.

BLUE 1 and 2 were in a left turn when BLUE 1 (L) sighted 2 MIGs on the tail of GREEN 3 and 4. BLUE 1 called the information to GREEN 3 who at first thought the MIG was his wingman. Upon verification GREEN 3 saw that they had 2 MIGs at 6 o'clock at a range of approximately 1500 ft. GREEN 3 and 4 jettisoned external stores, lit the afterburner and dove for the deck, getting down to approximately 700 ft altitude. GREEN 3 turned left and GREEN 4 turned right and reversed and got on the tail of MIG 1 chasing GREEN 3, and thinks he hit MIG 1 with cannon fire. MIG 1 was firing at GREEN 3 but scored no hits as the MIG's cannon fire went over the top of both wings. GREEN 3 was able to duck into a cloud and lost contact with the MIGs and the other F-105s. MIG 2, behind GREEN 4, was firing at GREEN 4 and hit him on the top of the left wing with cannon fire but GREEN 4 was able to continue. Meanwhile, BLUE 1 and 2 closed on the two MIGs who were still unaware of their presence. BLUE 1 jettisoned his tank but in the excitement BLUE 2 did not. BLUE 1 and 2 chased MIG 1 and 2 with a left descending turn, and in doing so BLUE 1 was sandwiched between MIG 1 and 2. BLUE 2 tried to get into attack position on MIG 2 and called BLUE 1(L) to break out due to MIG 2 on his tail. Still in a descending left turn, BLUE 2 approached firing position on MIG 2 when the MIG turned hard and really out-turned BLUE 2.

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Event II-32

BLUE 2 fired approximately 700 to 750 rounds but there was no indication of a hit. BLUE 2 was doing approximately 420-450 kt. BLUE 1 went into the clouds and so did the two MIGs. BLUE 2 broke off and up to the right to get on top to be able to pick up MIGs again:

BLUE 2 checked in with BLUE 1 who reported that he thought he had hit a MIG and that the MIGs had broken off and were headed for home. BLUE 1 and 2 rejoined and both refueled prior to returning to home base. Due to the late hour, rescue service was postponed to the next day. The gun camera films were unusable since they either were not exposed or underexposed to an extent that they could not be interpreted.

GREEN 3 and 4 joined up on top of clouds and returned home, low on fuel. They had to recover at Udorn since no tankers were available to them.

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Event II-33

Aircraft Involved: Two F-105Ds vs one MIG-17

Result: No damage

Vicinity of Encounter: 21°10'N/105°54'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 August 1966/1516H

Two F-105Ds from Korat (BLUE 1 and 2) were to attack JCS 51, an oil depot north of Hanoi. BLUE 3 and 4 air aborted because one of the aircraft had radio problems and the other escorted him back to base.

2. MISSION ROUTE

BLUE Flight refueled over the Gulf, they then proceeded northwest to a point south of Hanoi, turned north, passed Hanoi to the west and approached the target in a southwest heading. The bomb run on the target was made from the South (i.e., a northerly heading).

3. AIRCRAFT CONFIGURATIONS

BLUE 1 and 2

- 2 - 450-gal wing tanks
- 6 - 750 lb bombs (centerline MER)
- 1 - M-61 Gatling gun, 20mm (1,029 rounds)

BLUE 1 had ECM vector equipment (to provide SAM warning)

MIG-17A

Guns
Silver in color with Red Chinese markings

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear with 5 miles visibility with slight haze. Thunderstorms over the mountains.

	<u>BLUE 1</u>	<u>BLUE 2</u>
<u>Altitude:</u>	3,000 ft AGL	Unknown
<u>Speed:</u>	495 ft	450 ft
<u>Fuel State:</u>	Using internal, but had fuel in wing tanks	External tanks only
<u>Heading:</u>	090°	045°

Flight Formation: BLUE 2 behind and to the right of BLUE 1.

5. INITIAL DETECTION

As BLUE 1 was pulling off target on heading of 090°, BLUE 2 called a MIG-17 closing on BLUE 1 from his 7 o'clock position at 5,000 ft.

6. ACTION INITIATED

MIG was closing rapidly, firing at BLUE 1. BLUE 1 dove for deck and both BLUE 1 and 2 jettisoned tanks and went afterburner.

7. SITUATION DEVELOPMENT

BLUE 1 accelerated away from MIG who continued to fire at BLUE 1. BLUE 2 got into the MIGs 6 o'clock position and closed range. He fired at the MIG but no hits were detected. BLUE 2 overtook MIG who was flying straight and level and barrel-rolled 200 feet over MIG and flew straight ahead.

8. ORDNANCE

	<u>No. fired/No. Hits</u>	<u>Remarks</u>
BLUE 2	1/0	Expended approximately 75 rounds
MIG	1/0	No hits recorded.

9. EQUIPMENT PROBLEMS

BLUE 2: Could not get his sight on. Had to use center of wind screen for sight. Was shooting low.

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Event II-33

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 1	-	Unknown	-
BLUE 2	1500	450	87

Comments on the Encounter:

BLUE 2: Everything happened so fast he didn't have time to set up for a gun pass. If they had had a flight of 4 they could have sandwiched the MIG and perhaps gotten him. MIG did not have any air-to-air missiles. Believes MIG orbited target area and attacked from a high altitude to catch F-105 by surprise.

Comments from Overall Experience:

BLUE 2: Felt he had insufficient quantity of training for air-to-air type engagements. Thought MIG-17 was not a threat to F-105 due to the high speed on the deck of the F-105. F-105 needs a better gun sight. Would like to have AIM-9 faired into the wing tips such as the F-104. Didn't like the fact that the radar didn't work close to the ground because of the ground clutter. Considers BIG EYE is a waste of time for MIG warnings.

11. DATA SOURCES

Project Interviews: BLUE 2, 5 January 1967

Messages, Reports:

7AF 171606Z DOCC 24403 August 1966, SECRET.
Fighter Weapons Bulletin 7

12. NARRATIVE DESCRIPTION

Two F-105s (BLUE 1, 2) were on a strike mission to hit the Nguyen Khe POL storage area. Enroute to the target, the aircraft refueled over the Gulf. Shortly before reaching the target after BLUE 1, BLUE 2 started to pull-up, BLUE 1 received a SAM warning on his vector gear. BLUE 1 descended to 5,000 feet, jinking to look for the SAM. When none was sighted, BLUE 1 pulled up again to 12,000 feet and rolled in on the target to drop six 750-pound bombs. BLUE 2 was behind and to the right of BLUE 1. As BLUE 1 pulled off the target on a heading of 90°, altitude 3,000 feet, BLUE 2 sighted a MIG-17A (MIG 1) closing on BLUE 1 at his 7 o'clock position and at about 5,000 feet AGL. BLUE 2 at this time was in the bomb delivery phase. BLUE 2 delivered his ordnance and during pullup saw MIG 1 closing on BLUE 1 and firing as evidenced by seeing a flame of the small gun in the MIG's nose and a cannon going off and shells bursting. BLUE 1 and MIG were both in a slight left hand turn. BLUE 2 called BLUE 1 to "break - you have a MIG closing". BLUE 1 and 2 went to after burner and jettisoned tanks. BLUE 1 headed for the ground, maintained 4.5 g's and 400 kt in a left turn. MIG 1 outturned BLUE 1 and continued to close. The MIG fired when reaching range of 4000 feet and continued until the range closed to 1500 feet. BLUE 1 dove to approximately 5 ft AGL, so low he had to pull up to avoid rice paddy dikes. MIG continued firing all the way. BLUE 1 finally separated at Mach 1.2. Estimated speed of MIG was 580 kt.

In the meantime BLUE 2 started to chase the MIG and set up his weapons by setting the weapon selector switch from "bombs" to "guns-air", the radar to "air-to-air" and the radar to "radar lock-on" in order to obtain range information for the gun. BLUE 2 hit the button to reject farthest target but did not get a good sight picture. He then maneuvered the airplane to place the MIG in his windscreen and fired (approx. 3/4 second or 75-150 rounds). At this point, BLUE 1 cut in front of the MIG and BLUE 2 had to cease firing. Almost immediately BLUE 2 pulled up and barrel-rolled approximately 200 feet above the MIG, BLUE 1 and BLUE 2 pulled away from MIG as MIG began to drop off at completion of turn and BLUE flight had established a high speed on a heading of 325°. Both aircraft recovered safely, BLUE 1 had to refuel enroute home.

SECRET

Event 11-34

Aircraft Involved: Two F-105Ds vs one or two,
MIG-17s

Results: No damage (F-105s jettisoned ordnance
and aborted strike mission)

Vicinity of Encounter: 21°05'N/105°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 August 1966/1502H

BLUE Flight was on a strike mission enroute to the Nguyen Khe POL storage area.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Altitude: 3500 ft
Heading: 315°
Speed: 510 kt

11. DATA SOURCES

7AF, 172019Z, DOCO 24415 Aug 66, CONFIDENTIAL
7AF, 171420Z, DOCO 24398 Aug 66, SECRET
7AF, 180039Z, DIO 30251 Aug 66, SECRET-NOFORN

12. NARRATIVE DESCRIPTION

BLUE Flight, consisting of 2 F-105s on a strike mission enroute to target (Nguyen Khe POL area) encountered one MIG-17 (possibly two MIG-17s). At time of encounter, BLUE Flight was at 21°05'N/105°55'E, altitude 3500 ft, speed 510 kt, heading 315°. As the MIG started to turn in, BLUE Flight attempted to turn left into the MIG. BLUE 1 and 2 jettisoned ordnance and tanks, but the MIG-17 continued to gain advantage. BLUE 1 and 2 lit afterburners and dove to 500 feet ending up on a heading of 90°. Contact with the MIG was lost during this descent; no firing was reported. BLUE flight reported heavy flak activity which continued during the MIG encounter and the MIG as well as BLUE Flight had to fly through the flak.

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Event II-35

Aircraft Involved: Two F-105s vs two MIG-17s

Result: One MIG 17 destroyed
One F-105 damaged

Vicinity of Encounter: 21°20'N/105°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 18 August 1966/1528H

One F-105F and three F-105Ds (BLUE Flight) in an IRON HAND flight. Three flights of four F-105Ds in a strike group (GREEN, RED, YELLOW). IRON HAND flight was to attack SAM sites in support of the strike group. See Events II-36 and II-37 for GREEN and YELLOW actions.

2. MISSION ROUTE

Departed Korat and refueled with airborne tankers at sea on northerly course. Made land fall at approximately 19°22'N/105°56'E at 4500 ft, 520-kt CAS. Proceeded westerly to vicinity of Kin Diem. Turned northerly and descended to the deck. At Hoa Binh turned northeasterly to the target area, which was southeast of Thud Ridge and north of Hanoi.

3. AIRCRAFT CONFIGURATIONS

F-105F BLUE 1

2 - SHRIKE (AGM-45)
2 - Rocket pods (2.75")
1 - 650-gal external fuel tank
Full 20mm ammunition

F-105D BLUE 2, 3, 4

2 - Rocket pods (2.75")
2 - 450-gal external fuel tanks
Full 20mm ammunition

F-105D GREEN, RED, YELLOW

Loading unknown. Expect external fuel and 750-lb bombs.

Camouflage

All airplanes had white underside and green top surface.

Avionics

BLUE 1 - WILD WEASEL
BLUE 2 - Radar - Stby; IFF - Stby; doppler - on
Others - Unknown

MIG-17 MIG 1, 2

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered clouds, good visibility.

Altitude: 2000- to 5000-ft AGL, maneuvering to avoid SAMs.

Heading: In left turn to northerly heading from a southeasterly heading

Speed: 450- to 550-kt CAS; BLUE 1 in afterburner; BLUE 2 afterburner blown out by SAM.

Fuel State: Full internal; unknown amount in external tanks

Flight Formation: BLUE 1 and BLUE 2 in spread formation with BLUE 2 about 1000 ft on left wing of BLUE 1 during run-in to target. At the time of the MIG sighting BLUE 2 was ahead of BLUE 1. BLUE 3 and BLUE 4, GREEN, RED, and YELLOW flights were in the immediate area.

5. INITIAL DETECTION

MIGs were sighted visually in loose trail by GREEN 1 (Lead) as lead MIG attacked BLUE 1 from six o'clock. MIGs maneuvered in the vertical to prevent overrunning BLUE 1.

6. ACTION INITIATED

GREEN 1 called MIG at BLUE 2's 6 o'clock. Both BLUE 1 and BLUE 2 began maneuvering.

7. SITUATION DEVELOPMENT

BLUE 2 turned hard left when the MIG warning was called by GREEN 1. BLUE 2 saw the MIG was on BLUE 1 and called a left break for BLUE 1. BLUE 1 fired two SHRIKE missiles at a SAM site and jettisoned all remaining external ordnance and fuel tanks. BLUE 2 jettisoned external fuel tanks but retained his rocket pods. MIG was on the tail of BLUE 1 and shooting. BLUE 1 passed under BLUE 2 with the MIG in pursuit and shooting. BLUE 2 maneuvered into 6 o'clock position on the MIG and commenced firing with his 20mm gun. The MIG was destroyed by BLUE 2. Duration of the engagement was estimated to be less than 2 min.

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8. ORDNANCE

- Event II-35

BLUE 1 fired two SHRIKE AOM-45 missiles.

BLUE 2 fired about 200 rounds of 20mm ammunition at a MIG-17 while in 6 o'clock position on MIG at 400- to 600-ft range. Both in gentle left turn. BLUE 2 did not have a gunsight.

9. EQUIPMENT PROBLEMS

BLUE 2 ordnance switches were set up for air-to-ground attack mode. BLUE 2 did not sequence switches properly when switching to air-to-air mode, therefore, did not have a gunsight.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>				Pilot was very experienced. This was about his 50th WILD WEASEL mission. Although this was his first MIG encounter, he had previously evaded SAMs.
<u>BLUE 2</u>	3000	600	102 Korea 51 Vietnam	Tactical reconnaissance and tactical fighter background.
<u>BLUE 3, 4</u>				Not interviewed
<u>GREEN, RED, YELLOW</u>				Not interviewed

Comments on this Encounter

BLUE 2 - Pilot was encumbered by the complexity of switchology in attempting to change from air-to-ground mode to the air-to-air mode.

Did not have use of the gunsight when needed.

MIG early warning would have been helpful.

Comments from Overall Experience

More turning capability in a fighter highly desirable.

Weapon system should provide range to the target.

Pilot experience was a predominant factor in the success of the engagement.

11. DATA SOURCES

Project Interviews: BLUE 1 (Lead), 14 Mar 1967; BLUE 2, 4 Jan 1967

Message Reports:

7th AF/OPREP-3/181520Z Aug 66/DOCO 2440

USAF Tactical Fighter Weapons School Bulletin No. 7

Gun camera film from BLUE 2.

12. NARRATIVE DESCRIPTION

The mission consisted of four flights of F-105Ds and one F-105F. The target was a POL installation north of Hanoi. The lead flight (BLUE) was followed by three other flights (GREEN, RED, YELLOW). BLUE 1 (IRON HAND) was the strike leader. BLUE 2 was wingman for IRON HAND and with the section, BLUE 3 and BLUE 4 were to provide protection for BLUE 1 (L) and to strike SAM sites in support of IRON HAND. BLUE 1 (L) was armed with two SHRIKE missiles, two 2.75" rocket pods and a 20mm Vulcan gun, and was carrying a 650-gal external fuel tank. BLUE 2 was carrying two 450-gal external fuel tanks, two rocket pods (2.75") and was armed with a 20mm Vulcan gun. Both airplanes were camouflaged with white underside and green top surface. The mission departed Korat, proceeded eastward, and rendezvoused with the airborne tankers. Refueling was completed on a northerly heading. The flight made landfall at approximately 19°22'N/105°56'E at 4500 ft, 520-kt CAS and turned westerly. The four flights (BLUE, GREEN, RED, YELLOW) were in trail at about five-minute intervals. As BLUE flight approached the second checkpoint, in the vicinity of Kin Diem a large thunderstorm blocked the desired course. After starting to circumnavigate the storm to the south, BLUE 1 (L) reversed his flight and passed the storm to the north. In maneuvering to avoid the thunderstorm BLUE 1 and BLUE 2 became separated from BLUE 3 and BLUE 4 and the following flights caught up. The strike flights were no longer in five-minute trail but were within visual range of each other. The flights descended to the deck and proceeded northerly and passed directly over Phuc Yen. BLUE 1 and BLUE 2 climbed to about 6000 ft maintaining 475-kt CAS as they approached the target area. There were scattered clouds with good visibility in the target area.

SECRET

NARRATIVE DESCRIPTION (CONTD)

Event II-35

T₀ -- BLUE 1 was concentrating on firing a SHRIKE missile and BLUE 2 was flying wing as they passed through the primary target area. Electronic emissions received indicated SAMs had been launched. Visual sightings of the SAMs at 9 o'clock confirmed the electronic warning. The flight broke left and down and then pulled up into a climbing turn as a SAM passed underneath.

T₁ -- A SAM detonated between BLUE 1 and BLUE 2. At this time BLUE 2 was out in front of BLUE 1 and a little to the right. The concussion from the blast blew out the afterburner in BLUE 2. Another SAM passed over the flight and detonated. Two other SAMs were sighted but were no threat and disappeared in small clouds.

T₂ -- The area of launch was sighted and BLUE 1 pulled up and fired two AGM-45 missiles at the SAM site. A SHRIKE passed over the nose of BLUE 2. A friendly airplane in the area called, "BLUE 2 you have a MIG on your tail." BLUE 2 turned hard left and saw the MIG was on BLUE 1.

T₃ -- BLUE 1 was told to break left and did so as he jettisoned all remaining external ordnance and fuel tanks. BLUE 2 jettisoned his external fuel tanks and attempted to change his armament switches from air-to-ground mode to air-to-air mode. He did not obtain the use of his gunsight.

T₄ -- BLUE 1, with the MIG chasing him and firing at him, passed under BLUE 2 who was in a left turn. BLUE 2 broke hard left and maneuvered to a position behind the MIG at a range of 400 to 600 ft and fired his 20mm gun.

T₅ -- The MIG burst into flame and was observed to enter an inverted dive and impact with the ground.

T₆ -- A second MIG passed through the flight without engaging and departed the area.

BLUE 1 and BLUE 2 departed the area and returned to base. BLUE 1 had received very light damage from the MIG. BLUE 2 still had his two rocket pods. BLUE 2 had fired about 200 rounds of 20mm ammunition.

The pilot of BLUE 2 was encumbered by the complexity of switchology in attempting to change from air-to-ground mode to air-to-air mode. As a result the pilot did not have the use of a gunsight when he was in position to shoot. The pilot stated that early warning of MIG activity would have been helpful. He also expressed a desire that the weapon system provide range information. For air-to-air encounters the pilot stated he would like to have more turning capability. Pilot experience was a predominant factor in the successful destruction of the MIG.

GREEN and YELLOW Flight actions contained in Events II-36 and II-37.

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RED BARON EVENT II-35 SUMMARY

Time Mark	Action Aircraft (BLUE 1,2)		Other Friendly (GREEN 1)	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T0	B1 SHRIKE (2) External fuel tanks (2) 450 gal Full 20mm ammunition B2 2.75" rocket pods (2) External fuel tanks (2) 450 gal Full 20mm ammunition 3500 ft 525-kt CAS	B1,2 sight SAMs. Both into burner, begin diving turn to the left followed by climbing turn.	Commenced evasive maneuvers.	B1 alerted flight to launch of SAMs.	Launched SAMs.	
T1	2000-ft to 5000-ft 450 to 550-kt CAS	B1 and B2 maneuvered to evade SAMs. B2 out in front of B1. SAM exploded between B1 and B2, blew out AB in B2. B1 maneuvering to fire SHRIKE.		B1 was controlling flight with voice calls.	Launched SAMs.	
T2		B1 launched SHRIKE. B2 hard left turn when alerted to MIG. Saw SHRIKE and MIG on B1.	G1 called, "B1 you have a MIG on your tail."		MIG attacking B1.	

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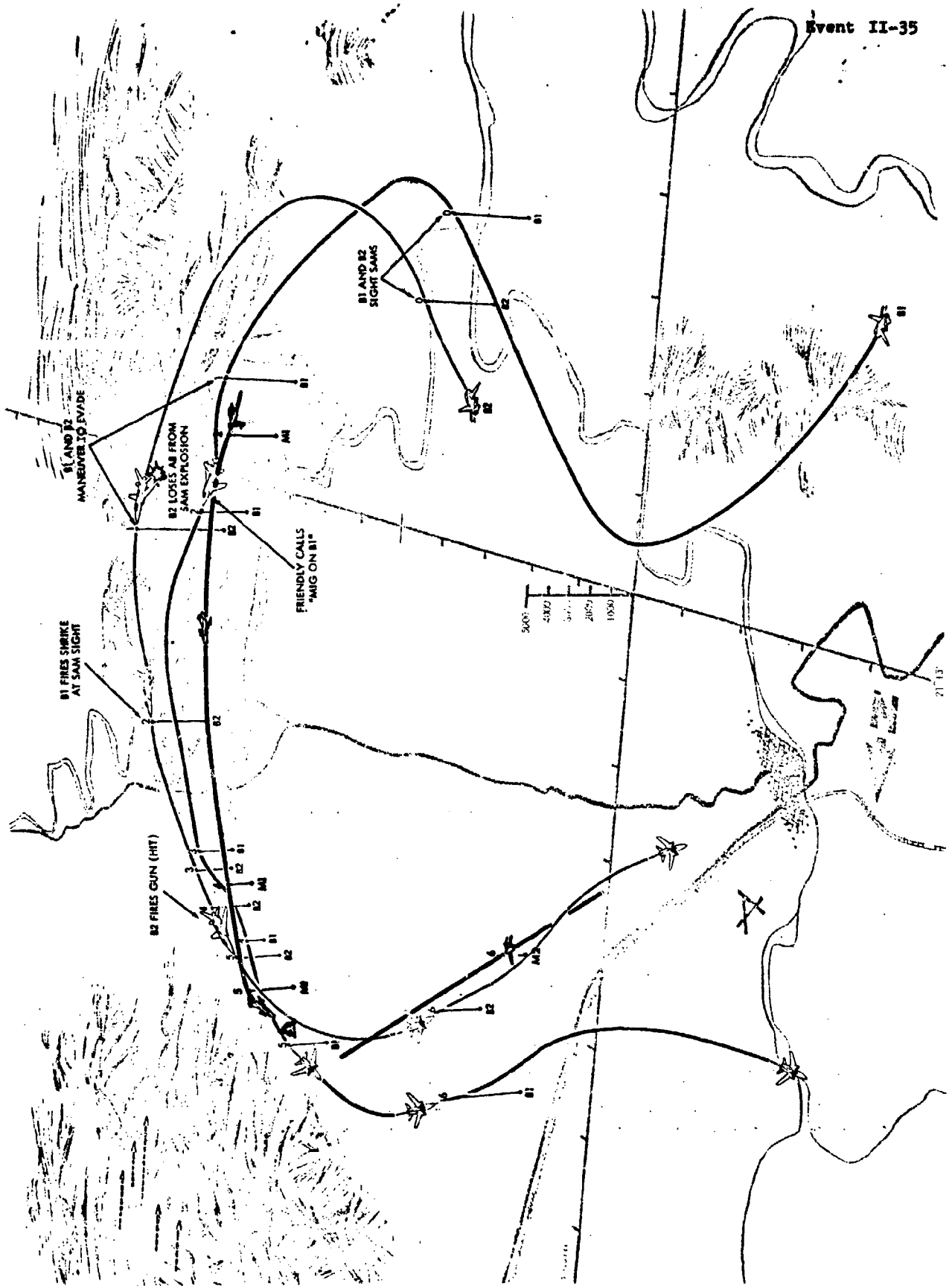
RED BARON EVENT II-35 SUMMARY (CONT.)

Time Mark	Action Aircraft (BLUE 1,2)		Other Friendly (GREEN 1)	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T3	B1 jettisoned external ordnance and fuel tanks. B2 jettisoned external tanks and attempted to switch from A-G to A-A.	B2 in hard left turn. B1 broke left and accelerating in AB.		B2 called B1 to break left. The MIG was on B1.	MIG attacking B1.	
T4		B1 broke hard left. B2 passed under B1. B2 from a position above and to the right of MIG maneuvered into firing position and opened fire.		B1 called, "Get the MIG off my tail."	MIG pressing attack on B1 and firing.	
T5		B2 firing at MIG, no gun-sight. Saw MIG burst into flame.			MIG burst into flame, rolled inverted and crashed.	
T6		B1,2 joined and departed the area.		B1 called alert that other MIG was in the area.	Second MIG passed close to B2 on opposite heading and cleared the area.	

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Event II-35



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Event II-36

Aircraft Involved: Four F-105Ds vs two MIG-17s

Result: No damage

Vicinity of Encounter: 21°13'N/105°54'E

1. PRIMARY MISSION AND TACTICAL SITUATION

See Event II-35. GREEN Flight was a part of the strike group, 18 August 1966.

2. MISSION ROUTE

See Event II-35.

3. AIRCRAFT CONFIGURATIONS

F-105D

Unknown

MIG-17

One MIG was silver gray in color.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown.

GREEN Flight

Altitude: 200 ft
Heading: 120°
Speed: 500 KTAS
Fuel State: Unknown
Flight Formation: Unknown

5. INITIAL DETECTION

While inbound to the target GREEN Flight sighted MIG 1 at 9 o'clock in a left turn at an estimated altitude of 100 ft. The flight lost sight of MIG 1 as it was turning through a heading of 090°.

5. ACTION INITIATED

No action taken. Flight lost sight of MIG 1.

7. SITUATION DEVELOPMENT

MIG 2 was sighted at 3 o'clock high (2000 ft). GREEN flight turned right 180°. MIG 2 made a quartering, head-on pass from GREEN's 10-11 o'clock. MIG 2 attempted to turn left into GREEN Flight as GREEN Flight turned about 30° left into MIG 2. While in a 90° bank, MIG 2 overshot GREEN Flight and disappeared at GREEN's 9 o'clock. The MIGs were not seen again.

11. DATA SOURCES

Messages:

7th AF/OPREP-3/181520Z Aug 66/DOCO 24441
7th AF/OPREP-4/181721Z Aug 66/DOCO 24447

SECRET

Aircraft Involved: Two F-105Ds vs three MIG-17s

Result: No damage

Vicinity of Encounter: 21°22'N/105°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 18 August 1966/1603H

Two F-105D aircraft (YELLOW Flight) were the last of four flights into the target area (see Events II-35 and II-36). After looking 20 minutes for the target, the flight expended their bombs on a bridge and were egressing the area when three MIG-17s were encountered.

2. MISSION ROUTE

See Event II-35.

3. AIRCRAFT CONFIGURATIONS

F-105D YELLOW 1, 2

MER on centerline
2 450-gal external fuel tanks
M-61 cannon - full 20mm ammunition
Doppler - on
Camouflage paint

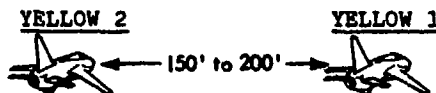
MIG-17 MIG 1, 2, 3

Silver color - No other configuration information.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Ceiling over Thud Ridge at 4 to 5,000 ft.

	<u>YELLOW 1 & 2</u>	<u>MIG 1</u>	<u>MIG 2, 3</u>
Altitude:	3,000 ft AGL	climbing thru 4,000 ft	Unknown
Heading:	310°	310°	Unknown
Speed:	450 KCAS	Unknown	Unknown
Fuel State:	Unknown	Unknown	Unknown
Flight Formation:	<u>YELLOW 2</u>	<u>YELLOW 1</u>	



5. INITIAL DETECTION

YELLOW 2 saw a MIG-17 pass the flight 1-1-1/2 miles to the left and climb up into a 4 to 5,000 ft cloud layer. YELLOW 2 called the MIG out to YELLOW 1. YELLOW Flight had not received any MIG warnings but had overheard other flights engaging MIGs and had seen the airborne fireball of a MIG kill.

6. ACTION INITIATED

A few seconds after MIG 1 went into the clouds, it descended from the clouds about 1,000 ft in front of YELLOW 2 in a nose-low attitude. YELLOW 2 did not have an air-to-air sight so he pulled the nose up, pointed the pitot boom at the MIG and pulled the trigger. No hits were observed.

7. SITUATION DEVELOPMENT

MIG 1 pulled up in a barrel roll of sorts and was maneuvering for position on YELLOW 1. At this time YELLOW 2 saw two more MIG-17s (MIG 2 & 3) just pulling in on YELLOW 1's tail. YELLOW 2 warned YELLOW 1 and the flight jettisoned all stores, ignited afterburner and headed down and toward Thud Ridge. YELLOW 1 now had MIG 1, 2, and 3 behind him and could see tracers going over his canopy. YELLOW 1 and 2 successfully outran the MIG flight, and recovered at home base with no further incident and no aircraft damage.

8. ORDNANCE

	No. fired/No. hits <u>Cannon</u>	<u>Remarks</u>
YELLOW 1	0/0	
YELLOW 2	184 rd/0	fired without gun sight
MIG 1, 2, 3	Unknown rounds/0	

SECRET

Event II-37

9. EQUIPMENT PROBLEMS

YELLOW 2 Air-to-air gun sight was out.
No other problems noted.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hrs</u>	<u>Combat Missions</u>
YELLOW 1	Unknown	Unknown	Unknown
YELLOW 2	Unknown	400	25

Comments on this Encounter

YELLOW 2 Very surprised at the maneuverability of MIG-17.

11. DATA SOURCES

Project Interviews: YELLOW 2, 13 Mar 1967.

Messages, Reports:

7th Air Force/OPREP-3/181825Z, Aug 66/DOCO, 2446.

12. NARRATIVE DESCRIPTION

YELLOW 1 and 2 were heading approximately 310° near Thud Ridge at 3,000 ft and 450 KCAS when a MIG-17 was sighted at 9 o'clock, 1 to 1-1/2 miles, climbing. MIG 1 then entered the overcast, cloud bases at 4 to 5,000 ft. A few seconds later MIG 1 descended out of the clouds in a shallow dive about 1,000 ft in front of and above YELLOW 2. Without benefit of an air-to-air gun sight, YELLOW 2 pulled up his nose and using the pitot tube for sighting fired a burst of 20mm. No hits were observed. MIG 1 pulled up into a barrel roll type of maneuver towards the 6 o'clock position of YELLOW 1. YELLOW 2 then saw two more MIG-17s closing on YELLOW 1 from the 6 o'clock. YELLOW flight descended to the deck while accelerating and disengaging as they departed the area.

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RED BARON EVENT II-37 SUMMARY

Time Mark	Action Aircraft (YELLOW 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1, 2)	Remarks
	Status	Action				
0	Y1 2 (2) 450 gal external fuel tanks. MER on centerline 3,000 ft 45C KCAS Hdg 310	Y2 sighted MIG 1 at 9 o'clock, level, in a climb.	Y1 150-200 ft at 3 o'clock, level	Y2 alerted Y1 of MIG at 10 o'clock	MIG 1 climbed into cloud layer at about 5,000 ft	No MIG alert received.
1	Same	Y2 fired hurried burst of 20mm at MIG 1. No hits observed.			MIG 1 descended out of clouds approximately 1,000 ft in front of Y2, slightly high.	Air-to-air gun-sight in Y2 mal-function. Used pitot boom for sighting.
2	Same	Y1 and Y2 jettisoned external fuel tanks and MER. Engaged A/B and descended to minimum altitude while accelerating Y2 sighted two more MIGs.		Y2 called "Y lead you've got two MIG's on your tail. Jettison everything and go burner."	MIG 1 executed a barrel roll over Y1 and joined MIG 2 and 3 at 6 o'clock position of Y1 at about 2,000 ft range.	Y1 observed tracers pass his canopy but was not hit.
3	Accel from 450 KCAS to 600 KCAS Hdg 310	YELLOW Flight disengaged by outrunning the MIGs.			MIGs discontinued the chase.	

SECRET

Aircraft Involved: Four F-105Ds vs four MIG-17s

Results: Two F-105Ds damaged

Vicinity of Encounter: 21°15'N/105°47'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 August 1966/1626H

Four F-105s (BLUE Flight) on strike mission to JCS target 51. They were unable to locate target due to flooding and had just interdicted a road at approximately 21°11'N/105°51'E.

2. MISSION ROUTE

Departed Korat, 17,000 ft and 480 kt, direct to tanker in Laos direct to Red River at 21°58'N/104°34'E. After crossing the Red River the flight let down to 7000 ft, increased airspeed to 510 kt, flew east to the mountains, turned right 45 deg and flew down Thud Ridge to the target area. BLUE Flight joined to egress at 21°55'N/105°06'E and flew generally the same route back.

3. AIRCRAFT CONFIGURATION

F-105D BLUE 1, 3, 4

2 - 450-gal tanks
6 - M-117 (750-lb) bombs

F-105D BLUE 2

2 - 450-gal tanks
2 - CBU-24s

Radar, standby. TACAN - receive only, doppler off, IFF standby except BLUE 1, camouflage paint.

MIG-17s

Color unknown, tanks unknown, no missiles

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Overcast at 12,000 ft with 3-5 miles visibility

	BLUE				Remarks
	1	2	3	4	
Altitude:	10,000 ft				BLUE Flight generally scattered and at different altitudes. Specific conditions given in narrative.
Heading:	Generally NW				
Speed:	550 kt				
Fuel State:	8000 to 10,000 lb				
Flight Formation:					

BLUE 1, 3 and 4 had just dropped ordnance and were not rejoined yet. BLUE 2 and 3 were about 1 mile apart, about 4 miles from BLUE 4. BLUE 1 was behind by about 5 miles; all heading NW.

5. INITIAL DETECTION

No MIG warnings were heard. BLUE 3 saw a MIG at his 6 o'clock, 3000 ft range.

6. ACTION INITIATED

BLUE 3 broke, left and down. BLUE 2 saw a MIG below and left. He rolled inverted and dived on the MIG.

7. SITUATION DEVELOPMENT

The MIG moved quickly inside BLUE 3's turn and started to fire. BLUE 2 dove toward the MIG and fired at him. BLUE 4 turned right and crossed behind BLUE 3 and the MIG, firing at a high angle off and under heavy g load. The MIG was driven off by BLUE 4, but not before he scored hits on BLUE 3's right flap. A second MIG attacked BLUE 4 and shot up his vertical stabilizer. BLUE 4 broke right as the MIG was shooting. At the same time BLUE 1 turned into the MIG firing 150 rounds before his gun jammed, and the MIG disengaged. Meanwhile, BLUE 2 was under attack but was able to evade the MIG by selecting afterburner and diving away.

8. ORDNANCE

	<u>No. Fired/No. Hits</u>		<u>Remarks</u>
	<u>Cannon</u>	<u>23mm</u>	
BLUE 1	150/0		Fired on MIG attacking BLUE 4; gun jammed after 150 rounds
BLUE 2	1 burst/0		
BLUE 3	0/0		
BLUE 4	1 short burst/0		Snapshot at MIG on BLUE 3
	<u>Cannon</u>	<u>23mm</u>	<u>Remarks</u>
MIG 1			Fired cannon causing damage to BLUE 3's right flap.
MIG 3			Fired cannon causing damage to BLUE 4's vertical fin.

MIGs also fired on BLUE 2 in two instances and on BLUE 1 in one instance.

9. EQUIPMENT PROBLEMS

BLUE 1 - Gun jammed after firing 150 rounds.
 BLUE 2 - Pitch mechanical advantage shifter motor out. This was known before takeoff but BLUE 2 assumed he would not be going over 540 knots.

10. AIRCREW COMMENTS

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 2	1400	550	80	Had experience in F-86 and F-100. Has always been in TAC. Has air combat maneuver training in F-86 and F-100. The only ACM training in F-105 was non-scheduled training within the flight. Most of F-105 ACM was due only to squadron initiative. Was qualified on the DART.

Comments on this Encounter

BLUE 2: Has read MIG-17 flight manual at 7th AF which helped to develop jinking escape maneuver since MIG had airspeed limit and needs 3-4 second tracking time.

In post-flight briefing decided that flak suppression aircraft should bomb with strike aircraft rather than split up and lose flight integrity. Was set up for bombing required three switch changes to go to air-to-air mode.

11. DATA SOURCES

Project Interviews: BLUE 2, Dec 66.

Letter: BLUE 4, 2 Mar 67.

Messages, Reports:

7AF 2221518Z Aug 66 DOCO 24595 Aug 66 OPREP-3
 7AF 221534Z Aug 66 OPREP-4
 7AF 222250Z Aug 66 DIO 30284 Aug 66
 USAF Air Staff Box Score

12. NARRATIVE DESCRIPTION

BLUE Flight was on a strike mission, JCS Target 51, in Route Package VI-A. They were the last flight into the area and saw the IRON HAND flight on ingress. However, they were unable to locate the target, due to flooding in the target area; therefore, BLUE Flight elected to interdict a road near the assigned target and had not yet rejoined in formation. BLUE 1, 3 and 4 dropped on the road but BLUE 2 was carrying two CBU 24s which he did not drop. He was staying high to use them for flak suppression in the target area. All of BLUE Flight was between 10,000 and 12,000 ft heading NW at between 500 and 550 knots. BLUE 2 and BLUE 3 were about line abreast with about one mile lateral separation, with BLUE 2 on the right or east side. BLUE 4 was flying in the same direction but SW of them about four miles.

BLUE 3, at 21°15'N/105°47'E, heading 320° at 11,000 ft and 550 knots saw a MIG-17 at his 6 o'clock position, 3000 ft range. He called out the MIG and broke down and to the left.

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Event II-38

BLUE 2 at 21°16'N/105°48'E, heading 315° at 10,000 ft heard the MIG call by BLUE 3, rolled inverted and saw the MIG under him and off to the left. The MIG was at about 8000 ft altitude, 4000 ft behind BLUE 3 and shooting. BLUE 2 then went into a steep dive to the left and fired a "snapshot" at the MIG, overshot, pulled out at 4000 ft altitude and turned back north. Meanwhile, BLUE 3 was turning left with the MIG following around the turn, shooting and scoring hits in his right flap.

As BLUE 4 pulled off his bomb run he saw a MIG-17 closing on BLUE 3 from BLUE 3's 7 o'clock. BLUE 4 was higher than BLUE 3 and BLUE 4 turned right into BLUE 3 and the MIG. As they passed in front of BLUE 4 at 21°12'N/105°44'E at 2000 ft altitude, BLUE 4 fired a short burst at a high angle off under heavy g load. BLUE 4 pulled up just over the top of the MIG and as he did, he observed two MIG-17s at his 7:30 o'clock. He then rolled and broke left and down at over 500 knots, pulled up from the deck and lost them. However, a BLUE 4 saw the MIGs making a pass at BLUE 1 and BLUE 2.

The MIG disengaged from BLUE 3 after BLUE 4 made the firing pass at him.

BLUE 2, now heading 320° at an altitude of 4000 ft observed a MIG-17 on his tail (6 o'clock), approximately 3000 ft. BLUE 2 selected afterburner, unloaded and continued heading NW, while jinking, thus evading the MIG. The evasive maneuver consisted of a rapid roll and a quick pull to two to three g's then off to 1/2 g. He knew the MIG had no missiles. The MIG fired at BLUE 2 but scored no hits. (This may or may not have been the same MIG who hit BLUE 3).

When the MIGs were called, BLUE 1 was at 10,000 ft in a right turn at 21°10'N/105°50'E heading 300°. At the call BLUE 1 descended on down with BLUE 4, and was to the right, behind and above BLUE 4. BLUE 4 observed another MIG-17 at 6 o'clock and broke right and down. The MIG moved to the inside of the turn, fired and hit BLUE 4 in the vertical fin knocking six inches off the top.

BLUE 1, who was at 5000 ft heading 320° at 21°17'N/105°43'E breaks left and down firing at the MIG who was firing at BLUE 4, forcing the MIG to disengage. BLUE 1's gun jammed after firing 150 rounds. BLUE 1 then observed a MIG at his 6 o'clock position 3000 ft aft and firing. BLUE 1 went to 100 ft AGL and egressed at Mach 1.0.

All BLUE Flight continued to egress at a high rate of speed. BLUE 3 at 21°19'N/105°45'E observed four more MIGs, one at 6 o'clock, low, at 4000 ft altitude; one at about 7 o'clock, low, at 4000 ft altitude; and two at 8 o'clock, high, at approximately 10,000 ft altitude. However, these MIGs were not engaged and it is not known if they saw BLUE Flight at this time. BLUE Flight joined at approximately 21°55'N/105°06'E.

MIGCAP of F-104s were available but they were orbiting too far north of the target area to see the MIGs. MIG calls were given by BLUE Flight but apparently the CAP flight did not receive the calls as they did not respond.

Despite a few contacts of Firecan radars during the earlier part of the ingress, the last 20 miles into the target was free of Fansong contacts and except for some sporadic firing, flak. Even in the pop-up to attempt to acquire the primary target, no flak or SAMs were observed. While searching for the road to bomb, no flak was observed.

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RED BARON EVENT 11-38 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	BLUE 1, 3, 4 just bombed target. B2 had two CBU-24s Fuel 8000 to 10,000 lb	B1 11,000 ft, 300°, 550 kt; B2 10,000 ft, 315°, 550 kt; B3 11,000 ft, 330°, 550 kt; B4 11,000 ft, 330°, 550 kt; B3 saw one MIG-17 at his 6 o'clock	Had just come off target - not yet rejoined B2. Still had two CBU-24s. Was saving for flak suppression		One MIG 3000 ft behind B3	
T ₁	Same B2 at 1-1/2 g	B3 breaks left and down into MIG 1. B2 sees M1 left and below set up the click-pit rolls inverted and dives on M1, fires and misses. Leveled at 4000 ft. B2 did not use afterburner. B2 overshoot, was level with MIG		B3: "Get him off my tail." B2: "I see him. I am coming in."	One MIG shooting at B3, scoring hits in the right flap. MIG pulls up and to the left	No hit observed from B2's firing B2 had to: (1) shift radar mode to air-to-air by pushing a button. (2) rotate weapon mode selector two clicks to guns-air position. (3) depress action - reject button.

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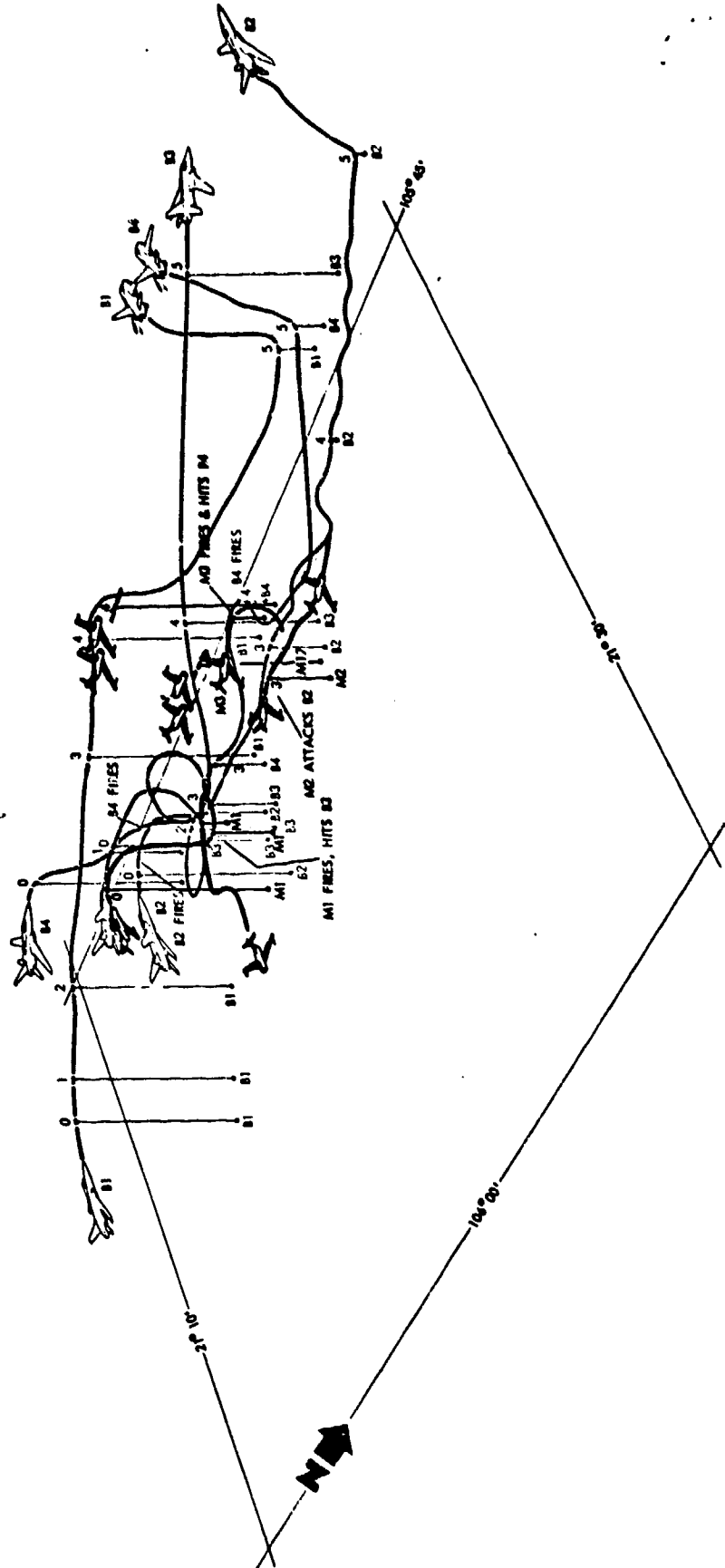
RED BARON EVENT 11-38 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₂	Same B3 damage to right flap.	B4 turns into B3 and M1 and crosses behind them and fired with no hits observed. B4 pulled up over M1 and saw two more MIGs at 7 o'clock continued left and down at over 500 kt. pulled up from the deck and lost them.			M1 disengaged after B4 made a firing pass.	It is not known where M1 went. However, he may have switched to B2 after B4 fired on him. B4 was forced into a high angle pass - fired one short burst under heavy g load.
T ₃	Same Jettisoned CBU-29s	B2 level at 4000 ft 320°. MIG-17 at his 6 o'clock, 3000 ft aft. Went afterburner. Jinked and egressed to 21°55'N/105°43'E. B4 saw MIG at 62's 6 o'clock after rolling out of left turn heading 315°.	B3 had completed 360° and heading 320°.	B4 said, "He is on you now, 2."	MIG-17 trying to close on B2. MIG closed to 500 ft firing.	This MIG-17 may or may not be the same one who broke off B3 - MIG disengaged when B2 went afterburner - tried to drop ordnanc armed.
T ₄	Same	B4 has MIG at 6 o'clock. Breaks right and down. B1 is above to the right and behind. Breaks left and down and fires on the MIG who disengaged. B3 saw four MIGs, one low 4000 ft 6 o'clock, one low 7 o'clock, two high 10,000 ft 8 o'clock. MIG on B1.		B4 called, "MIG on my tail."	MIG firing on B4 scoring hits in the vertical stabilizer. B2 loses MIG. MIG 3000 ft behind	B1 fired 150 rounds of 20mm when gun jammed. He did not hit the MIG. B2 finally jettisoned ordnance by using master panic button. Flak fired at B2 on egress.
T ₅	Same B4 damage to vertical stabilizer.	BLUE Flight egress area.				Flight egresses to 21°55'N/105°06'E.

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Event II-38



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Aircraft Involved: One F-105F and one F-105D vs three MIG-21s

Result: No damage

Vicinity of Encounter: 21°20'N/107°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 9 September 1966/0900H

BLUE Flight was 60 n mi northwest of Hanoi on an IRON HAND mission departing the target area. BLUE 3 and 4 had left the target earlier due to low fuel.

2. MISSION ROUTE

Unknown. Egress was east to the Gulf of Tonkin.

3. AIRCRAFT CONFIGURATIONS

Unknown. WILD WEASEL aircraft in lead (F-105).

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	<u>BLUE 1 and 2</u>	<u>MIG 1, 2, and 3</u>
<u>Airspeed:</u>	425 kt	Unknown
<u>Heading:</u>	090°	About 100°
<u>Altitude:</u>	6000 ft	About 6000 ft

Formation: BLUE 2 on right side in tactical formation.

MIGs silver; no markings seen. No radar return on F-105 vector box; no missiles observed; no external stores observed.

5. INITIAL DETECTION

BLUE 2 noticed three MIG-21s at 6 to 7 o'clock high and 2000-3000 ft out while 37mm was exploding at 3 o'clock and in front of BLUE 2. No indication of MIGs from vector box. No MIG warnings were heard.

6. ACTION INITIATED

BLUE 2 called for a left break, and BLUE 1 and 2 broke left and down. BLUE 1 and 2 jettisoned ordnance.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 broke down and left, and MIG 1, 2 and 3 followed BLUE 2. BLUE 2 leveled at 2000 ft. BLUE 1 says, "MIGs behind you, break right." BLUE 2 breaks right and down to the deck. Evades MIGs and exits to the east. About one minute later BLUE 1 sighted a MIG in front of him and above. BLUE 1 closed and fired 600 rounds 20mm in two separate bursts. No hits observed. MIG 4 started right turn. BLUE 1 returned to the deck and exited to the east. No damage. BLUE 1 and 2 exited to the water and refueled.

8. ORDNANCE

BLUE 1 expended 600 rounds of 20mm in two bursts.

MIG 1, 2 and 3 fired at BLUE 2; no hits.

BLUE 2 states he was sure the shells were airbursts and were from MIGs (white puffs of smoke).

9. EQUIPMENT PROBLEMS

None noted.

10. AIRCREW COMMENTS

	<u>Total Hours</u>	<u>105 Hours</u>	<u>Combat Missions</u>
BLUE 1 (Back)	2000	300	50

BLUE 2 - MIGs were believed to be under GCI control. Visibility was bad.

11. DATA SOURCES

Project Interviews: BLUE 1 (Back), 9 March 1967

Messages, Reports: PACAF 17 0255Z DOCCO 064 Sept 66; 7AF 09118Z DOCCO 25649 Sept 66; CINCPAC 170246Z Sept 66; 7AF 090933Z Sept 66 DOCCO 25259 OPREP-3; 7AF 091251Z Sept 66 DOCCO 25308 OPREP-4

Letters: BLUE 1 Front, Mar 67
BLUE 1 Back, Mar 67
BLUE 2 Front, 22 Mar 67

SECRET

Event II-39

12. NARRATIVE DESCRIPTION

BLUE Flight was on an IRON HAND mission. BLUE 3 and 4 left due to Bingo fuel. BLUE 1 and 2 were out bound from the target heading 090°, at 6000 feet. BLUE Flight was in a tactical formation with BLUE 2 on the right wing. BLUE 2 saw white puffs of smoke off his right wing and ahead; he then saw three MIG-21s who were approaching from 6-7 o'clock high, 2000-3000 feet away, tracking and firing.

BLUE 2 called a left break and the flight broke left and down and jettisoned ordnance. After about 90 degrees of turn, at 2000 feet, BLUE 2 and all three MIGs had overshot BLUE 1 and were at his 3 o'clock position. The MIGs were still in trail of BLUE 2 at 2000 ft altitude and 2000 ft distance, firing at BLUE 2.

BLUE 1 then called for BLUE 2 to execute a right break which he did, with the MIGs following BLUE 2 in the break BLUE 2 descended to the deck in afterburner and accelerated to Mach 1.2 heading east toward the water. While the MIGs continued to follow, they fell behind and were lost from sight. BLUE 2 then headed to the Gulf of Tonkin for refueling.

During BLUE 2's break back to the right, BLUE 1 continued in a left turn but lost sight of BLUE 2 and all three MIGs as they disappeared behind the hills on the ridge line. BLUE 1 then reversed and followed down the same valley at 100 feet AGL, 650 kts. About one minute later, at 0903H, BLUE 1 sighted one MIG-21 at his 12 o'clock position about 5000 feet range. Both BLUE 1 and the MIG were heading approximately east with the MIG at 2000 feet altitude. The MIG did not initially see BLUE 1 and was apparently looking for BLUE 2. BLUE 1 pulled up behind the MIG until he had closed to about 2500 feet and fired one burst scoring no hits. BLUE 1 then closed to 1000-1500 feet range and fired another burst again with no hits. The MIG broke hard left, indicating to BLUE 1 that he had been seen. BLUE 1 then rolled off to the right and accelerated away to the east for egress. No hits were received by BLUE 1 or 2.

The F-105s were never warned of the presence of the MIG-21's from any radar vector gear. Due to the low altitude of operation, the EC-121(BIG EYE/Ethan Alfa) orbiting at 20°N/107°E contained no radar plots of this engagement.

At refueling BLUE 1 had 1000 pounds of fuel.

SECRET

SECRET

Event II-40

Aircraft Involved: Three F-105s vs an
unidentified aircraft

Result: Sighting only

Vicinity of Encounter: 20°50'N/107°15'E to
21°00'N/107°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 11 September 1967/unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	<u>BLUE Flight</u>	<u>Bogeys</u>
<u>Altitude:</u>	19,000 ft	1,000 ft
<u>Heading:</u>	010°	Unknown

5. INITIAL DETECTION

No MIG warnings. BLUE Flight saw bogey. Slant range approximately 15 n mi.

7. SITUATION DEVELOPMENT

No further sighting. Oriental radio chatter heard on 253.5 UHF frequency in normal tone; two voices. Signals appeared to originate in Red River delta area.

11. DATA SOURCES

Messages, Reports: 388th OPREP-4/238, 11 September 1966.

12. NARRATIVE DESCRIPTION

After BLUE Flight hit the coast they observed unidentified aircraft paralleling their course between 20°50'N/107°15'E to 21°00'N/107°20'E.

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Aircraft Involved: Four F-105s vs two Mig-17s
Result: No damage
Vicinity of Encounter: 21°13'N/106°10'E
21°12'N/106°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 September 1966/1643H and 1647H (approximately)

Four F-105s (BLUE flight) on a flak suppression mission as part of a strike against the Dap Cau Railway Bridge. The flight had hit the target and was egressing.

2. MISSION ROUTE

Takeoff from Korat refuel on Brown Anchor over the Gulf and ingress over the mountains. Therefore, ingress and egress was north of Haiphong.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

- 2 450-gal tanks
- Expendable CBU
- No ECM pods
- Camouflage paint

MIG-17 MIG 1, 2

- Silver color
- 1 missile under right wing

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear with visibility 10 miles.

	<u>BLUE 1, 2</u>	<u>BLUE 3, 4</u>
Altitude:	2000 ft AGL	3000 ft AGL
Heading:	095°	092°
Speed:	500 KTAS	500 KTAS
Fuel State:		Approx. 9000 pounds

Flight Formation:

In a type of staggered string on trail position with BLUE 1 and 2 in reasonably close but BLUE 3 and 4 were strung out over several miles farther back and did not have visual contact.

5. INITIAL DETECTION

BLUE 1 had finished a right turn to 095° after pulling off a run on the target. Two MIG-17s were detected at BLUE 1's 6 o'clock position 600 yards behind but no firing was observed.

6. ACTION INITIATED

BLUE 1 accelerated to 600 kts and 500 ft AGL while jinking and the two MIGs broke off contact heading north.

7. SITUATION DEVELOPMENT

BLUE 2¹ subsequently acquired two MIG-17s at 2 o'clock at 5 miles range and attacked but his gun jammed. BLUE 3 and 4 were later attacked by two more MIGs.

8. ORDNANCE

(No. fired/No. hits)

	<u>Cannon</u>	<u>Remarks</u>
BLUE 2	1/0	Gun jammed due to part failure.
MIGS 3, 4	1/0	Fired at BLUE 3 and BLUE 4

9. EQUIPMENT PROBLEMS

BLUE 2 - gun malfunction

¹The OPREP-3 and the RED BARON interview conflict, in that the OPREP-3 says BLUE 2's gun jammed and that later BLUE 3 and 4 were attacked by MIGs. The interviewee claimed to be BLUE 4 and that while he attacked 2 MIGs and his gun jammed, BLUE 1, 2 and 3 never saw MIGs and he was never attacked. The reconstruction assumes that the interviewee was BLUE 2 (since it is judged unlikely that two such occurrences could happen on the same day) and he never saw BLUE 1 during egress.

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 2	2800	950	6	Background was all TAC. Fighter Weapons School graduate.

Comments on this Encounter:

Too many switches to throw to go from bombing mode to a full computing air-to-air sight.

High speed at low altitude of the F-105 was a good asset.

The enemy pilots were poor.

There were MIG days and SAM days. The generalized MIG warnings were indicative since if MIGs were up, then SAMs were not likely.

11. DATA SOURCES

Project Interviews: BLUE 2, 17 January 1967
Messages, Reports: 388TFW OPREP-3, 14 September 1966, PINNACLE/308
 7AF DAI 142335Z, September 1966 DIO 30050
 7AF OPREP-3 142022Z, September 1966 DOCO 25526
 7AF OPREP-4 141737Z, September 1966 DOCO 25527
 7AF OPREP-4 142024Z, September 1966 DOCO 25532

12. NARRATIVE DESCRIPTION

BLUE flight had delivered its flak suppression ordnance and was pulling off the target. The flight was spread out and receiving quite a bit of flak.

After hitting the target, BLUE 1 finished a tight turn to a heading of 095°, he was at 500 KTAS and 2000 ft AGL. At this time he was jumped by two MIG-17s. The MIGs were first detected at 6 o'clock 600 yards behind. No firing by the MIGs was observed. BLUE 1 accelerated to 600 KTAS and 500 ft AGL while jinking, and the MIGs broke contact by turning north.

As BLUE 2 pulled off the target he saw two MIG-17s and called them out. The MIGs appeared to be after the rest of the flight (although BLUE 2 did not remember seeing any other flight member at this time). The MIGs appeared at 2 o'clock at 5 miles, level heading in the same direction as BLUE 2. BLUE 2 closed on the MIGs who were flying straight and level and did not appear to be aware of his presence. BLUE 2 caged the sight, went to guns/air, and then went to search and attack in order to get a computing sight. He did not have an analogue because he was inside of break away range. At 2000 ft range he hit the afterburner and closed to 1000 ft at dead 6 o'clock. The MIGs were in fairly close formation with the wingman 500 ft out in a typical fighting wing. Each MIG had one missile halfway out on the right wing. BLUE 2 overled MIG 2 and attempted to let the bullet steam wipe through him on a quick burst and then intended to switch to the lead MIG.

After squeezing the trigger, the gun fired about 6 rounds and stopped firing due to a shear pin failure.

The MIGs then lit their afterburners and executed a lazy chandelle. BLUE 2 rolled off jettisoned his stores, passed out in front of them and egressed on the deck. The MIGs did not follow.

All during BLUE 2's attack on the MIGs he was receiving 85mm fire, in barrage-type bursts.

After BLUE 2's encounter, BLUE 3 and 4, at 21°12'N/106°35'E, heading 092°, 500 KTAS at 3000 ft AGL, observed two MIG-17s (MIG 3 and 4) coming from the north, and falling in at BLUE 3 and 4's 6 o'clock position. BLUE 3 and 4 descended to the deck in afterburner and pulled away from the MIGs, who were able to close to no more than 900 yards and then gave up the chase. Although the MIGs fired, no hits were received. BLUE 3 and BLUE 4 did not engage due to fuel state.

BLUE flight did not receive any MIG warnings. In this period of time a new MIG warning code was initiated. In addition to the geo-ref coordinates (e.g. AG-4 or Alfa Golf) a code was called, giving the base that the MIGs departed from and three key areas of MIG location called Little, Small and Big Box.

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Event II-42

Aircraft Involved: Four F-105Ds vs three MIG-17s

Result: No damage

Vicinity of Encounter: 21°20'N/106°10'E

1. PRIMARY MISSION

Date/Time: 14 September 1966/1636H

Four F-105D aircraft (BLUE Flight) on a strike flight against the Dap Cau Highway Bridge 15 n mi northeast of Hanoi. This was one flight of four attacking the bridge and other flights were also operating in the area, some ahead and some behind, including an F-4 flight.

2. MISSION ROUTE

Korat direct to Brown Anchor east coast of North Vietnam west along the ridge line into the target. The egress route was the reverse of the inbound route. See Figure 1 for mission route.

3. AIRCRAFT CONFIGURATION

BLUE 1, 3 and 4

2 3000-lb bombs
1 650-gal centerline tank
1000 rounds 20 m.m. ammo

BLUE 2

2 CBU-24s
1 650-gal centerline tank
1000 rounds 20 m.m. ammo

MIG 17

Ordnance unknown
Silver color (did not see markings)

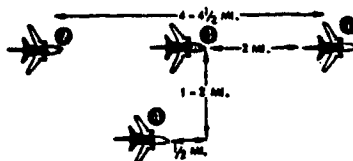
4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered thunder storms. 2-3 miles visibility but clear in the target area.

	BLUE			BLUE 2
	1	3	4	
<u>Altitude:</u>		4500 ft		800-1000 ft
<u>Heading:</u>		090°		090°
<u>Speed:</u>		550 KIAS		550 KIAS
<u>Fuel State:</u>		Unknown		Unknown

Flight Formation:

Flight was in a right turn strung out, lead aircraft in front and BLUE 3 and 4 cutting off on the inside to join up. See sketch.



5. INITIAL DETECTION

BLUE Flight was in a right turn. BLUE 1 sighted three MIG-17s heading east. Two MIGs were on BLUE 3 and one MIG at BLUE 4's 6 o'clock position. The flight had not received any MIG warnings prior to this.

6. ACTION INITIATED

BLUE flight accelerated and continued to turn to egress heading.

7. SITUATION DEVELOPMENT

The MIGs pursued BLUE flight for about two minutes, but never approached closer than 5000 ft. During egress BLUE 2 attempted to attack one of the MIGs but could not attain position. BLUE 4 was shot down by ground fire after the MIGs broke off but was rescued.

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8. ORDNANCE

No ordnance expended.

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	4000	900	Unknown	Considerable fighter experience F-86, F-100, F-105, F-9, F-11.
BLUE 2	400	300	75	Completed F-105 gunnery school at Nellis. This was his first assign- ment.
BLUE 3	2600	650	70	
BLUE 4	Unknown	Unknown	26	

11. DATA SOURCE

Project Interviews: BLUE 1, 16 March 1967
BLUE 2, 17 February 1967
BLUE 3, 6 January 1967

Messages: 7AF 151718Z, September 1966 DOCO PASTEL NR 106
388th TFW OPREP-3 PINNACLE 317
7AF 142335, September 1966 DIO 30450

12. NARRATIVE DESCRIPTION

BLUE flight had just pulled off from their bombing run on the Dap Cau Highway bridge and were in a right turn joining up about 4500 ft, altitude 500-550 KIAS. BLUE 1 was in front followed by BLUE 3 and BLUE 4. BLUE 2, with flak suppression ordnance, had hit a flak site about 2 miles north of the target and was trailing BLUE 1 by 4 to 4-1/2 miles and BLUE 3 and 4 by about 2 miles. BLUE 1 saw three MIG-17s attacking from the west heading 090° and alerted the flight. The MIGs came out of the sun and two attacked BLUE 3 from his 6 o'clock and 8 o'clock while the third attacked BLUE 4. When the MIGs were observed the flight was in the vicinity of 21°20'N/106°10'E heading 090° and BLUE 1, 3 and 4 were at 4500 ft and 550 KTAS. BLUE 2 was about 800-1000 ft AGL. The MIGs were at approximately the same altitude as BLUE flight.

The MIGs were also seen by BLUE 2 who was trailing the rest of the flight at 800-1000 ft AGL. He called them out but the rest of the flight had already seen the MIGs.

BLUE 1 kept the MIGs and the rest of the flight in sight, while egressing. The egress was made at low altitude and high speed with horizontal jinking, BLUE 1 observed the two MIGs break off BLUE 3. BLUE 1 also observed the MIG break off from BLUE 4.

BLUE 2, after calling the MIGs and seeing none on himself, cleaned off the in-board pylons and accelerated in afterburner in an attempt to attack one of the MIGs that was at 8 o'clock high on BLUE 3, and about one mile away from BLUE 3. BLUE 2 started to close on the MIG which was at about 5000 ft altitude (about 1000 ft higher than BLUE 3) and about 2 miles away. BLUE 2 climbed and closed on the MIG until the range was about a mile. The MIG then started a left hand hard turn (not a break). BLUE 2 who had come out of burner at this time had a good closure rate and started to turn with the MIG. The MIG was about 5000 to 6000 ft out and BLUE 2 was turning left at about 3 gs. The MIG turned rapidly. BLUE 2 ended up at about 110 degree angle off from the MIG. It became evident that the MIG and BLUE 2 would end up in a head on pass, so BLUE 2 broke off to the right. BLUE 2 had passed just ahead of BLUE 3 since BLUE 2 had used afterburner. BLUE 3 was at this time descending in a slight left turn. BLUE 2, in turning right, went under BLUE 3's nose at a track crossing angle of 90°, about 3000 ft in front. As soon as BLUE 2 crossed under BLUE 3's nose he reversed and climbed back to the left bleeding off airspeed to sandwich the remaining MIG on BLUE 3. As BLUE 2 picked up BLUE 3, he saw that the MIG-17 had broken off and was headed back toward Kep.

BLUE 3 heard BLUE 1's initial call. As BLUE 3 looked back to pick up BLUE 4, he saw a MIG at 6 o'clock to himself at a slightly lower altitude and about 4000 ft range. BLUE 3 accelerated slightly. BLUE 3 also saw BLUE 4 with a MIG-17 at BLUE 4's 6 o'clock. The MIG was a mile or so aft of BLUE 4.

BLUE 3 had been looking aft to observe BLUE 4 and on looking right he saw a silver MIG-17 at his 3 o'clock. The MIG is 4000 to 5000 ft out and within 1000 ft of BLUE 3's altitude. BLUE 3 turned slightly into the MIG and when the MIG responded BLUE 3 dived away jinking to the left in afterburner. BLUE 3 at this time still retained two pylons and a centerline tank. During the acceleration and descent to 2000 ft, BLUE 3 crossed BLUE 2's path, but never saw the MIG-17 which BLUE 2 was engaging. BLUE 3, despite his

SECRET

Event II-42

flight toward the MIG, did not set up the sight for guns air. After some distance, BLUE 3 went back to 5000 ft and continued to egress.

The MIG on BLUE 4 was a mile or more away, sliding into a 6 o'clock position. BLUE 4 was instructed to break right and descend in afterburner, continuously jinking. BLUE 4 did this and after traveling some distance lost the MIG while heading in a southeast direction. BLUE 4 was directed by BLUE 1 to turn back to the northwest in order to rejoin the rest of the flight.

BLUE 1, 2, and 3 joined and about half way to the coast they made a 360 orbit to pick up BLUE 4. Due to the speed of BLUE 4, he passed the rest of the flight so that when contacted on the radio, a DF reading put him east of the rest of the flight. BLUE 1, 2 and 3 then climbed and also started egressing at 600 kts to catch BLUE 4.

BLUE 4 pulled up just before reaching the coast and BLUE 1 saw him get hit by flak (57mm). Half of BLUE 4's right wing was knocked off and the engine was damaged. BLUE 4 ejected in the water close to land and the rest of the flight provided RESCAP. BLUE 4 was subsequently recovered.

BLUE 1 noticed that the flak stopped just as he was rolling in on the target although it was surmised that this was due to the presence of MIGs.

SECRET

EVENT: 11-42 SUMMARY

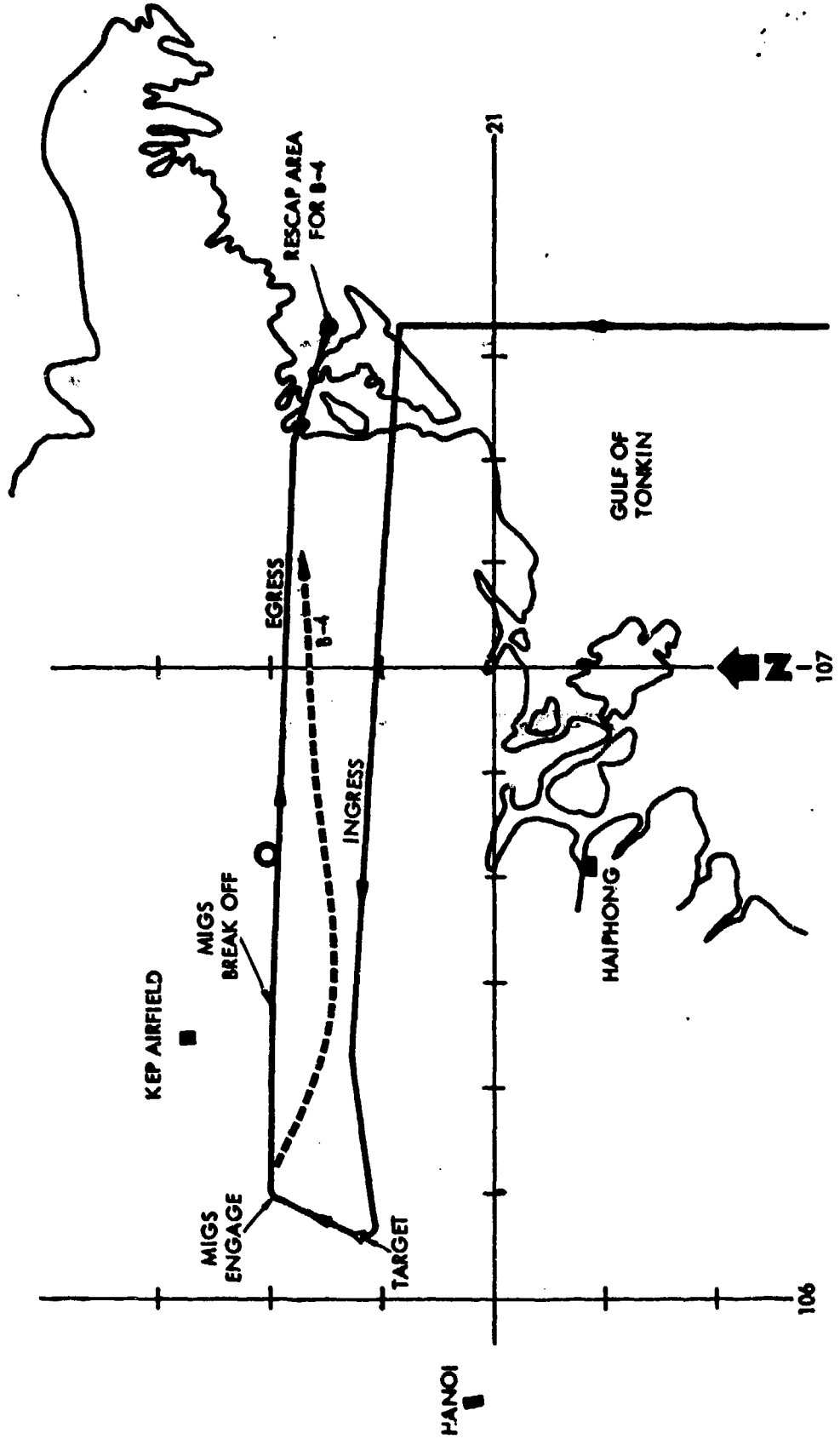
Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	550K B1, 3, 4 at 4500' B2 at 800-1000' Flight in right turn.	BLUE Flight starts to accelerate and descend with constant S turns to keep the MIGS from tracking. B1 continues to egress B2 accelerates in A/B after the MIG at 8 o'clock high to B3 B3 accelerates slightly B4 dives away in A/B		B1 sees MIGS and calls to the flight. B2 also sees the MIGS and calls to the flight. B4 is called to descend and accelerate.	3 MIG-17s attack BLUE Flight. MIGs coming from out of the Sun, heading East at about 5000'. MIGS are about 1 mile away from B4 and B3. 1 MIG stayed with B4 and 2 MIGs go after B3. One at 8 o'clock at one mile away. at 6 o'clock about 1 mile away.	All members of the flight saw the MIGS
T ₁	B3 600K 5000'	B3 sees a MIG at 3 o'clock, 5000' out. B3 turns in toward the MIG and when the MIG reacts, dives away.			M2 at about 5000' alt.	
T ₂	B2 about 4500' about 600 K	B2 closes to within 1 mile of M1 comes out of A/B and starts a 3g turn to track M1.			M1 starts a hard left hand turn	

RED BARON EVENT II-42 SUMMARY

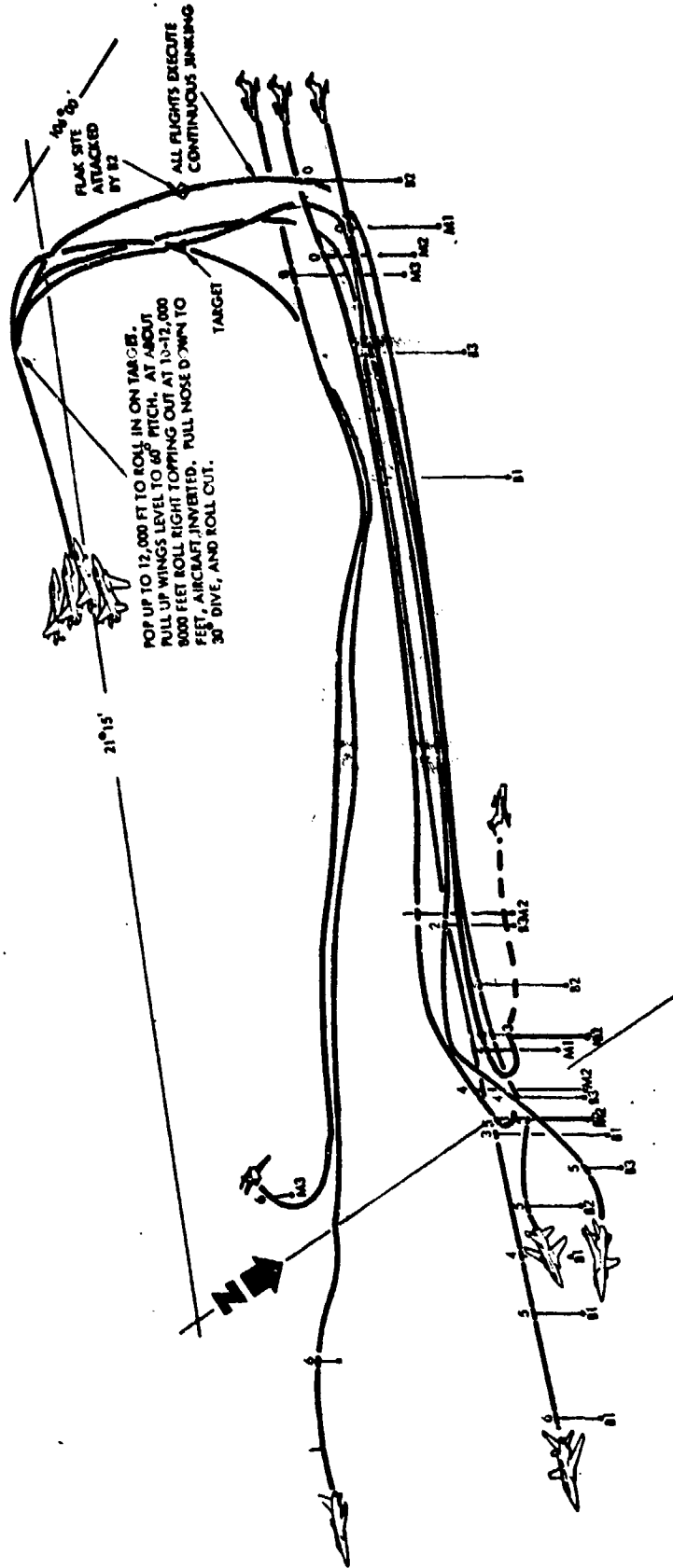
Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T3	B2 at 3g B3 was 110° angle off from MIG.	B2 breaks right and descends away from M1.			M1 has turned until he is heading back toward B2.	
T4	B3 descending away from M1 in A/B. B2 descending away from M2 in A/B.	B2 passes in front of B3, 90° TCA, 3000' away.				
T5	B3 continues on.	B2 pulls up to B1 observes M1 and 2 break off.			M2 breaks off.	
T6		B1, 2, 3 egressing to Join up.		B1 calls B4 that M3 has broken off and for B4 to turn to NW heading.		

SECRET

Event II-42a



SECRET



SECRET

Event II-43

Aircraft Involved: Four F-105s vs two MIG-17s.

Result: Sighting only

Vicinity of Encounter: 21°20'N/106°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 September 1966/1638H

This was a strike mission. Four F-105s (BLUE Flight was inbound to the target Chiang Mai petrol storage.) The IRON HAND support aircraft was leaving the area so BLUE Flight aborted at 21°12'N/106°50'E.

2. MISSION ROUTE

Unknown

3. AIRCRAFT CONFIGURATIONS

BLUE 1, 2, 3 and 4 carried iron bombs. One flight member had two CBU-24s.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Haze, with thunderstorms.

BLUE Flight - 9000 ft AGL at 360°

5. INITIAL DETECTION

BLUE Lead sighted two MIGs at 12 o'clock high (15,000 ft). MIGs were in a hard right turn.

6. ACTION INITIATED

BLUE Flight jettisoned ordnance and evaded.

7. SITUATION DEVELOPMENT

BLUE Flight position now 21°20'N/107°00'E at 4000 ft, heading 122°, when MIGs were again spotted at flight's 8 o'clock position, 5000 AGL. Flight passed through thunderstorms and exited area.

11. DATA SOURCES

Messages, Reports:

388th Wing, OPREP 4/313, 14 Sept 1966

12. NARRATIVE DESCRIPTION

BLUE Flight was inbound to the target. The setting sun in haze dropped visibility, and the IRON HAND support was leaving the target area so Lead decided to abort the mission at 21°12'N/106°50'E. The Flight turned right and at 21°20'N/106°45'E, heading 360 degrees, and at 9000 feet AGL, Lead observed two MIG-17s. The MIGs were at BLUE Lead's 12 o'clock position in the vicinity of 21°30'N/106°45'E, at 15,000 feet, in a hard right descending turn. The MIG wingman was sliding to the outside of the turn.

BLUE 1 called MIGs at 12 o'clock, and the Flight went to afterburner and began a tighter descending right turn.

The MIGs were lost momentarily but were sighted again by BLUE 1 immediately before going through a southern fringe of a thunderstorm. BLUE Flight's position was then at 21°20'N/107°00'E and BLUE Flight was 4000 ft AGL heading 122 degrees. The MIGs were at BLUE Flight's 8 o'clock position at approximately 5000 ft AGL.

BLUE Flight passed through the thunderstorm, jettisoned ordnance (iron bombs and CBUs) and returned to post-strike tankers.

SECRET

SECRET

Event II-44

Aircraft Involved: Three F-105s vs two MIGs

Result: Sighting only

Vicinity of Encounter: 21°00'N/107°37'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 15 September 1966/1555H

2. MISSION ROUTE

Unknown

3. AIRCRAFT CONFIGURATIONS

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

BLUE 1, 2, 3

Altitude:

13,000 ft

Heading:

360°

Speed:

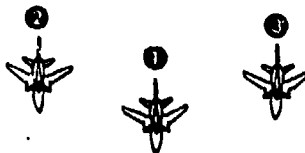
450 kt

Fuel State:

Unknown

Flight Formation:

Finger tip



5. INITIAL DETECTION

Was made on their vector box gear which indicated X-band radar at their 12 o'clock position.

6. ACTION INITIATED

None

7. SITUATION DEVELOPMENT

Unidentified aircraft flew by BLUE Flight and turned to their 6 o'clock position. BLUE Flight then broke right and observed two aircraft two nautical miles behind. BLUE Flight continued turn into possible MIGs and MIGs went into a descending left turn and were lost in the haze at about 2,000 ft AGL.

8. ORDNANCE

BLUE 1, 2, 3

Unknown

MIGs

Unknown

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

Experience

Unknown

Comments on this Encounter

BLUE 1: MIGs could have been F-4s.

Comments from Overall Experience

BLUE 1: F-4s should be briefed on routes to be flown by F-105s and that they call F-105s if they are making identification passes.

SECRET

SECRET

Event II-44

11. DATA SOURCES

Messages: OPRBP-4/237 388TFW 15 Sep 1966

12. NARRATIVE DESCRIPTION

BLUE Flight was inbound to a target at 13,000 feet, location 20°40'N/107°37'E heading 360°, 450 knots when they got X-band indications on their vector at 12 o'clock, strength one ring. The signal became stronger and unidentified aircraft passed above or beneath BLUE Flight. No visual was acquired at this time. The unidentified aircraft did a 180° turn and began closing on BLUE Flight at their 6 o'clock. BLUE Flight broke right and observed two unidentified aircraft approximately 2 nautical miles behind them at their flight level, 13,000 feet. When possible MIG-21s saw BLUE Flight turning into them, they made a hard descending left turn. BLUE Flight continued turn into possible MIGs, and MIGs continued descending left turn to approximately 2,000 ft AGL, where they were lost in haze. Possible MIGs not seen again. The flight leader assumed that the unidentified aircraft were MIG-21s although he admitted they may have been U.S. F-4s.

SECRET

SECRET

Event II-45

Aircraft Involved: Four F-105s vs four MIG-21s

Result: Sighting only

Vicinity of Encounter: 21°09'N/106°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 September 1966/1645H

Four F-105s were on a strike mission on the Dap Cau Railroad and Highway Bridge (21°12'N/106°06'E).

3. AIRCRAFT CONFIGURATIONS

BLUE 1, 2, 3, 4

20mm Cannon (1,029 rounds)
Rest of ordnance unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

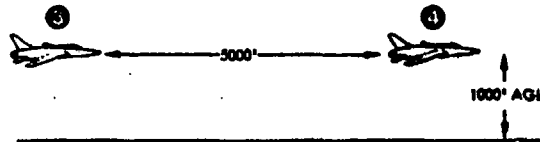
Altitude: 1,000 ft AGL

Heading: 092°

Speed: 551 ktas

Fuel State: Unknown

Flight Formation:



5. INITIAL DETECTION

BLUE-3 visually observed four MIG-21s, 4000 ft to his right and 4000 ft above him in a left turn passing through 060° heading.

6. ACTION INITIATED

BLUE-3 went into afterburner and egressed area.

7. SITUATION DEVELOPMENT

BLUE Flight egressed without further incident.

11. DATA SOURCE

Messages:

7AF, OPREP 3 161947Z Sept 1966 DOCO 25603

12. NARRATIVE DESCRIPTION

BLUE Flight was outbound from the target area heading 092° at 1000 ft AGL, at 550 KTAS. BLUE 3 was 5000 ft behind BLUE 4 when he saw four MIG 21s 4000 ft to his right and 4000 ft higher than BLUE 3 in a left turn, passing 060°. BLUE 3 then selected afterburner and egressed the area jinking at 650 KTAS. MIG-21s did not engage nor follow BLUE 3. No damage to the aircraft or encounter logged and aircraft retreated safely to home station.

SECRET

Aircraft Involved: Four F-105Ds vs two MIG-17s
 Result: No damage
 Vicinity of Encounter: 21°18'N/106°17'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 September 1966/1650H

Four F-105Ds (BLUE Flight) on a strike target (JCS #16 - Dap Cau railroad and highway bridge near Bac Ninh). Aircraft were in a Fluid-4 with BLUE 2 probably on the right. An EB-66C and an EB-66B were on station 21°15'N/105°35'E and an EB-66B was on station at 20°40'N/107°20'E.

2. MISSION ROUTE

Depart Korat AB, Thailand. Exact route is unknown but was over the Gulf, then a 270° heading at 6,000 ft and 540 KTAS east of Hanoi and inbound to target.

3. AIRCRAFT CONFIGURATION

F-105D BLUE 1, 2, 3, 4

- 2 - 450-gal wing tanks
- 4 - CBUs (1 each wing station, 2 center line)
- 1 - gun

MIG-17s MIG 1, 2

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 7-mile visibility, scattered clouds.

	<u>BLUE 1</u>	<u>2</u>	<u>3</u>	<u>4</u>
<u>Altitude:</u>	6000 ft	5500 ft	Unknown	Unknown
<u>Heading:</u>	270°	270°	270°	Probably the same 270°
<u>Speed:</u>	540 KTAS	540 KTAS	540 KTAS	540 KTAS
<u>Fuel State:</u>	Unknown	Unknown	Unknown	Unknown
<u>Flight Formation:</u>				



5. INITIAL DETECTION

Received warning from ETHAN BRAVO at 1645H. At 1648H at 21°10'N/106°15'E, heading 270°, 6000 ft, 540 KTAS observed two missile contrails at 1 o'clock. Received warnings from ETHAN BRAVO at 1650H. At 21°08'N/106°17'E, 1650H, saw two MIG-17s at 10:30 o'clock position approximately 4000 ft alt, 1 to 1-1/2 miles away. BLUE Flight heading 270°, 540 KTAS, 6000 ft alt. MIGs observed visually and called out by flight Lead (BLUE 1). The MIGs were in a right turn passing through 330° at 4000 ft altitude. All flight members saw the MIGs.

6. ACTION INITIATED

BLUE Flight jettisoned ordnance and dropped tanks, broke left into MIGs, and descended slowly. BLUE 2 followed lead. It is unknown as to what BLUE 3 and 4's actions were.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 broke hard into MIG 1 and 2 who were in a right bank passing 330°. BLUE 1 made a quartering head-on pass and fired 66 rounds of 20mm at MIG 1 from a distance of 2500 to 2000 ft out. Engagement was then broken off.

8. ORDNANCE

(No. fired/No. hits)

	<u>20mm Gun</u>	<u>Remarks</u>
BLUE 1	1/0	No hits were recorded by BLUE 1 66 rounds fired.
BLUE 2, 3, 4	None	
MIG 1, 2	None	

10. AIRCREW COMMENTS

Comments on This Encounter

BLUE 1: Caged his gun sight when he first visually spotted MIGs. He did not pursue MIGs after turning on a southerly heading due to the high SAM threat in the Hanoi area where the MIGs were heading.

BLUE 2: I could have gotten a shot at MIG 1 if I'd just been a little bit faster, I flew head on. Our break was tight enough to thwart their pass and he (MIG 1) went about 500 ft or less directly below me. Wingman was pretty far out of position and he passed to my right.

Comments from Overall Experience

BLUE 2: They (MIGs) accomplished their mission, we jettisoned our ordnance. It wasn't a bad decision, we had to be able to turn or they would have gotten a shot. As soon as we dropped ordnance, they took off, which is what they always did. Later on some of the guys got the idea of dumping their tanks to make it look like they dumped their bombs, and then go on to their targets. Tanks are usually empty by then.

11. DATA SOURCES

Project Interviews: BLUE 1 (Lead), 13 Mar 67; BLUE 2, 13 Mar 67

Messages, Reports:

DTG 162356Z Sep 66 7AF Tan Son Nhut AB DIO 30456 Sep 66

Cont. No. C21542/1/NF 161947Z Sep 66 7AF Tan Son Nhut DOCO 25603 Sep 66

Letter from BLUE 2

12. NARRATIVE DESCRIPTION

BLUE Flight was heading 270° at 6000 ft and 540 KTAS enroute to JCS #16. ETHAN BRAVO gave a MIG warning at 1648H at which time BLUE 1 observed contrails at 1 o'clock but unable to identify aircraft. At 1650H again ETHAN BRAVO gave a MIG warning and BLUE 1 observed two MIG-17s (in extended trail) at his 10:30 o'clock position slightly low in a climbing right turn into the formation and passing 330°. Position at this time was 21°08'N/106°17'E. BLUE 1 called the MIGs to the rest of the flight, called for ordnance jettison and a break left into the MIGs. BLUE 2 followed BLUE 1 and jettisoned his ordnance and followed BLUE 1 into a tight left turn. What happened to BLUE 3 and 4 and what action they took is unknown. BLUE 1 then pulled lead on MIG 1 and made a quartering head-on pass firing 66 rounds of 20mm cannon at a distance of 2000 to 2500 ft out. BLUE 1 and MIG 1 then passed each other at the same altitude (about 5000 ft) with 3000 ft approximate separation. BLUE 2 then would have had a MIG 1 but was not fast enough and passed directly over MIG 1 with approximately 500 ft separation in altitude. No hits were observed by either aircraft nor was cannon fire observed coming from the MIGs. BLUE 1 then broke right to reengage and BLUE 2 followed at which time he then saw MIG 2 off his right wing and out of position. Both BLUE 1 and 2 observed MIGs continue their turn to a northerly heading and BLUE 1 and 2 rolled out and themselves headed southerly to 21°04'N/106°21'E and then to 21°07'N/107°33'E.

¹OPREP quotes a southerly heading but considering the location, and interviews, a northerly heading was chosen.

RED BARON EVENT II-46 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 2)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T0	Alt 6000 ft Hdg 270° Speed 500 KTAS	B1 sees two MIGs at 10:30 o'clock, 1 to 2 miles away.	B3, 4 on left.	MIGs called by B1	Two MIG-17s (M1,2) in right turn passing through 330 to 300 degrees. One MIG slightly high and another low. Lower MIG in lead. MIGs about 4000 ft altitude.	B2 saw only one MIG-17. The lower MIG is climbing slightly.
T1	Alt 6000 ft Speed - increasing Breaking left	BLUE Flight jettisoned tanks and ordnance and went to afterburner. B2 sees second MIG (M2) high and to the right less than a mile from M1.		B1 calls jettison ordnance and break left.	Continue to turn right.	
T2	Alt 5000 ft Speed - increasing LH bank	B1 fires at M1, range 2500 to 2000 ft. Quar-tering head-on pass. B2 does not fire.			MIG passes.	B1 fired 66 rounds.
T3	Alt 5000 ft	B1 passes M1 with about 3000 ft lateral separation. M1 then passes below B2 about 500 ft vertical and 200 ft horizontal, head on.				
T4		Flight breaks right. B2 then sees M2.			M2 off to the right 45° from B2, 1 mile away and 1000 ft above B2.	
T5	Alt 5000 ft	BLUE Flight exits			MIGs roll out of turn on a northerly heading.	

Aircraft Involved: Four F-105Ds vs four MIG-17Ds

Result: No damage

Vicinity of Encounter: 21°08'N/106°55'S

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 September 1966/1647H

BLUE Flight (four F-105Ds) were on a strike mission against JCS 16.00 (the Dap Cau inland highway bridge) 21°12'11"/106°05'44". BLUE Flight was the last of several flights that attempted to attack this target on this date. Three of the other flights can be found in Events II-45, II-46, and I-56.

2. MISSION ROUTE

Departed Korat and proceeded over the Gulf of Tonkin to refuel at approximately 19°N/108°E then proceeded north to Isle de Madelene and thence due west on the north side of Haiphong Ridge to the target area. Return by the same route with post-strike refueling.

3. AIRCRAFT CONFIGURATION

F-105D BLUE 1, 2, 3 and 4

- 2 - 3000 lb bombs (one under each wing)
- 1 - Centerline fuel tank and bomb bay tank
- 1062 rounds ammunition - 20mm
- Camouflage paint
- Radar turned off

MIG-17 (with afterburner) MIG 1, 2, 3 and 4

- Camouflage paint
- No guns or ordnance reported

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Good visibility.

BLUE 1, 2, 3 and 4

- Altitude: 3000 ft MSL 500 ft AGL
- Heading: 275°
- Speed: 540 KIAS
- Fuel State: Unknown but not a consideration in this event.
- Formation: Approximate



5. INITIAL DETECTION

Three MIGs initially detected by BLUE 1 Lead against terrain background at the 2 o'clock position, range estimated about "10 miles." Note: See Pilot Comments (Note d).

6. ACTION INITIATED

BLUE Flight assessed the situation as follows:

1. The MIGs were not yet aware of the presence of BLUE Flight.
2. BLUE Flight could not continue to target without permitting the MIGs to attain a favorable 6 o'clock position on BLUE Flight.

On this basis the decision was made to turn and attempt to engage the MIGs from their 6 o'clock.

7. SITUATION DEVELOPMENT

BLUE Flight turned on the MIGs 6 o'clock and closed to a range of 5000 ft when:

1. BLUE 1 sights MIG 4 at 4 o'clock, low range.
2. MIG 3 made an abrupt reversal of flight path toward BLUE Flight.
3. BLUE Flight now broke down and left, and egressed the area.

10. AIRCREW COMMENTS AND EXPERIENCE

Experience

<u>Experience</u>	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>	3200	1200	85	One training firing of a SIDE-WINDER; sixteen gun firings on low targets.

Comments on this Encounter

- a. Attained position to permit effective use of a missile. Missiles were not carried since AIM-9 pylon was a high-drag device that could not be jettisoned. Also the installation and weight decreased the F-105 bomb-carrying capacity.
- b. The radar was turned off since it triggered the radar warning gear. The procedure was for an individual to alert other flight members before turning on radar and then to make only a few sweeps.
- c. Navigation was done by dead reckoning. The doppler was fixed as the flight passed the coast.
- d. The MIGs were seen initially against a terrain background even though camouflaged. BLUE 1 stated that he was able to sight the MIGs due to the fact that he had acquired considerable experience attempting to keep track of camouflaged F-105s which seem to disappear if not continuously observed. However, by looking for movement instead of changes in color they could be detected.
- e. BLUE 1 felt that MIG 4 was an instructor and the other three MIGs were students on a training mission. The presence of BLUE Flight warned by MIG 4.

Comments on Overall Experience

- f. Guns were his best weapon.
- g. The gunsight cameras were bad and the film not exposed correctly.
- h. Camera pods were heavy and created too much drag. Also switching was too complicated.
- i. Would prefer nonreflective silver paint on bottom of aircraft. Blends with sky better than grey or white.
- j. Likes F-4 SPARROW installation since it can always be carried.

11. DATA SOURCES

Project Interviews: BLUE 1, 5 January 1967
Messages, Reports: 7AF 162356Z Sept 66 DIO 30 456 Sept 66
 7AF 161947Z Sept 66 DOCC 25603 Sept 66
 388TFW OPREP 4/257 16 Sept 66
 7AF 161724Z Sept 66 OPREP-4 DOC 02560

12. NARRATIVE DESCRIPTION

BLUE Flight was one of four flights directed against JCS 16.00/616 the Dap Cau railway and highway bridge. Two other flights were F-105 (Events II-45 and II-46) and one was a flight of F-4s (Event I-56). The F-4s were carrying ordnance and at this time had just started accompanying the strike groups. The speed incompatibility, for best cruise between the F-105s and F-4s, made the F-4s short on fuel, consequently the flight timing was important.

By the time BLUE Flight had progressed to the vicinity of the target, the F-4 aircraft which had been scheduled to precede BLUE Flight to the target, was behind the flight. The F-4s had been included with the strike group in order to provide protection but did not do so that day.

BLUE Flight proceeded to the target, staying just below the ridge line in order to protect themselves from SAMs. As they neared the target, three MIG-17s in trail were observed. The MIGs were in a gentle climbing turn. BLUE Flight determined that they could not hit the target without permitting the MIGs to gain BLUE 6 o'clock. Therefore a decision was made to engage the MIGs.

The plan was for BLUE Flight to close on the MIGs from the 6 o'clock position and attack MIGs. BLUE Flight therefore started a climbing left hard turn. The BLUE formation was held and, at a speed of 540 knots, closed fairly rapidly on the MIGs, who continued their right hard climbing turn.

BLUE 1 put his pipper on MIG 3 as BLUE Flight closed to within 5000 ft of MIG 3. The F-105 was equipped with a lead computing gunsight set up for a range of 1500 ft.

At this time BLUE 1 sees a single MIG at 4 o'clock low approaching the flight. BLUE 1 then called BLUE 3 and informs BLUE 3 that he will continue to attack the third MIG and for BLUE 3 and 4 to sandwich the lone MIG between the elements of BLUE Flight. Later playback of WILD WEASEL tapes indicated that BLUE 3 never received this transmission due

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Event II-47

to radio interference. Since BLUE 1 had not asked for confirmation from BLUE 3 he was not aware that BLUE 3 did not understand the role he was to play.

BLUE Flight continued to close on MIG 3 while MIG 4 closed on the flight. MIG 3 suddenly executed a very hard left turn (described as an about-face by BLUE 1) back into BLUE Flight, but lost airspeed in the maneuver.

Due to the position of MIG 3 and 4, BLUE Flight decided to disengage and broke off to the left. BLUE 1 jettisoned everything but pylons while the rest of the flight jettisoned both stores and pylons. MIG 4 stayed inside the turn for a few seconds and then broke off. MIG 1 and 2 made a less abrupt turn than MIG 3 in order to backup MIG 3.

BLUE Flight's turn after the initial break is not made too rapidly since BLUE 2 could not light his afterburner. Consequently, BLUE 2 turn was made in military power. BLUE Flight still stayed together and due to their speed advantage, MIG 3 did not pose a threat.

As the turn was completed the MIGs were lost, but flak is noticed, with 37mm bursts at 3000 ft. The flight leveled off above the flak and proceeded out.

At the time that BLUE Flight became engaged with the MIGs, BLUE 1 heard the F-4s talking and they acknowledged the MIG call that BLUE Flight made. Shortly after that the F-4s announced that they were at Bingo fuel and departed.

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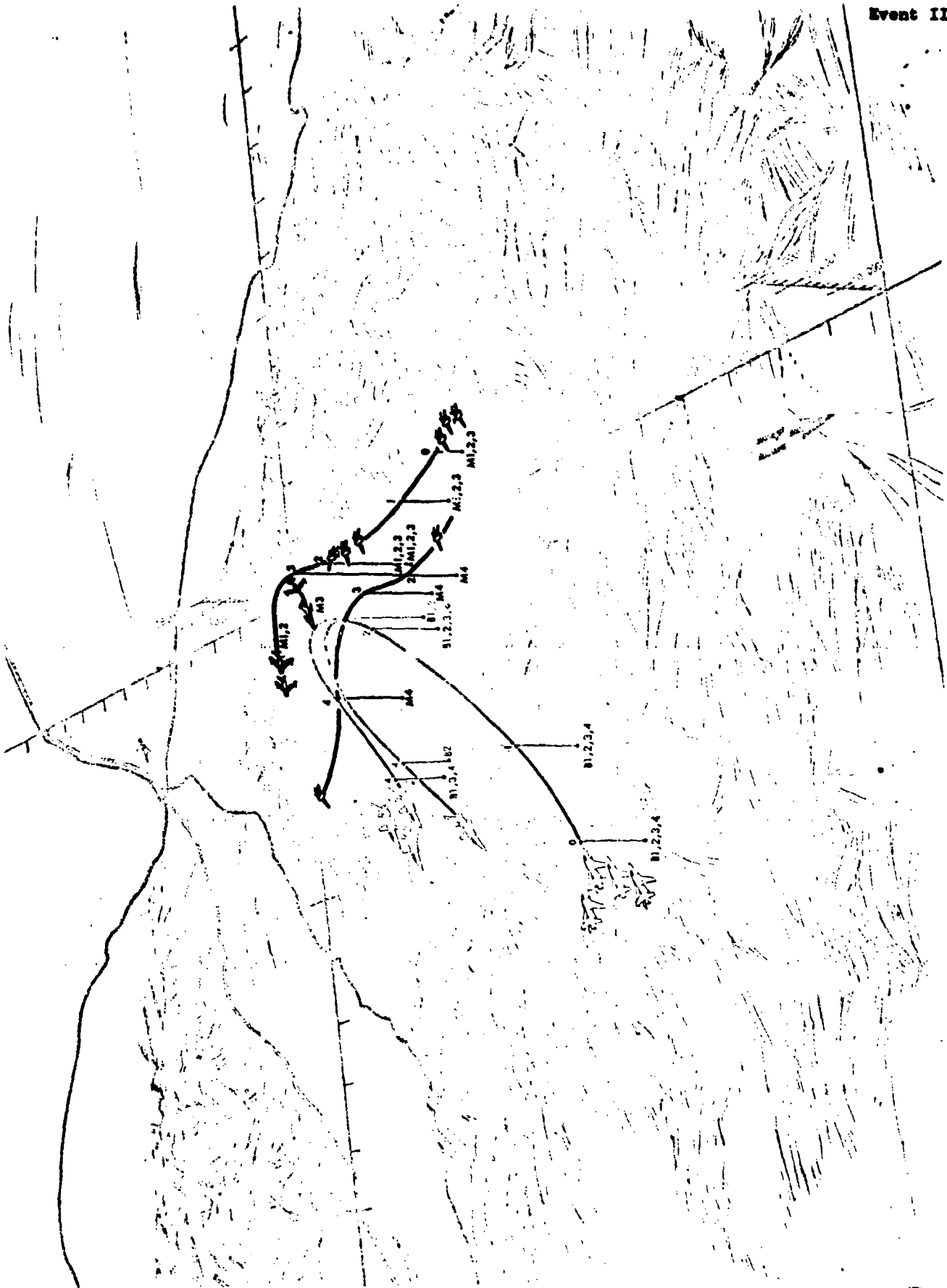
RED BARON EVENT II-47 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	Alt 3000 ft (about 500 ft AGL) Speed 540 KTAS Heading 275° radar off	Lead sights 3 MIG-17 aircraft. Flight starting left turn		B2 calls "MIGs" three times B1 (L) instructs B2 to be quiet. B2 also calls "Bogeys" at 2 o'clock	MIGs in climbing right turn at about 500 ft AGL Speed about 900 knots. MIGs are in trail about 200 ft apart	Decision is made to attack MIGs. Particularly M3.
T ₁	Closing MIGs. In full military power. 540 KTAS 3000 ft Maintaining formation.	Flight starts climb after MIGs. Sets up air-to-air sight			MIGs continuing gentle climbing turn to right MIGs 2500 AGL MIGs now at 11 o'clock	
T ₂	Alt 4000-5000 ft maintaining formation. Velocity 540 KTAS	B1 sights lone MIG closing on flight from 4 o'clock behind and below		B1 calls B3 and announces plan to continue after 3 MIGs and let B3 and B4 sandwich lone M4. B1 does not ask for con-formation		B3 never received the communication since radio transmission was blocked.
T ₃	Range to MIGs - 4000 ft 80° angle off. Velocity 540 KTAS	B1 starts left descending turn starts to light afterburner and then does not. B1, B2 B3, B4 jettison bombs at start of turn. B1 did not clean off pylons. B2 tries to light afterburner and it will not light. B3 and B4 stay with B1 and B2.		B1 calls for break	M3 lights afterburner and breaks back into the flight. M4 at 3000 ft and 4 o'clock. M1 and M2 go into turn. M4 stays inside turn for few seconds and then breaks off.	
T ₄	Descending H = 3000 ft Speed 540 kt	B1, B2, B3, B-4 lose sight of MIGs. Flight returns to coast as they entered			Flak, 37mm, bursts at 3000 ft	

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Event II-47



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Event II-48

Aircraft Involved: Three F-105s vs one MIG-19 and three MIG-7

Result: No damage

Vicinity of Encounter: (1) 21°30'N/107°20'E
(2) 21°33'N/106°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 September 1966/0927H

F-105s on a strike mission, target being railroad bridge (21°33'N/106°30'E).

2. MISSION ROUTE

Departed Korat for Brown Anchor refueling over Gulf of Tonkin. Tanker drop off direct 21°06'N/107°27'E. Direct 21°37'N/106°45'E direct target. Egress by reverse route.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 2, 3, 4

1 gun (1029 rounds full)

MIG

2 unknown 1 MIG-19

Silver in color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear, visibility 7 miles, and haze.

	<u>BLUE</u>	<u>BLUE</u>
	<u>3</u>	<u>4</u>
<u>Altitude:</u>	9000 ft	15,000 ft
<u>Heading:</u>	-110°--	--180°--
<u>Speed:</u>	.9 Mach	-.9 Mach-
<u>Fuel State:</u>	-----	Unknown-----
<u>Flight Formation:</u>	Unknown	

5. INITIAL DETECTION

BLUE 2 saw a MIG-19 with a Red Star on tail at his 5 o'clock position. BLUE 3 visually sighted three MIGs at 5000 ft AGL heading 180°.

6. ACTION INITIATED

BLUE 2 executed a Split-S to 2000 ft. BLUE 3 and BLUE 4 selected afterburner and dove to the deck.

7. SITUATION DEVELOPMENT

BLUE 2: While in split, MIG fired at BLUE 2 who saw cannon fire passing over both sides of wing. When level at 2000 ft and .95 Mach MIG made another pass at BLUE 2, firing his cannon. BLUE 2 lit afterburner and egressed area.

BLUE 3 and 4

Egressed the area without contact.

8. ORDNANCE

BLUE 2, 3, 4	Cannon, None
MIG-19	Cannon, 2/0
MIGs ?	Unknown

9. EQUIPMENT PROBLEMS

Horizontal situation indicator was inoperative.

11. DATA SOURCES

Messages, Reports:

OPREP-3 2171355Z Sept 66 DOCO 25648

COMUSMACV MACOI Soe Z P171252Z Sept 66

FBIS OKINAWA P172845z Sept 66

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12. NARRATIVE DESCRIPTION

Event II-48

BLUE Flight was outbound from the target when BLUE 1 was hit and BLUE 2, 3, and 4 orbited to follow BLUE 1 who impacted the ground. BLUE 3 and 4 then headed toward the coast and lost sight of BLUE 2 whom they thought was following them. BLUE 2 lost BLUE 3 and 4 and was following an inaccurate heading. BLUE 2 was at approximately 15,000 ft and .9 Mach when he saw a MIG-19 at his 5 o'clock position. BLUE 2 then went into a Split-S maneuver. The MIG fired at BLUE 2 during this maneuver and BLUE 2 saw cannon fire going over his left and right wing. BLUE 2 recovered at 2000 ft at .95 Mach. He asked for a DF steer which he received and headed again approximately 180°, 2000 ft and .95 Mach when the MIG again made another firing pass. BLUE 2 then selected afterburner and egressed the area. No damage to the aircraft.

Meanwhile BLUE 3 spotted three MIGs of unknown model and type heading 180° at 5000 ft AGL. BLUE 3 and 4 hit afterburner and accelerated away from the area at 1.2 Mach. No damage to the aircraft was recorded and no encounter logged.

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Event II-49

Aircraft Involved: Three F-105Ds vs three MIG-17s

Result: No damage

Vicinity of Encounter: 21°39'N/106°37'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 18 September 1966/0931H

Three F-105Ds (BLUE Flight) departed Korat AB on a mission into Route Package VI-A. Their target was the southwest Dao Quan POL storage.

2. MISSION ROUTE

See Event II-52

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3

Unknown external stores

MIG-17 MIG 1, 2, 3

External fuel tanks

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear, visibility 5-6 mi in haze.

BLUE 1, 2, 3

Altitude: 7-8,000 ft

Heading: 290°

Speed: 480 kt

Fuel State: Unknown

Flight Formation

Unknown

5. INITIAL DETECTION

BLUE 3 sighted three MIGs in the 10 o'clock position from BLUE Flight. The MIGs were at about 6-7,000 ft, heading 060°.

6. ACTION INITIATED

At a range of approximately one mile the MIGs jettisoned their external tanks and turned into the flight of F-105s.

7. SITUATION DEVELOPMENT

BLUE Flight jettisoned all external stores and turned into the MIGs. When the MIGs saw BLUE Flight jettison ordnance the MIGs executed a Split-S and departed the area. BLUE Flight lost sight of the MIGs and continued in a 360° turn. BLUE Lead sighted the MIGs ahead approximately 4-5 miles. In full A/B, the flight accelerated to 1.1 Mach. The MIGs were low, 2-3,000 ft, while the F-105s were at 5-6,000 ft. As BLUE Flight passed kept the antiaircraft flak was very heavy and although the MIGs were only about 1 to 1-1/2 miles ahead, BLUE Flight broke off the chase and headed for the coast. There was no exchange of gun fire. The MIGs were last sighted in the vicinity of 21°30'N/106°26'E. The closest approach of the MIGs was approximately one mile.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 1 (Lead)	1750	950	70

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Event II-49

Comments on this Encounter

BLUE 1 (Lead) expressed his opinion that the MIGs were highly successful in making F-105 flights jettison their ordnance prior to reaching their target. The MIGs would then depart the area.

11. DATA SOURCES

Project Interviews: BLUE 1 (Lead) 5 Jan 1967.
Reference Reports: 7AF/OPREP-3/180750Z Sep 66/DOCO 25685

12. NARRATIVE DESCRIPTION

See paragraphs 5, 6 and 7.

See also Events II-50, II-51, and II-52.

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Event II-50

Aircraft Involved: Two F-105Ds vs four MIG-17s
Result: No damage
Vicinity of Encounter: 21°12'N/106°19'E.

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 18 September 1966/1648H

BLUE Flight, two F-105D aircraft, were en route on a strike mission against the Dap Cau Highway/Railroad Bridge in Route Package VI-A. Prior to reaching the target the flight encountered four MIG-17 aircraft and jettisoned all external stores as the MIGs attacked.

2. MISSION ROUTE

After departing Korat the route of the flight is unknown. The encounter occurred in the vicinity of 21°12'N/106°19'E.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2

Unknown ordnance load, reference was made to external stores.

MIG-17 MIG 1, 2, 3, 4

External fuel tanks.

Guns.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

BLUE 1, 2

Altitude: 1,500 ft
Heading: 254°
Speed: 540 kt
Fuel State: Unknown

Flight Formation:

Unknown

5. INITIAL DETECTION

Four MIG-17 aircraft were sighted in the 9 o'clock position of BLUE Flight. The MIGs were on an easterly heading in a loose echelon formation at about 2,000 ft, 3-4 miles away.

6. ACTION INITIATED

The MIGs jettisoned their external fuel tanks and made a hard left turn into BLUE Flight. BLUE Flight went into a shallow, left downward spiral as they jettisoned external stores and accelerated to 600 kt.

7. SITUATION DEVELOPMENT

As the lead MIG approached the 8 o'clock position on BLUE Flight, he fired a five-second gun burst. No hits were reported. The closest approach of the MIGs was 3,000 ft.

8. ORDNANCE

	<u>No. fired/No. hits</u>	<u>Remarks</u>
MIG-1	1/0	No hits

9. EQUIPMENT

None reported.

10. AIRCREW COMMENTS

None obtained.

11. DATA SOURCES

Project Interviews: None
Messages, Reports:

7AF/OPREP-3/181638Z Sep 66/DOC 25701 Sep 66.
7AF/DAI/182319Z Sep 66/D10 30479 Sep 66.

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Event II-50

12. NARRATIVE DESCRIPTION

Two F-105D aircraft departed Korat AB on a mission into Route Package VI-A. In the vicinity of 21°12'N/106°19'E the flight encountered four MIG-17 airplanes at about 1648 hours. The flight was heading 254° at an altitude of 1,500 ft when the MIGs were sighted at the 9 o'clock position on an easterly heading at approximately 2,000 ft. When the MIGs sighted the F-105s, they jettisoned their external fuel tanks and turned hard left, from an echelon formation, to attack the F-105s. BLUE Flight entered a shallow, left spiraling descent as external stores were jettisoned and speed was increased to 600 kt. As the lead MIG reached the 8 o'clock position on BLUE Flight he fired a five-second burst from his guns. No hits were reported. The closest point of approach of the MIGs was about 3,000 ft.

BLUE Flight continued their turn toward the hills in the vicinity of 21°15'N/106°20'E. The MIGs did not follow the F-105s. BLUE Flight then made a 180° turn to see if the MIGs were following any of the other strike flights as they were coming off the target. The MIGs had departed the area and although the direction was unobserved it was estimated that they departed to the south. No distinctive markings were observed on the MIGs.

See also Events II-51 and II-52.

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Event II-51

Aircraft Involved: Four F-105s vs two MIG-17s.

Result: Sighting Only

Vicinity of Encounter: 10 mi from Dap Cau Railroad/
Highway Bridge

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 18 September 1966/1644H

A flight of four F-105s were on a strike mission against the Dap Cau Railroad/Highway Bridge.

2. MISSION ROUTE

Probably similar to Event II-52.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 3, 4

- 2 - 3000 lb bombs
- 1 - 650 gal centerline tank
- 1 - M-61 gun with full ammo (1029 rd 20mm)

BLUE 2

- 4 - CBU-27
- 1 - 650 gal centerline tank
- 1 - M-61 gun with full ammo

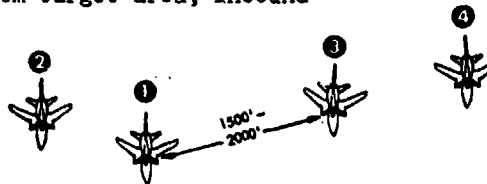
4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

BLUE 1, 2, 3, 4

Altitude: 6000 ft
Heading: 254°
Speed: 550 kt
Fuel State: Unknown, centerline tanks had been jettisoned
30 mi from target area, inbound

Flight Formation:



5. INITIAL DETECTION

Two MIG-17 fighters were sighted by BLUE 2 in the 9 o'clock position of the flight at a range of approximately 6 miles, level in altitude.

6. ACTION INITIATED

BLUE Flight engaged afterburners and continued to the target accelerating to 675 KCAS.

7. SITUATION DEVELOPMENT

As BLUE Flight accelerated, the MIGs were no threat. Heavy 85mm AA gunfire was encountered so the flight descended to minimum altitude, approximately 50 ft.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

No specific comments.

11. DATA SOURCES

Project Interviews: BLUE 2, 15 March 1967

Messages, Reports: 7AF/DAI/182319Z Sep 1966/ DIO 30479

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12. NARRATIVE DESCRIPTION

Event II-51

BLUE Flight was inbound to the target when BLUE 2 sighted two MIGs at 9 o'clock from the flight. Immediately the flight engaged afterburner and accelerated in a shallow descent. The MIGs were easily outdistanced. Heavy AA fire in the target area probably caused the MIGs not to follow the F-105s. No specific markings were identified on the MIGs and they were not sighted again.

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Aircraft Involved: Four F-105Ds vs four MIG-17s

Result: No damage

Vicinity of Encounter: 21°08'N/106°17'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 18 September 1966/1645H

Four F-105Ds (BLUE Flight) were the last of approximately eight flights striking the Dap Cau bridge in Route Package VI-A (21°12'N/106°05'E). BLUE Flight had split into two elements, and was accelerating for their bomb run.

2. MISSION ROUTE

Flight departed Korat, refueled on the Brown Anchor track; then headed north up the Gulf of Tonkin, and west into the target area. Egress was made on the same general route.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

Unknown - General purpose bombs
2 - 450-gal drop tanks
Camouflage paint
IFF on; TACAN and radar on standby

MIG-17 MIG 1, 2, 3, 4

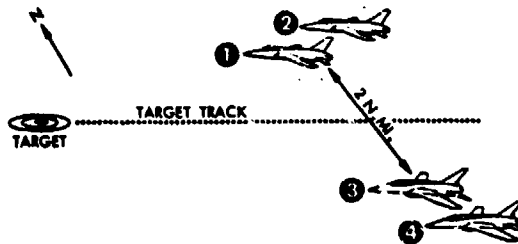
Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown along route - estimated scattered to broken, 2 to 5-mile visibility in target area.

	BLUE		
	1 2 3 4		
<u>Altitude:</u>	6 to 7,000 ft-----		
<u>Heading:</u>	280°-----		
<u>Speed:</u>	500 kt -----		
<u>Fuel State:</u>	Approx. 10,000 lb ----		

Flight Formation: Elements had separated approximately 2 n mi with BLUE 1 and 2 running north of track, and BLUE 3 and 4 running south of track. Elements were flying at the same altitude.



5. INITIAL DETECTION

BLUE 3 and 4 sighted four MIG-17s at 9 o'clock, level, heading 090°, approximately 400 kt. MIGs were about 1 n mi south of BLUE 3 and 4, and flying in a loose right echelon formation. MIGs made a left turn in and behind the BLUE 3 element.

6. ACTION INITIATED

BLUE 3 and 4 jettisoned their ordnance, nosed over for acceleration, and made a hard left turn back to the northeast. BLUE 1 and 2 were already in a pop-up maneuver on the target; however, they dropped short when the MIGs were called, and turned back left to pick up the MIGs.

7. SITUATION DEVELOPMENT

BLUE 3 and 4 accelerated and descended to the deck heading back out 050°. The MIGs had rolled into their 6 o'clock position and MIGs 1 and 2 fired their cannons as they rolled out of the turn. BLUE 3 and 4 received no hits as they had already accelerated well out of gun range. BLUE 1 and 2 dropped their ordnance in the vicinity of the target, and then broke back left to assist BLUE 3 and 4. BLUE 1 acquired the MIGs during his

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Event II-52

turn, but his element rolled out 7 to 8 n mi in trail. BLUE 3 and 4 continued their egression heading 050°. The MIGs, unable to close, gave up the chase and turned off toward the south. BLUE 1 and 2 were unable to close within firing range before they lost visual contact with the MIG flight. BLUE Flight rejoined and returned home safely.

8. ORDNANCE

MIGs 1 and 2 fired their cannons, but made no hits.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 1	6100	500+	(560 hours)

Comments on this Encounter

BLUE 1 expressed the need for an aircraft with a much greater turn capability than the F-105. He also stated a desire for greater acceleration, rate of climb, and endurance under combat conditions. He believes the F-105 needs better cockpit visibility, especially between 5 and 7 o'clock. Once again switchology was a factor in the difficulty in changing the FCS from the bomb mode to the air-to-air mode.

BLUE 1 also feels there must be a reduction of the radio chatter in the combat area. An improvement in our own GCI to facilitate a better and more specific MIG warning system is required.

11. DATA SOURCES

Project Interviews: BLUE 1, 5 Jan 1967

Messages, Reports:

7th AF OPREP-3, 181737Z Sept 66, DOCC 25699
388th TFW OPREP-4/297, 18 Sept 66 (Resume)

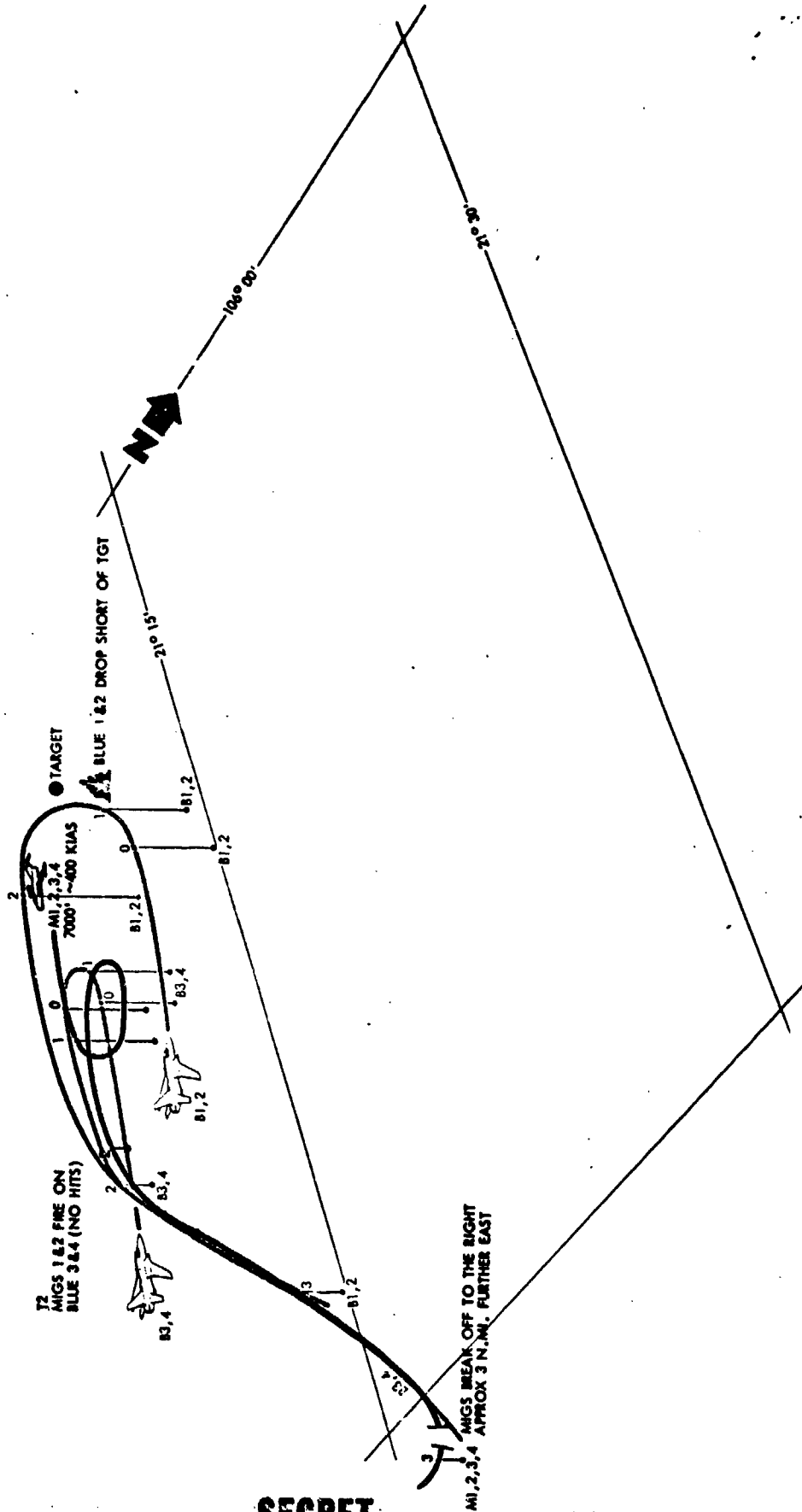
12. NARRATIVE DESCRIPTION

Items 4-7 adequately describe the narrative of this event; however, a question as to relative positions of all aircraft at initial sighting should be mentioned at this point. This outline generally follows the information contained in the interview with BLUE 1. The OPREP-3 differs in the following manner: BLUE 3 and 4 made initial sighting when on a heading of 050°, altitude 3 to 4,000 feet. MIGs were heading approximately 240° and co-altitude. BLUE 3 and 4 were supposedly in a 360° turn taking spacing from other flights already on the target. The possibility exists that BLUE 3 and 4 were actually taking spacing on the lead element (BLUE 1 and 2), as confirmed by BLUE 1's statement that he had split his elements. The OPREP could then be picking up this event as the MIGs were already rolling in on 3 and 4 since all following information is in correlation.

See also Events II-50 and II-51.

RED BARON EVENT II-52 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	BLUE Flight Alt. 6 - 7,000 ft 500-550 kts Heading 280° Full Ordnance load and 10,000 lb of fuel.	B1 and 2 accelerating just prior to pop-up maneuver.	B3 and 4 sighted 4 MIG-17s in loose R echelon at 9 o'clock, level, 400 kt.	B3 and 4 called MIGs at 9 o'clock.	MIGs were in loose right echelon heading 090° at about 7000 ft. Speed about 400 kt.	
T ₁	Same as T ₀	B1 and 2 pop-up to 12,000 ft but drop short of target when they hear MIG call.	B3 and 4 observe MIGs turning in on them. 3 and 4 jettison ordnance dump the nose, AB, accelerate, and begin hard left turn to heading 050°.	B3 and 4 call MIGs rolling into their 6 o'clock.	MIGs peel off and roll in behind B3 and 4.	
T ₂	Unknown Both flights descending and accelerating.	B1 (L) acquire visual contact with MIGs chasing 3 and 4. BLUE 1 and 2 roll in trail with MIGs at approx. 7 n mi range	B3 and 4 hold heading 050° and attempt to out-run the MIGs.		MIGs 1 and 2 fire cannons at B3 and 4. The MIGs are out of range and B3 and 4 receive no hits.	BLUE 3 and 4 are accelerating on the deck and observe ordnance from MIG 1 and 2 splashing into the paddles below them.
T ₃	550 kt 3,000 ft alt. 6,500 - 7,000 lb of fuel.	B1 and 2 are in trail and closing on MIGs, however MIGs turn off to the south and are lost in the haze.	B3 and 4 continue egression on 050° heading.		MIGs break off attack and turn off toward the south.	MIGs could not close on B3 and 4.



Aircraft Involved: Eleven F-105s vs four
MIG-17s

Result: No damage

Vicinity of Encounter: Approximately
21°50'N/105° 30'E¹

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 20 September 1966/1645H

GREEN Flight (three F-105Ds) and BLUE Flight (four F-105Ds) bombed a highway bridge fifteen miles northeast of Thai Nguyen. (JCS 78.62 at 21°44'50"N/106°04' 16"E) PURPLE Flight (two F-105Ds and two F-105F Wild Weasel) was an IRON HAND Flight supporting GREEN Flight, BLUE Flight and a flight of three F-4Cs on strike/CAP. BLUE Flight was 3-5 minutes (approximately 30 miles) behind GREEN Flight and PURPLE Flight was 8-10 minutes behind GREEN Flight crossing the Red River near Yen Bai. The flight of three F-4C aircraft were assigned strike/CAP with their primary target in the same area and at approximately the same TOT as the F-105s.

2. MISSION ROUTE

GREEN and BLUE Flights departed Takhli about the time PURPLE Flight departed Korat. PURPLE 1 was delayed ten minutes at takeoff after aborting his first aircraft. All flights refueled on their scheduled tankers and proceeded north-northwest to cross the Red River in the vicinity of Yen Bai. GREEN 3 aborted while attempting to refuel and GREEN 4 then moved up to fill in as GREEN 3. The flights flew east from Yen Bai passing north of Thai Nguyen and then southwest to the target. Egress was via the reverse route to post-strike tankers and then recovery at their respective bases. GREEN Flight descended to 8 to 10,000 ft altitude after crossing the Red River while BLUE Flight descended to tree-top level (approximately 3500 ft MSL). PURPLE Flight also descended to 8 to 10,000 ft.

3. AIRCRAFT CONFIGURATIONS

F-105D GREEN 1, 3

5 - 1000 lb bombs
2 - 450 gal drop tanks
20mm ammo (1029 rounds each)

F-105D GREEN 2

4 - CBU-24s (flak suppression)
IFF, TACAN, and radar-off camouflage paint
20mm ammo (1029 rounds)

F-105D BLUE 1, 3, 4

5 - 1000 lb bombs
2 - 450 gal drop tanks
20mm ammo (1029 rounds each)

F-105D BLUE 2

4 - CBU-24s (flak suppression)
IFF, TACAN, and radar-off, camouflage paint
20mm ammo (1029 rounds)

F-105F/F-105D PURPLE 1, 2, 3, 4

2 - AGM-45s (SHRIKE missiles)
2 - LAU-3 (rocket pods)
20mm ammo (1029 rounds)
1 - 650 gal centerline tank
IFF, radar, and TACAN-off, camouflage paint

MIG-17 RED 1, 2, 3, 4

Not given - but only gunfire was observed. Silver color on right wing perpendicular to leading edge (as reported by GREEN 3). One MIG was light gray-blue in color with RVN markings.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear with haze layer up to 10,000 feet

	<u>BLUE 1, 2, 3, 4</u>	<u>GREEN 1, 2, 3</u>	<u>PURPLE 1, 2, 3, 4</u>
Altitude:	100/150 ft AGL (Grd. level approx. 3500 ft)	8-9000 ft left orbit	8 to 10,000 ft

¹See text for locations of specific encounters.

	<u>BLUE 1, 2, 3, 4</u>	<u>GREEN 1, 2, 3</u>	<u>PURPLE 1, 2, 3, 4</u>
<u>Heading:</u>	300°	300°	090°
<u>Speed:</u>	500 KCAS-plus	450 KCAS	450-480 KCAS
<u>Fuel:</u>	10-11,000 lb	10-11,000 lb	9,000 lb
<u>Flight Formation:</u>	Defensive spread	In trail (rejoining)	Fluid-four (fighting) Second element 2- 3000 ft lower than lead and 4-5 miles in trail

5. INITIAL DETECTION

Area MIG warnings had been transmitted while GREEN Flight was inbound to the target. After pulling off of his dive bomb run, GREEN 1 orbited the target one time in order to check BDA and then departed on a 300° heading at about 5500 ft MSL as BLUE Flight approached the target. GREEN 3 delayed his dive bomb run for better position and after completing the run pulled up into a left orbit to rejoin his flight at about 8000 ft, 350 KCAS, west of the target and was turning from west to south when he first saw a flight of four MIG-17s passing few hundred feet below him at his 3 o'clock beam position, apparently headed northwest in a left turn. GREEN 3 lost the four MIGs in the sun and haze as he attempted to turn and accelerated after them. Very shortly thereafter, GREEN 2 called that GREEN Flight was being bounced by MIGs and GREEN 1 acquired the MIGs at his 7 o'clock high, 2 miles back in a left turn, with one element peeling off for attack. BLUE Flight is on target and PURPLE Flight is about thirty miles west of GREEN Flight at this time. The F-4C flight position is unknown but in the area. (No F-4C/MIG encounters were reported in this area on this date. Thus it is assumed that the F-4C flight was unable to establish contact with the enemy after cleaning their aircraft off.)

6. ACTION INITIATED

GREEN Flight jettisoned pylons and tanks. GREEN 1 held course after sighting two of the four MIGs peeling off for attack. GREEN 2 initiated an attack on the high MIG element. GREEN 3 is approximately six miles behind his flight. BLUE Lead coming off of target is made aware that he has a hung 1000-lb bomb on an outboard station and will be unable to maneuver in a turning engagement. He elected to egress on the deck and attempt to avoid the MIGs. BLUE 1 ordered his flight to remain with him and egress. PURPLE Flight, coming into the area, jettisoned fuel tanks and turned to aid GREEN Flight.

7. SITUATION DEVELOPMENT

GREEN 1 waited until the two MIG-17s were close to firing range (~3000 ft) with a high overtake speed, and then performed a high-g roll to the right followed immediately by a high-g reverse roll back to the left. At least one of the MIGs fired a cannon burst at GREEN 1 as he broke right. The MIGs are at GREEN 1's 11 o'clock position in a tight left turn as GREEN 1 completes his high-g break and reversal, but the MIGs dive for the deck and GREEN 1 cannot track them in the turn or accelerate fast enough to close on them. GREEN 1, 2, and 3 elect to egress at high speed and rejoin on the south side of the Red River. BLUE 1 sees F-105s and MIGs hasseling overhead but elects to egress on the deck supersonic because of the hung bomb on BLUE 1. One MIG dives after BLUE Flight but cannot close due to BLUE Flight's high speed. PURPLE 1 sees two MIGs at his 12 o'clock and engages. PURPLE 1, 3, and 4 fire their cannon at MIGs and three MIGs fire at PURPLE Flight members with no apparent hits. PURPLE Flight terminated the engagement by jettisoning ordnance and accelerating to supersonic speed.

8. ORDNANCE

	<u>No. fired/No. hits</u>	<u>Remarks</u>
	(CANNON)	
GREEN 1, 2, 3	0/0	
BLUE 1, 2, 3, 4	0/0	
PURPLE 1	460/0	
PURPLE 2	0/0	
PURPLE 3	150/0	
PURPLE 4	200/0	
MIG 1	Twice/0	At GREEN 1 and PURPLE 2
MIG 2	?/0	
MIG 3	Twice/0	At PURPLE 1 and PURPLE 3
MIG 4	Once/0	

9. EQUIPMENT PROBLEMS

GREEN 3 - Could not complete refueling inbound.
 BLUE 1 - Armament bolt failed in outboard wing pylon causing 1000 lb bomb to hang up.
 PURPLE 1 - Delayed ten minutes at take-off after aborting first aircraft.
 PURPLE 4 - No sight reticle during flight.

10. AIRCREW COMMENTS

	Total Hours	F-105 Hours	Combat Missions	Remarks
<u>GREEN 3</u>	1600	100	8	2-1/2 yrs ADC in F-101 and F-102, no missile firing, fired at DART two times.
<u>BLUE 1</u>	Unknown	Unknown	Unknown	Previous F-105 instructor at Nellis
<u>PURPLE 1</u>	4000	1100	57	Wild Weasel School, F-105 IP at Nellis
<u>PURPLE 3</u>	Unknown	Unknown	Unknown	TAC background, much F-105 time, Wild Weasel School
<u>PURPLE 4</u>	1750	950	70	TAC background, Fighter Weapons School Graduate

Other flight members unknown. F-4 Flight - not interviewed.

Comments on this Encounter:

BLUE 1: Gun site camera produces hazy images. F-105 a good aircraft for this type war but any new aircraft should be able to maneuver in high "g" condition. Would like tracer ammunition in guns. F-105 can fight with MIG-21 at low altitudes according to Maj. John Boyd's Energy Manueverability Charts.

GREEN 3: F-105 needs a quick sure method to select gun-air without changing so many switches.

PURPLE 1: F-105 is an excellent airplane in carrying heavy loads to distant targets. F-105 has outstanding performance at low altitudes at high speeds. F-105 pilots entered SEA combat without any air-to-air fighter vs fighter training. Combat is a tough place to learn what a pilot must know to survive in engagements with enemy fighters. F-105 can hassel with MIGs when in clean configuration and light fuel load (5000 lb or less).

11. DATA SOURCES

Project Interviews: BLUE 1, 6 Jan 67
 GREEN 1, (Letter)
 GREEN 3, 4 Feb 67
 PURPLE 1, 14 Mar 67
 PURPLE 4, 5 Jan 67

Messages: 7AF 201500Z Sept 66 OPRER-4 DOCC 25793

12. NARRATIVE DESCRIPTION

T GREEN Flight: GREEN Flight heard MIG alert calls on Guard Channel while inbound to the target heading Southeast at 8 to 10,000 feet MSL, 480 knots ground speed. Mountail tops were about 3500 ft in this area. GREEN Flight took no action on the MIG alert call.

BLUE Flight: BLUE Flight, about 3-5 minutes behind GREEN Flight, was going to bomb the same target, a highway bridge fifteen miles northwest of Thai Nguyen. BLUE Flight descended to 150 ft AGL for ingress.

PURPLE Flight: PURPLE Flight was an IRON HAND Flight with a Wild Weasel F-105F flying lead position. PURPLE Flight's purpose was to suppress SA-2 radars and attempt to restrict SAM firing at the other flights. This flight was three minutes late entering the target area due to PURPLE 1 aborting his first aircraft. There was one other F-105 flight on the target before GREEN Flight and an F-4C flight assigned Strike/CAP with the primary target in the same area, but to the west of the eventual action.

T1 GREEN Flight: GREEN Flight struck the target and GREEN 2 expended his ordnance on trucks. Since the tactic was for lead to hit the target followed after a short period by 3 and 4, the three aircraft ended up as essentially three separate aircraft. GREEN 1 was in front, outbound from the target, at 500 kt CAS, 2000 ft AGL, and heading 300°. GREEN 2 was high to the right of GREEN 1 and a few miles to the rear. GREEN 3 came off of his bomb run, pulled up to 8000 feet in a left turn attempting to rejoin.

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Event II-53

GREEN 3's airspeed was down to 350 KCAS as a result of the climb. As GREEN 3 was turning from west toward south, he saw four MIG-17s passing beneath him several hundred feet on his beam at 3 o'clock. The MIGs were in a fingertip formation. He attempted to turn and accelerate after them but lost them in the haze and sun. GREEN 2 then called, "GREEN Flight is being bounced by MIGs."

BLUE Flight: BLUE Flight was just coming off target when GREEN 2 made his call. BLUE 1 was acutely aware of a hung 1000-pound bomb on an outboard wing pylon. He elected to avoid confrontation with the MIGs if possible because he could not maneuver with the asymmetric ordnance load. GREEN 1 called his flight to egress at high speed and descended to 100 ft AGL at least 500 KCAS and headed 300°.

PURPLE Flight: PURPLE Flight heard the call that MIGs had bounced GREEN Flight, and turned to proceed to the area. The F-4C flight on a strike/CAP mission in the area called to clean off their aircraft but apparently were unable to make contact with the MIG.

T₂ GREEN Flight: GREEN Lead saw four MIG-17s at his 7 o'clock, high about 2 mi range and GREEN Lead felt that he was boxed in as he watched two of the MIGs peeling off in a left descending turn. GREEN Flight jettisoned pylons and tanks. GREEN Lead held his course while the two MIGs closed to firing range at a high overtake speed. When one of the MIGs fired, GREEN Lead did a high g half-roll to the right, followed quickly by high g reverse roll to the left. Both MIGs were then in front of GREEN Lead at 11 o'clock in a tight turn to the left. He lit afterburner and went high on the MIGs because he could not stay with them in the turn for tracking. The two MIGs continued down from about 2000 ft AGL to treetop level heading south. GREEN 2 made one pass on the two high MIGs, but did not obtain a firing position. GREEN Flight then returned to course, exited the area, and rejoined south of the Red River prior to refueling and return to base.

BLUE Flight: BLUE Flight rejoined near the target and descended to 100-150 ft AGL in full military power, accelerating until they had about 600 KCAS. The flight path took them under the engagement¹ and BLUE Lead could see the F-105s and MIG-17s above him. BLUE Lead observed a MIG-17 drop down toward his flight, but it was unable to close to firing range and slowly fell behind. BLUE Lead estimated that the MIG started about 1 mile at 6 o'clock and was observed until he dropped below the rear of the canopy frame at roughly 3 miles, still losing ground.

PURPLE Flight: PURPLE Flight continued inbound at 480 KCAS, 8 to 10,000 ft, heading 090° with the element spread about a mile behind PURPLE Lead. PURPLE Lead saw two MIG-17s at 12 o'clock in close formation headed south in a left turn at 4 to 5 miles range, and slightly low. The sun, at PURPLE Flight's 6 o'clock, glinted off of the MIGs and aided detection. PURPLE Lead called "MIGs at 12 o'clock level, tanks off and afterburner now." PURPLE Flight jettisoned fuel tanks (with about 1000 lb in each tank), retained their ordnance and accelerated in afterburner to 600 KCAS. [Note: PURPLE Flight never saw any member of the other flights during the encounter.]

T₃ GREEN Flight: GREEN Flight egressing individually at 600 kts ground speed.

BLUE Flight: BLUE Flight egressing at 600 kt ground speed at 100 ft AGL. BLUE Lead still has a hung 1000-lb bomb on his outboard wing pylon.

PURPLE Flight: PURPLE Lead closed on the two MIGs in the vicinity of 21°50'N/105°15'E (about fifty miles west of the bridge target) as they turned back and forth between 140 and 190 degrees. PURPLE Lead attacked from the MIGs' 3, 4, 5, and, finally, 6 o'clock position. PURPLE Lead attempted to change his gun sight from "bombs" to "guns-air" as he was closing on the MIGs, but inadvertently stopped the switch at "rockets" and obtained 40 mils sight depression where 0-10 mil depression would be normal for 1-2 g maneuvering. As PURPLE Lead closed to 3000 ft on MIG 1, he opened fire with 20mm cannon. PURPLE Lead fired two long bursts at MIG 1 with no visible damage, when he noticed that he was rapidly closing on MIG 2 in his 1 o'clock position. MIG 1 entered a slow right turn from south to east as PURPLE Lead now at 700 KCAS opened fire on MIG 2 at about 1500 ft range. PURPLE Lead had fired 460 rounds at the two MIGs with no visible damage and was preparing to fire another burst at MIG 2 at about 500 ft range when MIG 2 pulled his aircraft straight up and back over PURPLE Lead. PURPLE 2 saw a third MIG at his 4 o'clock, diving at 40° for PURPLE Lead's tail firing and called "PURPLE Lead, there is a third MIG trying to get on your tail." PURPLE Lead could not see MIG 3 and called back that the MIG could not close since he had now accelerated to 700 KCAS. PURPLE Lead entered a descending left-hand turn, jettisoned his ordnance (two LAU-3s and two AGM-45s) accelerated to 750 KCAS on the deck and headed back up Thud Ridge.

T₄ PURPLE Flight: The MIGs then attacked PURPLE 2, and closed to 2000 ft firing as PURPLE 2 jettisoned his ordnance, accelerated after PURPLE Lead and outran the MIGs.

T₅ PURPLE Flight: PURPLE 3 and 4 were about 4-5 miles in trail of the lead element at the outset and now had closed the range with PURPLE 4 about one mile behind PURPLE 3. PURPLE 3 closed rapidly on MIG 3 who apparently did not know anyone was behind him, made

¹ It is not exactly clear from the data whether BLUE Flight observed the actions of PURPLE or GREEN Flight. BLUE 1 interview indicated GREEN Flight.

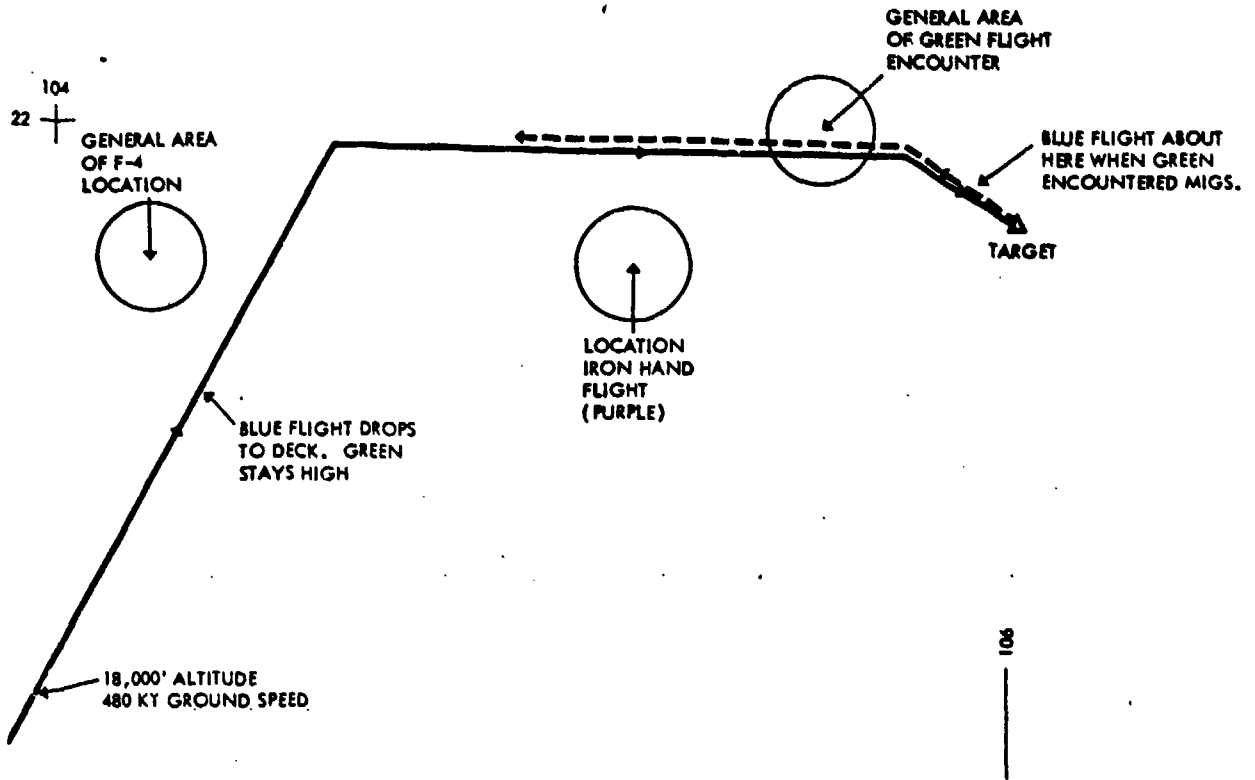
a high angle descending pass, closing to 2000 feet and fired 150-200 rd with no visible damage. MIG 3 realized he was being fired at and broke in a hard, high g pullup to the left. PURPLE 3 and 4 were in a shallow right turn and PURPLE 4, who was a mile astern, had trouble matching the MIGs zoom. Once the MIG was on top and had forced PURPLE 3 to overshoot, he relaxed "g" and held his position until he obtained separation and then rolled off to fall in behind PURPLE 3 apparently not realizing that PURPLE 4 was behind him. PURPLE 4 was closing on MIG 3 with at least 200 kt overtake, at 650-700 KCAS. PURPLE 4 opened fire at 2000 feet with no reticle (known at take-off) in a right 20-30° nose high, turning pass, and fired 200-300 rounds as he kicked rudder and stirred the stick around in his attempt to hit the MIG but saw no visible damage.

T₆ PURPLE Flight: As PURPLE 4 passed 200 feet to the left of MIG 3, MIG 3 rolled to the right and down, fell in behind PURPLE 3 and began firing. PURPLE 4 observed the MIG to be light blue-gray in color with RVN markings as the MIG fired approximately 40 to 50 rounds at PURPLE 3 from 1500 to 2000 ft range without any hits.

T₇ PURPLE Flight: PURPLE 3 was in a descending, jinking, less than one g maneuver to accelerate and outrun the MIG. PURPLE 4 made a barrel-roll to the outside in an attempt to achieve a 6 o'clock position on MIG 3, but MIG 3 broke off to the southeast and PURPLE 4 could not relocate him upon completion of this maneuver. He headed west to rejoin the flight and PURPLE 3. MIGs 1 and 2 broke off to the southeast when PURPLE 1 and 2 outran them. This engagement started at 8000 ft and ended at about 1000 ft (about 2500 ft MSL) and is estimated to have lasted 4 minutes.

This time marks in reference to the above narrative signify only a period during which certain actions transpired, and are not accompanied by a drawing.

The overall mission route and general location of aircraft are shown in Figure 1, while the detailed actions of PURPLE Flight are shown in the sketch.



SECRET

RED BARON EVENT 11-63 SUMMARY

Time Mark	Action Aircraft (PURPLE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
Before Top			61 "Wc are being bounced by MIGs."			PURPLE flight had heard GREEN flight encounter MIGs, and is heading toward the general area of GREEN's target.
Top	Heading: 090° Alt: 8-10,000 ft Speed: 450 KCAS Full internal fuel	P1 sees a glint at 12 o'clock, range 4-5 mi. He sees that it is a MIG-17. P1 then saw another MIG-17 below. P1-4 drop tanks and go to afterburner.	P3 and 4 following a bit lower and 4-5 miles back in trail.	P1 has MIGs 12 o'clock.	Two MIG-17s in a gentle left turn heading south at 5000 ft.	P1 looks down momentarily to set up sight. Gets only rockets, with a fixed 40 mil sight depression. He did not want radar ranging due to low alt. The sight makes P1 shoot too high. PURPLE closed from MIG's 4 to 6 o'clock.
T1p	P1 2 to 3000 ft behind MIG-1 Hdg: 120° Speed: 550 KCAS Alt: 8000 ft Closing rapidly	P1 opens fire on lead MIG	P2 following P1, P3 and 4 in trail.		MIGs continue on. M2 is wingman and is on the right.	P1 fires 2 long bursts of 20mm. No hits.
T2p	P1 closing rapidly on M2. Alt: 8000 ft Speed: 600 KCAS	P1 switched his attack from M1 to M2. Range 1500 ft down to 500 ft.	Rest of P-Flight following.		M2 now on the right side of P1 (at about P1's 1 o'clock). M1 started a slow right turn.	P1 fired one long burst at M2. No hits.

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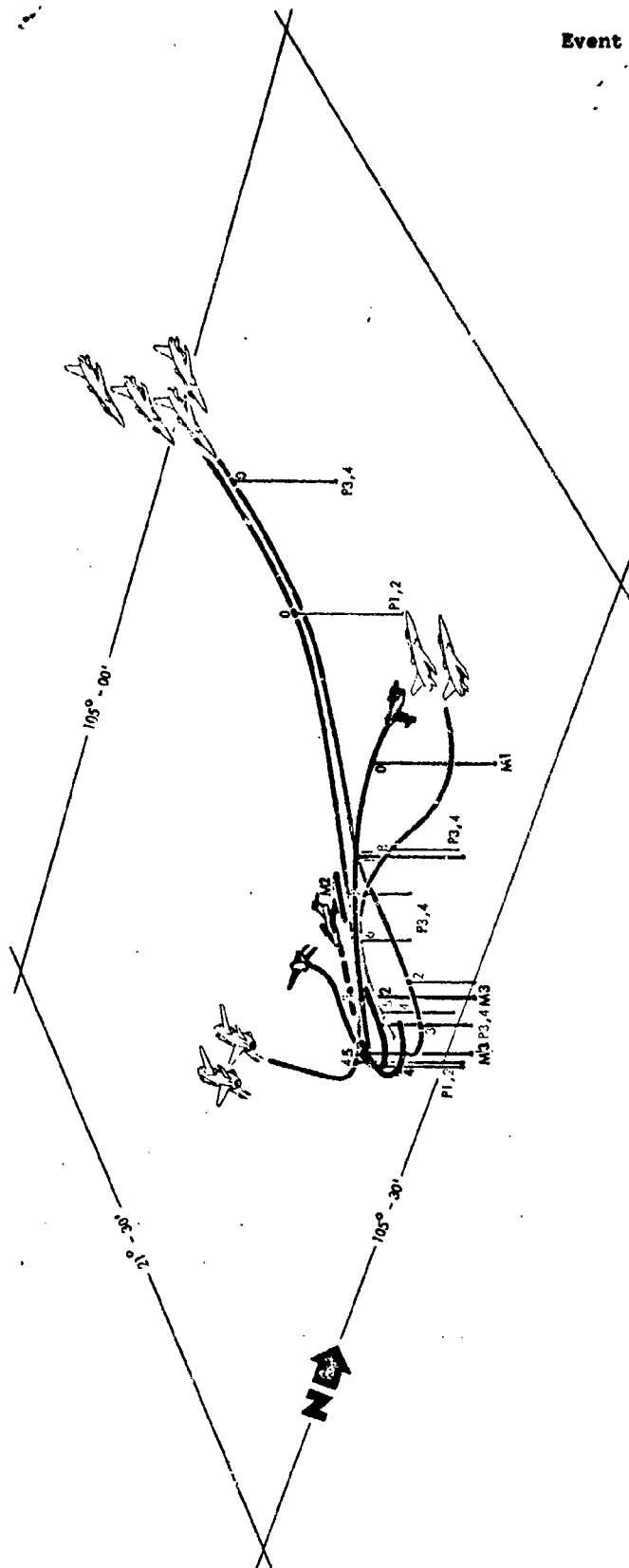
RED BARON EVENT II-53 SUMMARY

Time Mark	Action Aircraft (PURPLE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T3p	P1 still closing. P3 and 4 about Mach 1.0.	P1 starts to fire again at M2 but MIG breaks away before he can.	P2, 3, 4 still following P4 about 1 mile in trail of P3.	P2 and 3 call a third MIG trying to close on P1.	M2 breaks straight up and over the top to the rear of P1. A third MIG-17 (M3) at 4 o'clock to P2 and 3, diving at 40°, alt 7000 ft.	Third MIG is pale blue color and is hard to see
T4p	P1 at 700 KCAS. The action from this point on describes only P3 starts to attack M3.	P1 jettisoned ordnance, breaks for the deck, and then departs the area. On departure P1 had bingo fuel.	P2 following P1 also drops ordnance. the P3 and P4 aircraft.	P1 indicates to P2 that M3 cannot close on them.	M3 closes to 2000 ft of P2 but could not catch him. M3 continues right turn	
T5p	P3 and 4 in right turn slightly descending.	P3 fires at M3 from 2000 ft range.			When fired at M3 pulls up hard with high g.	P3 fired 150 rounds.
T6p	P4 - 20 to 30° nose high in full afterburner.	P4 fired at the MIG. Range 200 ft. P4 had 2000 knots overtake on the MIG.			M3 pulled up and then rolled off left behind P3.	P4 fired 200 to 300 rounds. No hits.
T7p		P4 passed 200 ft to MIG's left as he overshoot P3 jinking away.			M3 fires at P3 at 2000 ft range. No hits.	
T8p		P4 does a barrel-roll but the MIG breaks off and is lost from sight.				
T9p		P3 and 4 rejoin and egress.				

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Event II-53



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Aircraft Involved: Four F-105s vs two MIG-21s

Result: No damage

Vicinity of Encounter: 21°15'N/106°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 September 1966/1027H*

Three F-105Ds and one F-105F WILD WEASEL aircraft on an IRON HAND support flight for strike aircraft in Route Package VI-A.

2. MISSION ROUTE

Departed Korat then direct to Brown Anchor Tanker direct to 21°12'N/107°34'E, direct to 21°15'N/106°45'E. Egress generally the same route. Altitude 8,000 ft, 450 kts.

3. AIRCRAFT CONFIGURATION

F-105F BLUE 1, F-105D BLUE 2

- 2 AGM-45
- 2 LAU-3
- 650-gal centerline tank
- 20mm ammo

BLUE 1

IFF operating; TACAN, radar, and doppler standby
Camouflage paint

F-105D BLUE 3

- 4 LAU-3
- 650-gal centerline tank
- 20mm ammo

F-105D BLUE 4

- 4 CBU-24
- 2 450-gal tanks on wing pylons
- 20mm ammo

MIG-21 MIG 1

Silver Color

MIG-21 MIG 2

2 AAM
Silver Color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear; visibility 5 mi. in haze.

	BLUE				GREEN		
	1	2	3	4	1	2	3
Altitude:	8,000 ft				6,000 ft		
Heading:	260°				040°		
Speed:	450 kts				550 kts		
Fuel State:	Full Internal (10,000 lb)				Unknown		

Flight Formation:

Normal tactical formation with element almost line abreast 1000 ft to 1500 ft to the rear and 2500 ft to the right.

5. INITIAL DETECTION:

A MIG call was received from another F-105 flight while BLUE flight was inbound to the target area.

MIGs were sighted by BLUE 1, 12 o'clock low, 2 to 3 mi. flying from left to right at 1027H. MIG warnings had been received, prior to sighting.

6. ACTION INITIATED

BLUE flight jettisoned stores and started right turn falling in trail with MIG 1.

7. SITUATION DEVELOPMENT

MIG 1 made a hard 180° turn passing BLUE flight almost head on. BLUE 1 fired 100 rounds of 20 m.m. HEI in front of MIG 1 with no apparent hits. BLUE 4 observed MIG 2 at 3 o'clock high 1000 ft out armed with missiles, attacking BLUE 3. On BLUE 4's call,

*NOTE: Time in OPREPS given as 0927H.

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Event II-54

BLUE 3 broke hard right into MIG 2 and down, and then reversed. BLUE 4 and MIG 2 jockeyed for position in a brief semi-scissors maneuver, with neither adversary being able to gain a tactical advantage. BLUE 4 broke off the encounter by breaking hard left and down, and accelerated to 740 kts CAS at 500 ft AGL. BLUE 1, 2 and 3 pursued MIG 1 for about 4 minutes and broke off with MIG 1 two to three miles in front of them opening range.

8. ORDNANCE

	(No. fired/No. hits)
	20mm
BLUE 1	100/0
BLUE 2	0/0
BLUE 3	0/0
BLUE 4	0/0
MIG 1	None observed
MIG 2	None observed

9. EQUIPMENT PROBLEMS

BLUE 1 - Gun jam at 120 rounds
BLUE 3 - Had difficulty seeing MIG 2 due to vapor from canopy at high air speed and g loads.
BLUE 4 - Was unable to outmaneuver MIG 2.

10. AIRCREW COMMENTS

Experience:

	<u>Total</u> <u>Hours</u>	<u>F-105</u> <u>Hours</u>	<u>Combat</u> <u>Missions</u>
BLUE 3	3400	780	80 TAC recorded and TAC FTR background

Comments on this Encounter:

BLUE 1 EWO rear cockpit, poor visibility from aft cockpit -- hard to tell what is going on.

11. DATA SOURCES

Project Interviews: BLUE 1 (rear cockpit EWO)
Messages, Reports: OPREP-3 2114332, September 1966 from 7AF
DOCO 25835, September 1966
OPREP 4/359, 21 September 1966 from 388 FTR Wing Korat

Letters: BLUE 4

12. NARRATIVE DESCRIPTION

BLUE flight, consisting of one F-105F WILD WEASEL in lead position and three F-105Ds, was on an IRON HAND mission in Route Package VIA. Inbound to the target area in the vicinity of 21°15'N/106°45'E, BLUE flight heard another F-105 flight call MIGs. BLUE flight was at 8,000 ft altitude, heading 260 at 425 KCAS when two F-105Ds were observed at 12 o'clock, 2,000 ft low heading northeast with a MIG-21 about 2,000 ft behind them. A third F-105D was observed about one mile behind the MIG-21. BLUE flight jettisoned ordnance and tanks and started a right diving turn to break up the MIG attack and pursued the MIG about fifteen miles to the vicinity of 21°24'N/106°58'E. BLUE lead was closing on a heading of 040°, 6,000 ft, 550-600 KTAS at the MIG-21's 4-5 o'clock position range 10-14,000 ft when the MIG broke in a hard left turn and almost met BLUE flight head-on. BLUE lead in a slight left turn, still heading about 040° fired 100 rounds of 20 m.m. at the MIG with no apparent hits as the MIG turned through 270° in a shallow climb. The MIG was 1500-2000 ft ahead of BLUE lead when he fired. BLUE flight made a left 150° whifferdill turn and pursued the MIG to the north northwest toward Kep Airfield.

Separation between elements was now about 7,000 ft and between aircraft about 4,000 ft. After the turn, BLUE 3 sighted a silver colored object at his 3 o'clock a few thousand ft high. BLUE 3 broke into the object and identified it as a drop tank floating down. BLUE 3 started to turn back to rejoin the pursuit of MIG 1, as BLUE 4 sighted a second MIG-21, 1000 ft off of his right wing and high. The element was in the vicinity of 21°29'N/106°52'E, with MIG 2 attacking BLUE 3 from 5 o'clock high.

BLUE 4 called the break and BLUE 3 broke right and down forcing MIG 2 to overshoot. BLUE 4 tried to get behind MIG 2 and both jockeyed for firing position in three or four scissor maneuvers with neither being able to attain a firing position. BLUE 3 lost sight of BLUE 4 and instructed him to depart the area. BLUE 4 then broke left and down and exited Route Package VI-B from 21°30'N/106°49'E to 21°11'N/107°30'E in afterburner at 740 kts, 500 ft AGL.

Meanwhile BLUE 3, after evading MIG 2, rejoined BLUE 1 and 2 at 21°34'N/106°44'E as they pursued MIG 1. MIG 1 was two to three miles in front of BLUE 1 when BLUE 1 broke off the chase at 21°35'N/106°42'E and exited with a right turn direct to 21°11'N/107°30'E. BLUE 4 exited Route Package VI approximately two minutes ahead of the rest of BLUE Flight and rejoined during rendezvous with the post-strike tanker.

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Event II-55

Aircraft Involved: Four F-105 vs one MIG-17

Results: One MIG damaged

Vicinity of Encounter: 21°12'N/106°43'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 September 1966/1015H

BLUE Flight was one of several F-105 flights in a strike against JCS 16, a railroad/highway bridge 17 miles northeast of Hanoi. There were also two flights of F-4s orbiting east of the target area as MIG CAP.

2. MISSION ROUTE

Aircraft departed Takhli, Thailand, direct air-to-air refueling out over the Gulf of Tonkin, north to 21°13'N/107°24'E, west along the ridge line to the target. Egress route was the reverse course.

3. AIRCRAFT CONFIGURATION

F-105 BLUE 1, 3, 4

5 - 1000-lb bombs
2 - 450-gallon wing tanks
1029 rounds 20mm

F-105 BLUE 2

4 - CBU-24s
2 - 450-gallon wing tanks
1029 rounds 20mm

All F-105 aircraft camouflaged.

MIG-17

Ordnance unknown.
Camouflaged.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered clouds 3-5 miles in haze. Haze layer to 6000 ft, clear above haze.

BLUE 1, 2, 3, 4

Altitude: 4000-5000 ft
Heading: 080°
Speed: 480-500 kt
Flight Formation:

Flight in process of joining up after bomb run. BLUE 2 1500 ft back on the left side of BLUE 1. BLUE 3 4000 ft behind lead and BLUE 4 1000 ft behind BLUE 3 on right side.

5. INITIAL DETECTION

BLUE 3 calls bogeys at 10 o'clock. Lead rogers the call and identifies the bogeys as a MIG in trail of a F-4 approximately 2000 ft back. (See Event 46, Volume I.) MIG calls had been heard in the area prior to this sighting. Also BLUE Flight sighted two flights of four MIGs each, earlier, as they were coming into the target.

6. ACTION INITIATED

The MIG rolled out of its turn almost directly in front of BLUE 1. BLUE 1 moved up to 2000 ft and began to fire.

7. SITUATION DEVELOPMENT

The F-4 was in a left turn when sighted at 10 o'clock. The F-4 rolled out almost directly in front of BLUE Flight. BLUE 1 just moved up into the MIG's 6 o'clock and at 2000 ft out began firing. At approximately 300 ft range the MIG broke hard left and down. BLUE Flight lost sight of the MIG in the haze near the ground.

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8. ORDNANCE

BLUE 1 568 Rounds 20mm expended.
MIG-17 Not observed to fire.

9. EQUIPMENT PROBLEMS

The only problem area noted during this encounter was: BLUE 1 did not appear to cause the damage expected from 568 rounds of 20mm - possible sight problem.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>REmarks</u>
*BLUE 1	4000	800	70	These figures are estimated. BLUE 1 was not interviewed. He did have considerable fighter experience.
*BLUE 2	500	-	-	BLUE 2 was a junior officer, approximately 500 hrs total flying time. This was his first unit assignment out of Nellis Gunnary School.
BLUE 3	-----Unknown-----			
*BLUE 4	3000	375	60	Fighter experience 1400 hrs F-100 and approximately 350 hrs F-86.

Comments:

BLUE 2 - remarked that a AAM probably would not have been a good weapon to use during this encounter. The MIG was quite close and the proximity of the F-4 would have restricted using a missile.

BLUE 3 - the turning capability of the MIG 17 made following him during his break almost impossible.

11. DATA SOURCES

Project Interviews: BLUE 2, 13 March 1967.
BLUE 3, 13 March 1967.
BLUE 4, 6 February 1967.

Messages, Reports:

7AF OPREP-3 258 27 September 1966.
7AF 0212352Z, DOI30492 September 1966.

12. NARRATIVE DESCRIPTION

BLUE Flight had just completed its bombing run on the Dau Cau highway and rail bridge and was in the process of joining up. The flight had just rolled out on a heading of approximately 080° altitude 4-5000 ft airspeed 500 kt. BLUE 3 called bogeys at 10 o'clock. BLUE 1 identified the bogeys as a MIG chasing an F-4. The F-4 and MIG were in a left turn at this time so that their bellies were up to BLUE Flight and they could not see them. It is believed that the F-4 did not know the MIG was at his 6 o'clock position. The MIG was 2000 ft behind the F-4 and in a very good attack position. The left turn carried the MIG almost directly in front of BLUE 1, about 2000 ft. BLUE 1 moved into position and began firing, and continued firing down to 300 ft at which time the MIG broke hard left in what amounted to a Split-S and dove to the deck. BLUE Flight turned left, attempting to keep the MIG in sight but lost sight of him in the haze as he neared the ground. The flight then turned back right and continued to egress the area. BLUE 1 fired 568 Rounds of 20mm at the MIG. He and BLUE 3 saw hits (flashes) on the MIG's right wing. The MIG was camouflaged - black, green, and red.

* Estimated from author's personal knowledge.

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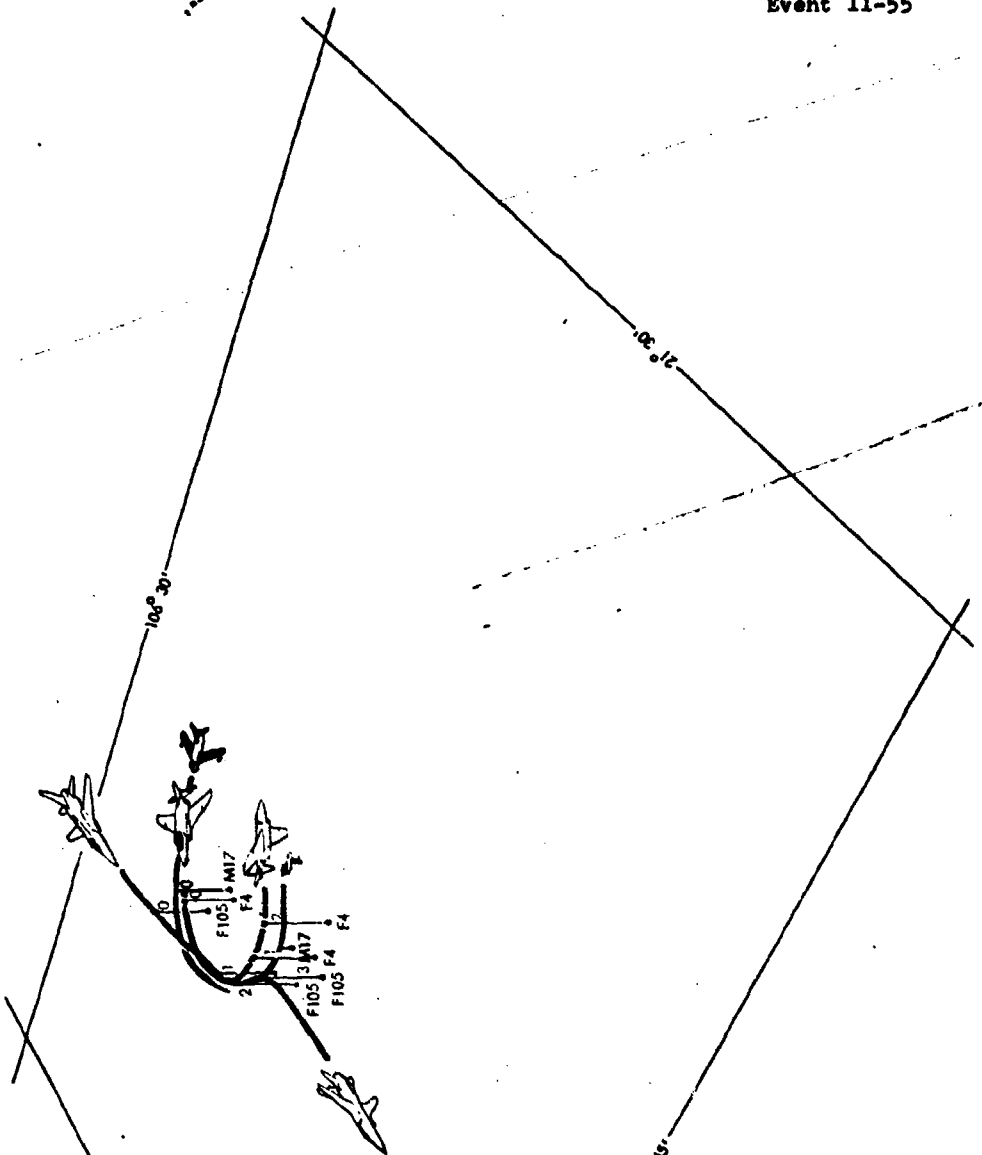
RED BARON EVENT II-55 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	Head ~080 Speed ~500 KIAS Alt. ~4000 ft	Kept tanks - closed in on MIG-17	BLUE Lead closed in on MIG.	BLUE Lead called "Bogeys 12 o'clock." MIG clearing F-4C.	MIG was chasing F-4C.	BLUE Flight was just off target and rejoining. Everyone set up for air/air as soon as off target.
T ₁	BLUE 1 beginning to approach firing range. In right turn (30° bank) about 2000 ft range.	BLUE Flight following B1.	BLUE Lead getting ready to fire.	B3 and B4 watching for other MIGs.	MIG-17 about 200 ft behind F-4C.	
T ₂	BLUE Flight had increased g's as much as 5 g.	B4 turned a bit just to see what was happening. Did not attempt firing pass.	BLUE Lead fired on MIG-17.		MIG-17 broke to left and down.	
T ₃					MIG recovered about 100 ft above trees and was pulling up. No smoke visible.	B3 thought the MIG might have hit but B2 thought he had recovered. (F-4C may have been shot down, but got to coast?)

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Event II-55



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Event II-56

Aircraft Involved: Four F-105s vs two MIG-17s

Result: One MIG-17 destroyed

Vicinity of Encounter: 21°20'N/106°17'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 September 1966/1000H

One F-105F and three F-105Ds (BLUE Flight) were on an IRON HAND mission with an initial orbit point at 21°14'N/106°25'E. The IRON HAND Flight was to attack SAM sites in support of the strike group consisting of a total force of forty F-105s and eight F-4Cs. The target was JCS 16, the Dap Cau HW/RR bridge.

2. MISSION ROUTE

Departed Korat on a northeast heading to the Gulf of Tonkin for an air-to-air refueling with Brown Anchor. Entered NVN just northeast of Cam Pha Harbor on a heading of 275° altitude 6-9000 ft, and speed of 520 kt. Then proceeded to assigned orbit point.

3. AIRCRAFT CONFIGURATION

F-105F BLUE 1, F-105D BLUE 2

- 2 - SHRIKE (AGM-45)
- 2 - Rocket pods (2.75") LAU-3A
- 1 - 650 gal centerline tank
- Full 20mm ammunition - 1029 rounds
- BLUE 1 had IFF - on, TACAN - off, doppler - on, radar - standby
- All F-105 aircraft camouflaged

F-105D BLUE 3 and 4

- 4 - Rocket Pods (2.75") LAU-3A
- 1 - 650 gal centerline tank
- Full 20mm ammunition - 1029 rounds

MIG-17

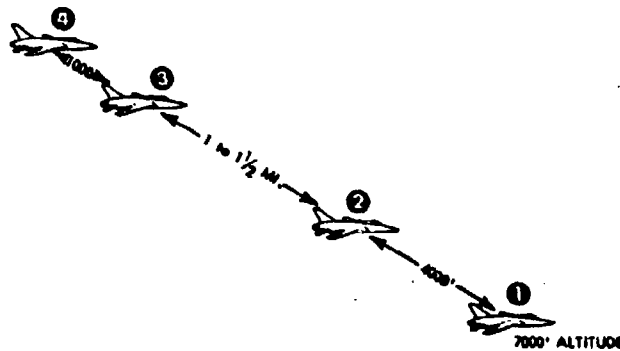
- Guns probably
- Silver in color
- No external stores

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: One-eight scattered clouds with haze below 6000 ft. Visibility unlimited above 6000 ft, 4-5 miles in the haze.

	BLUE	BLUE
	1 2	3 4
<u>Altitude:</u>	-----7000 ft-----	---6000 ft---
<u>Heading:</u>	-----110° to 120°-----	-110° to 120°
<u>Speed:</u>	-----.83-----	---Unknown---
<u>Fuel:</u>	10,000 lbs approx. (B-1)	-Tanks empty-

Flight Formation



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5. INITIAL DETECTION

Event II-56

MIGs were sighted visually by BLUE 4 at 4000 ft, in BLUE 1's and 2's 6 o'clock position and closing. BLUE 1 and 2 were in a right turn. BIG EYE gave MIG warnings during the encounter.

6. ACTION INITIATED

BLUE 4 told BLUE 1 to go to afterburner and go into an easy right turn. BLUE 1 complied and departed the area.

7. SITUATION DEVELOPED

BLUE 3 and 4 then turned into MIGs who went into a left turn after not being able to overtake BLUE 1 and 2. BLUE 3 got angle off on MIG-1 and fired hitting him. MIG-1 leveled off, then went into a shallow right turn. MIG-2 broke left and in front of BLUE 3 and 4. BLUE 4 fired a burst at MIG-2 but stayed with BLUE 3. BLUE 3 again got angle off and distance on MIG-1, fired and knocked a part off the right wing tip. MIG-1 pilot ejected and BLUE 3 and 4 followed it until impact. BLUE 3 and 4 then switched leads at which time MIG-2 was seen at 7000 ft (5000?), and 5 o'clock to BLUE 3 and 4. BLUE 3 and 4 then lit burners and egressed the area.

8. ORDNANCE

	<u>Gun fired/hit</u>
BLUE 1, 2	0/0
BLUE 3	1029/yes
BLUE 4	150/0
MIG-1, 2	1/0

9. EQUIPMENT PROBLEMS

BLUE 1 - Did not load tape recorder.
BLUE 3 - Could not jettison centerline tank.
BLUE 4 - Gun camera was not loaded with fresh film.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>				
Front	3800			F-80, 86, 100, 105 (in Germany)
<u>BLUE 2</u>	Unknown			
<u>BLUE 3</u>	600	30	about 75	
<u>BLUE 4</u>	3500	400	about 50	Fighter Weapon School Instructor

Comments on this Encounter

BLUE 3 would have had a pretty fair chance of getting MIG-2 if he had a missile. Praised B-4 for staying with him and clearing his 6 o'clock position, watching for other MIGs.

BLUE 1 does not believe MIGs were GCI controlled. Believes that all the MIGs were trying to do was to set up in a normal pursuit curve. He lost his rate of closure and tried to gain it back by only going on the inside of the turn.

BLUE 4 - MIGs probably did not see BLUE 3 or 4 when they went after BLUE 1 and 2. BLUE 1 and 2 did not see MIG due to poor visibility to the rear.

Comments from Overall Experience

BLUE 1 - A TOT of two minutes apart works good. In this way we do not have to get to minimum fuel before we leave the area. Therefore, before, if we had gotten bounced by MIGs and forced to use afterburner, we would have been on fumes when we hit the tanker. Lack of tracking flares on AGM-45 severely reduces its effectiveness.

BLUE 4 - Gun camera is no good, too many prisms, light quality is poor. To switch from "air-to-ground" to "air-to-air" ought to be on one switch. A number of elements in a flight increase range pick-up; F-4 was poor, due to its visibility. Radar-directed AAA was not leading properly. As the B-66s moved farther away, their jamming became less effective. QRC-160 looked good but didn't like it as a pod; felt it should be built into aircraft. There was a problem on engine wear due to excessive high power settings when some squadrons would not use water injection because runway was sufficient for takeoff.

BLUE 3 - Felt training was not adequate for MIG encounters. Pilot has to throw too many switches. Felt he could use more acceleration. Couldn't understand why MIGs don't look for the other element since everyone knows they fly in fours.

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11. DATA SOURCES

Event II-56

Project Interviews: BLUE 1 (Front), 3 Feb 1967; BLUE 3, 17 Feb 1967; BLUE 4, 6 Jan 1967.

Messages, Reports:

7AF OPREP-3, Z211124Z; DOCO 25830 Sept 66.
7AF 021235Z; DOI 30492 Sept 66.

12. NARRATIVE DESCRIPTION

BLUE Flight was on a WILD WEASEL Mission, northwest of Haiphong. BLUE 1, with BLUE 2 about 4000 ft back, just finished firing at a suspected SAM site and was in a right turn to come around for another shot. BLUE 2 and 3 were about 3000 ft low during the fire and continued on the firing heading of 310° for a few seconds to see if they could see the missile hit, climbing to an altitude of 9000 ft. BLUE 3 and 4 then also went into a right turn 90° bank and descended down to 6000 ft. On reaching 4000 ft both BLUE 3 and 4 saw two MIG-17s at 4000 ft closing in at the 6 o'clock position of BLUE 1 and 2 who were at 7000 ft in a right shallow turn. BLUE 3 then went to setting up his switches while BLUE 4 called out the MIGs to BLUE 1 and 2 telling them to go into an easy right turn. BLUE 4 then asked BLUE 3 if he had the MIG to which he said, "Yes." BLUE 1 and 2 then rolled wings level, nose up 10°, and jettisoned their tanks, keeping their ordnance. BLUE 1 and 2 then nosed over, went into a right 30° bank turn in afterburner and tried to keep the MIGs at 4000 ft distance while BLUE 3 and 4 attacked them. BLUE 3 and 4 meanwhile jettisoned their ordnances but only BLUE 4 could jettison his tank. They themselves then went into afterburner and rolled in on the MIGs. The MIGs stayed with BLUE 1 and 2 for a short period descending and then broke to the left in a tight turn. By this time BLUE 3 and 4 were within 2000 ft range and BLUE 3 led MIG-1 and fired. BLUE 1 and 2 were descending to the deck and out of the area. BLUE 3 hit MIG-1 and MIG-1 rolled out level and then into a 1-1/2g turn to the right. MIG 2 broke sharply to the left, passing in front of BLUE 3 and 4. BLUE 4 shot at him but did not record any hits. BLUE 4 stayed with BLUE 3 and BLUE 3 again drew angle and lead on MIG-1 who was in a right turn. BLUE 3 fired again and this time cut off a portion of MIG-1's right wing tip. Pilot's canopy was then observed to be jettisoned and pilot ejected past BLUE 3. BLUE 4 saw pilot in chute. Both BLUE 3 and 4 followed aircraft to the ground at an altitude of 1000 ft and impact. At this time BLUE 3 and 4 swapped leads. MIG-2 was then seen again closing at the 5 o'clock position at 5000 ft. BLUE 3 and 4 lit afterburner and egressed the area rejoining with BLUE 1 and 2 before reaching the coast. BLUE Flight then refueled and returned to home base.

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RED BARON EVENT II-56 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	Head 310° Alt. 3000 ft	B3 and 4 continued after launch on 310° to see if they can see SHRIKE impact. Climb to 9000 feet, then turn right and descend to 6000 feet.	B1 and 2 are at 7000 ft and launch a SHRIKE at a SAM site, then start right descending turn.			
T ₁	Head 120° Alt. 6000 ft	In right turn. B3 sees MIG, as does B4, at 2 o'clock, B3 starts setting up switches.	B1 and 2 level wings, slight nose up, and Jettison tanks. Then B1 and 2 drop nose, go into a descending right 300° turn and engage afterburner.	B4 calls lead, "You have two MIG-17s on you. They're well out. Just light the burner, and start an easy right turn." "Do you have them 3?" B3 "R, I've got 'em." "Say again alt." B3, "Roger, 4000 ft."	MIG in right turn. 8000 ft out, 6 o'clock to B1 and 2 at 4000 ft.	WEASEL tape was not loaded. In turn B1 sees MIG 1.
T ₂	Alt. 3000 ft Speed 550-575	B3 and 4 closing on MIGs in afterburner. B3 and 4 both jettison their ordnances and B4 his tank.	B1 sees B3 and 4 closing to the inside of MIGs. B1 and 2 passing 3000 ft at a ground speed of 645.	B3 to 4, "Clear out from behind me." "ok, I'm punching it." "Burner." B1 to 3, "Do you have him 3?" B3, "yes." B1, "I'll hold him here if you can get on him."	MIGs not gaining on B1 and 2 but holding approximately 4000 ft out. Then MIGs break off to the left and descends.	B3 is unable to jettison his centerline tank. B4 jettisons everything.
T ₃	Alt. 2000 ft A/S 550-575 3g turn	B3 is now 3000 ft out and fires ahead of MIG 1 and gets a few hits.	B1 and 2 head for the deck and between the valleys		MIG is in tight left turn at first, then levels out and goes into a slow reversal turn to the right. MIG 2 follows at first.	Metal flew off of MIG 1 later in the reversal turn.

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RED BARON EVENT II-56 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T4	Alt. 2000 ft A/S 550-575 1-1/2 g turn	B4 fires at MIG 2 as he passes in front. B4 then stays with B3. B3 turns to the inside of MIG 1 again and draws Lead on him. Distance now between 1500 to 1200 ft.			MIG 2 breaks hard left and passes in front of B3 and 4. MIG 1 continues in right turn.	
T5	Alt. 2000 ft A/S 550-575	B3 fires at MIG 1 and takes off a chunk of metal off of right wing. B3 sees canopy fly off. B4 sees pilot in chute pass him.		B4 to B3, "Good shooting." B1, "Did you get him?" B3, "I've got him."	MIG 1 is hit. Pilot ejects a little after.	B4 does not see pilot eject. He is looking at other MIG and clearing B3's 6 o'clock.
T6	Alt. 1000 ft	B3 and 4 follow MIG down to crash point in a right descending turn. B4 8000 ft back. Comes up on the right and assumes Lead.		"OK, you have me. Roger," says B3. "B4 Roger." B3, "All right, my gun is empty at this time, my gun is empty. You take the Lead." B4, "Rog, I'll come by on your right."	MIG 1 crashes.	
T7	Alt. A/S in afterburner	B3 and 4 see a MIG at 5000 ft and closing from their 5 o'clock position. B3 and 4 light afterburner and egress area.		B4 to B3: "All right, let's light burners. Let's just unload it and go."		Low on fuel. Rejoin with B1 and 2 before reaching coast.

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7. SITUATION DEVELOPMENT

Event II-58

BLUE 3 opened fire on MIG 1 but missed. MIG 1 slid out, then back in behind BLUE 3. BLUE 3 headed for the deck with MIG 1 in trail and firing. Meanwhile MIG 2 was 2-3000 ft behind MIG 1 and 7-8000 ft in front of BLUE 4. BLUE 4 pulled his nose through MIG 2 and fired 125 rounds before his gun jammed. After his gun quit firing, he broke down and right and when he pulled out, he did not see any MIGs on BLUE 3's tail. Before breaking, BLUE 4 saw a possible hit on the belly of the MIG and a definite hit approximately 6-7 ft behind the canopy on the fuselage. As elements, BLUE Flight remained in the area looking for MIGs but without further MIG encounters. BLUE Flight then rejoined and exited the area.

8. ORDNANCE

(No. fired/No. hits)

	<u>Cannon</u>	<u>Remarks</u>
BLUE 1, 2	0/0	
BLUE 3	200/0	
BLUE 4	125/1	BLUE 4 got a positive hit on the fuselage of MIG 2.
MIG 1	1/0	
MIG 2	0/0	
MIG-17 Flight	0/0	

9. EQUIPMENT PROBLEMS

BLUE 1 None
BLUE 2 None
BLUE 3 None
BLUE 4 Gun quit firing after 125 rounds (possible burst limiter installed).

10. AIRCREW COMMENTS

Experience

No aircrew experience data available.

Comments on this Encounter

The flight felt that excessive UHF radio chatter greatly hampered the flight's effectiveness when jumped by MIGs. So much chatter on the radio makes it difficult to maintain flight integrity.

Comments from Overall Experience

BLUE 1: The big problem encountered was the haze which restricted the visibility to a maximum of four miles slant range. This is a definite reason for having an aircraft with a permanent-mounted gun. You would have to identify the target visually prior to firing and would probably be too close to the test for air/air missiles.

11. DATA SOURCES

Project Interviews: BLUE 1, letter 3 Mar 1967.

Messages, Reports

Resumé of 388TFW FASTEL DOI-03103, September and OPREP 4/358

7AF 211432Z Sept 66 DOCO 25846

7AF 211053Z Sept 66 DOCO 25833

7AF 212352Z Sept 66 DIO 30492

12. NARRATIVE DESCRIPTION

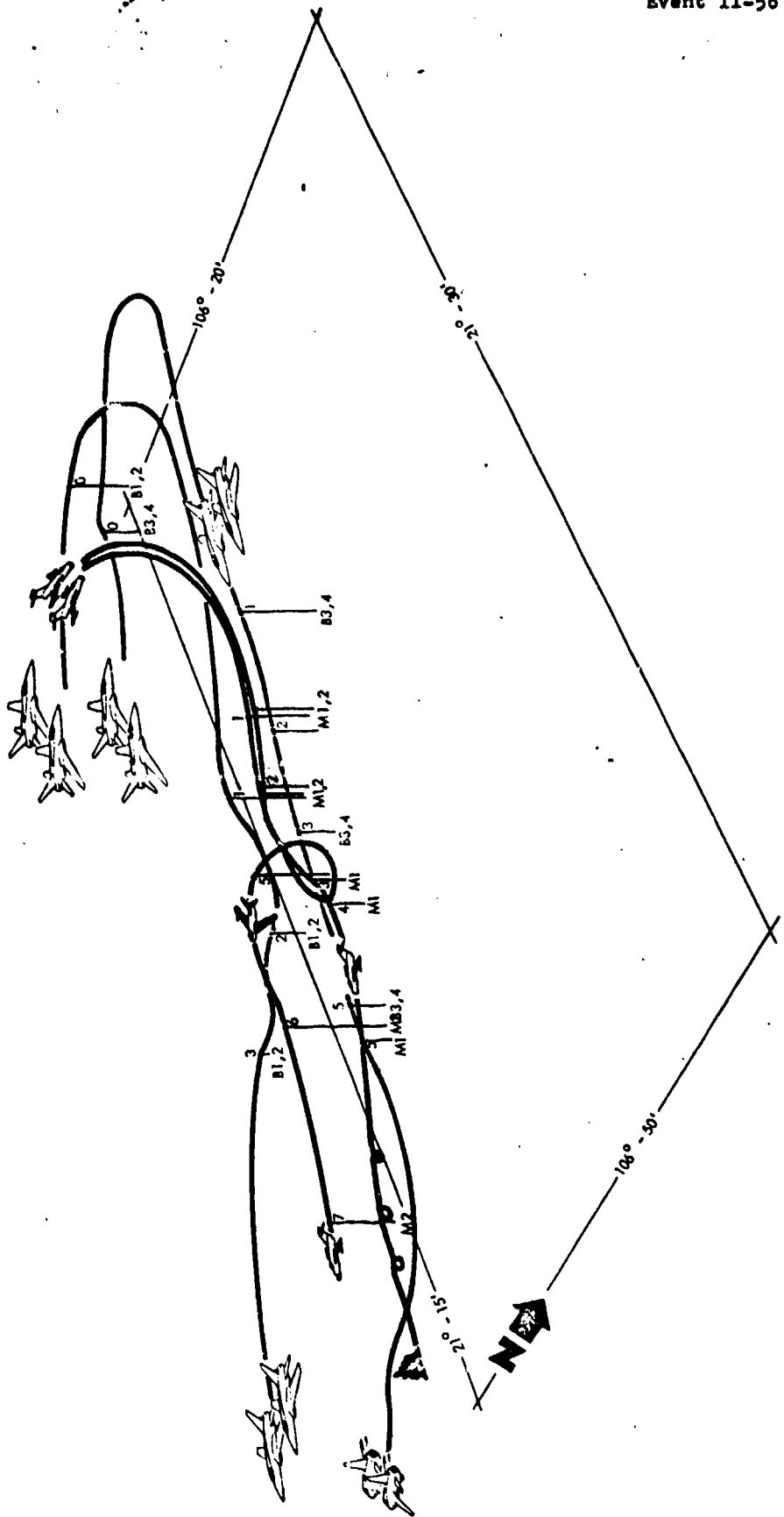
BLUE Flight was inbound to the target on a flak suppression mission to support a force of about 48 F-105 and F-4 fighters attacking the Dap Cau RR/Highway Bridge, seventeen miles northeast of Hanoi. This was about the third day in a row that this bridge was put under attack.

The entire force was composed of twelve flights of four aircraft each with individual flight times-on-target spread over a period of about one hour. Thus, the flights were attacking in trail with spacing of 3-5 minutes between flights. Two of the flights were flak suppression, two flights were IRON HAND support and two flights of F-4C aircraft were assigned strike/CAP.

BLUE Flight was about mid-stream in the flow of attack flights at 21°14'N/106°52'E, cruising at 8000 ft, 450 KCAS and heading 270° when they observed a flight of four MIG-17s at 3 o'clock approximately four miles out at the same altitude and headed the same direction as BLUE Flight. Area MIG warnings had been received previously from the picket radars and

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Event II-56



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Event II-57

Aircraft Involved: Four F-105Ds vs two MIG-17s

Result: One MIG destroyed.

Vicinity of Encounter: 21°15'N/106°22'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 September 1966/1015H

Four F-105Ds, strike aircraft inbound to JCS 16, railroad/highway bridge at 21°11'N/106°05'E. Several MIG warnings had been given. Could hear other flights engaging MIGs in the target area. Numerous other flights (F-4C and F-105) striking in the same area.

2. MISSION ROUTE

Departed Takhli refueling over the Gulf of Tonkin with coasting in due west of the target area to take advantage of the mountainous terrain.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

6 - 750-lb bombs (or 5 - 1000-lb bombs)
2 - 450-gal wing tanks
Camouflage paint, IFF off

MIG-17 MIG 1, 2

Both clean
MIG 1 - silver color with red star.
MIG 2 - Camouflaged. Lighter tans and greens than U.S. aircraft.
No insignia markings noted.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear with visibility 5 to 6 miles in haze.

	<u>BLUE 1, 2</u>	<u>BLUE 3, 4</u>
<u>Altitude:</u>	5000 ft	6000 ft
<u>Heading:</u>	270°	270°
<u>Speed:</u>	500 KTAS	500 KTAS
<u>Fuel State:</u>	Full internal plus some in wing tanks.	

5. INITIAL DETECTION

Numerous MIG warnings had been received and BLUE Flight heard other flights calling out MIG sightings and engagements. Approximately 1015H, BLUE 1 saw a MIG-17 low at his 12 o'clock heading south in a right turn.

6. ACTION INITIATED

BLUE 1 called out the MIG and descended to the 6 o'clock position in afterburner with BLUE 2 on his left wing leaving BLUE 3 and 4 as high cover. All aircraft retained their external stores.

7. SITUATION DEVELOPMENT

BLUE 1 came out of afterburner, closed in to 1500 to 2500 ft at 6 o'clock and fired one burst of 154 rounds. BLUE 1 and 2 observed hits in MIG's left wing. BLUE 1 passed MIG on left side and broke hard left, descending, in afterburner while jettisoning external stores. BLUE 2 saw MIG light afterburner, pull up and roll left behind BLUE 1 as BLUE 2 started shooting from MIG's 6 o'clock position (280 rounds) observing a fragment leave MIG's aft section. BLUE 2 broke hard left, saw BLUE 1, then observed an explosion in the area where MIG 1 could have hit if it continued the right descending break it entered as BLUE 2 shot.

BLUE 3, with 4 on his wing, at 5000 ft altitude trailing BLUE 1 and 2, spotted MIG 2 at 12 o'clock, 4000 ft range in a shallow left turn as BLUE 2 jettisoned external stores and accelerated to join BLUE 1. BLUE 3 (and 4) jettisoned external stores and started to close on MIG 2 as he decided to shoot from that range. BLUE 3 fired 135 rounds as the gun jammed and MIG 2 broke hard left downward at the start of BLUE 3's firing. No hits observed. BLUE 3 and 4 continued left descending turn and egressed.

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Event II-57

8. ORDNANCE

	<u>Burst</u>	<u>Rounds Fired</u>	<u>Result</u>	<u>Remarks</u>
BLUE 1	1	154	MIG 1 damaged	Gun jam
BLUE 2	1	280	MIG 1 destroyed	
BLUE 3	1	135	Probable miss	Gun jam
BLUE 4	0	0		No attempt

MIG 1,2 - Clean

9. EQUIPMENT PROBLEMS

BLUE 1 - Gun jam, suspected cycle delay timer prevent rapid second burst.
BLUE 2 - Gun sight reset for air-to-air too time consuming and distracting. Shot "blindly" at MIG.
BLUE 3 - Gun jam. Suspected burst limiter installed. Should have been removed.
BLUE 4 - No malfunctions.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
<u>BLUE 1</u>	No data		
<u>BLUE 2</u>		300	86
<u>BLUE 3</u>	5000	200	20
<u>BLUE 4</u>	No data		

Comments on This Encounter

BLUE 1 and 2 feel they would have each scored a kill if the guns had continued to function as they expected.

The switch repositioning for change over from air-to-ground and air-to-air weapons system employment is too involved, time consuming, and distracting of vision and thought at a most critical time.

11. DATA SOURCES

Project Interviews: BLUE 1, 15 Mar 67; BLUE 2, 14 Mar 67; BLUE 3, 17 Feb 67

Messages:

7AF OPREP-3 211041Z Sep 66 DOCO 25827 Sep 66

12. NARRATIVE DESCRIPTION

BLUE Flight was in Fluid-4 formation with BLUE 3 and 4 to the right side, 500 kts CAS, 500 ft, heading west inbound to target when BLUE 1 saw MIG 1 12 o'clock low, southerly heading and a gentle right turn. BLUE 1 called out the MIG as BLUE 1 and 2 selected afterburner in the descending turn to position for a gun attack. Everyone kept their external stores with intentions of striking target after the engagement. BLUE 1 repositioned all necessary switches while descending and came out of afterburner when his overtake was sufficient. BLUE 2 stayed with 1 in a fighting wing position but did not set up his switches for air attack (sight set for dive bombing).

MIG 1 appeared to be below ridge tops (maybe 500 ft AGL) with 300 to 350 KTAS and turning toward Kep airfield. Numerous MIG warnings had been broadcast and several flights had engaged MIGs as BLUE Flight entered North Vietnam.

BLUE 1 closed on MIG 1 with about 575 kts CAS in perfect position at 6 o'clock with the MIG in a 15 to 20° banked right turn. He fired one burst (154 rounds) at 2500 ft estimated range and BLUE 1 and 2 observed the hits on MIG 1's left wing. BLUE 1 repositioned his aim point to the MIG's fuselage and tried firing again but got no response. MIG 1 stayed in the gentle turn. BLUE 1 brought the power to idle to reduce overtake while cycling the trigger to try and fire the gun again. Unable to stop the overtake, BLUE 1 goes to the 9 o'clock position "50 feet" off the MIG and then breaks down left in afterburner and jettisons external stores. MIG 1 pulls up as BLUE 1 breaks and BLUE 2 positions to shoot from probably 1000 ft in trail.

As BLUE 1 was breaking and BLUE 2 was shooting (280 rounds), BLUE 3 and 4 were still at 4500 clearing the area when BLUE 3 saw MIG 2 at 12 o'clock, 4000 ft range. BLUE 3 jettisoned external stores, reset the switches for air-to-air and observed a radar lock-on of 7000 ft but assumed it to be a ground return lock-on as he estimated 4000 ft range. Thinking the MIG may start maneuvering at any movement, BLUE 3 decided to shoot immediately even with the aim point slightly off. As BLUE 3 opened fire, MIG 2 initiated a hard left descending break and BLUE 3's gun stopped after shooting 135 rounds. BLUE 3 observed his jettisoned bombs exploding as MIG 2 broke and thinks that caused the break or that

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Event II-57

12. NARRATIVE DESCRIPTION (Continued)

MIG 2 was observing MIG 1 and saw him hit the ground. BLUE 3 tried firing his gun again without success while doing a left turn and watched MIG 2 level out at the tree tops heading northwest toward Kep airfield.

As BLUE 3 spotted MIG 2 and BLUE 1 was in the break from MIG 1, BLUE 2 (without a gunsight) saw MIG 1 roll to the left as if trying to position on BLUE 1 so BLUE 2 pointed his nose at MIG 1 and started shooting, observing a piece of the aft section departing MIG 1. MIG 1 rolled right and BLUE 2 continued the left turn into a hard break to rejoin BLUE 1 as both BLUE 1 and 2 saw an explosion in the vicinity of where MIG 1 was foundering.

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RED BARON EVENT II-57 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	Heading west, 5000 ft, in Fluid-4, using drop tank fuel, 6 - 750 lb bombs	B1 spots M1 12 o'clock low going south. Takes B2, leaves B3 and 4 high, starts in afterburner to position for a gun attack.	None	B1 calls "MIG at 12 low." B2, 3 acknowledge and spot M1. B3 and 4 to look for other MIGs.	In gentle right turn at approximately 500 ft. Estimated 300 to 500 KTAS. Clean - silver color.	B1 and 2 in descending left turn closing rapidly on M1. Come out of afterburner during descent. Everyone retains external stores. B1 sets up for air-to-air.
T ₁	Est. 1500 ft 550 to 575 CAS Military pwr.	B1 opens fire at estimated 2500 to 1500 ft range. B2 1000 ft behind B1.		B1 calls MIG hit. B2 confirms hits in left wing.	Hit on mid-portion of left wing. No immediate reaction.	B1 can't get gun to shoot again, overtakes MIG to the left and breaks hard left as M1 pulls up and rolls left.
T ₂	B1 clean aircraft. B2, 3 with stores.	B2 shoots at M1 in left turn. B3 and B4 jettison stores and B3 repositions switches for gun attack.		B1 calls "jettisoning stores." B3 calls M2 at his 12 o'clock.	M1 receives fire from B2 and rolls right. M2 at 4000 ft, est. 400 kts heading west in gentle left turn from B3.	B2 sees M1 lose piece of aft section. B3 tries radar lock-on but thinks 7000 ft is ground. Estimate M2 at 4000 ft range.
T ₃	All clean.	B1 and 2 see smoke on ground where M1 should have been. B3 opens fire at est. 4000 ft. Gun jam after 135 rnds.	B4 flies wing on B3.	B1 and 2 call M1 crashed.	M1 assumed destroyed. M2 starts hard left break at start of B3's firing.	B1 and 2 egressing. B3 starts to follow M2 but gun inoperative. Continues left turn to egress with B1 and 2.
T ₄	All BLUE aircraft egressing east.				M2 at tree top level heading northwest for Kep.	B3 and 4 observed smoke in area of M1 engagement.

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Event II-58

Aircraft Involved: Four F-105D vs four MIG-17 and two MIG-21

Result: One MIG-21 damaged

Vicinity of Encounter: 21°14'N/106°52'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 September 1966/1025H

BLUE Flight of four F-105Ds were on a flak suppression mission with a force of forty F-105s and eight F-4Cs attacking the Dap Cau RR/Highway Bridge at 21°11'N/106°05'E. BLUE Flight was the first of five F-105 flights from Korat. The Takhli force preceded the Korat force on the target on this date. At least two F-105 flights and two F-4C flights had encountered MIGs on this mission prior to BLUE Flight (see Events II-55 and II-57 in this volume and Events I-46 and I-47 in Volume I).

2. MISSION ROUTE

BLUE Flight departed Korat RTAFB, Thailand, proceeded directly to the Gulf of Tonkin refueling track, then north to 21°13'N/107°22'E, west to 21°13'N/106°52'E, west to 21°12'N/106°41'E (MIG encounter at this time). Flight remained in area for a while and then egressed over reverse route.

3. AIRCRAFT CONFIGURATION

F-105D BLUE 1, 2, 3, 4

4 - CBU-24
2 - 450 gal fuel tanks
1029 rounds 20mm

MIG-17 MIG 1, 2, 3, 4

Unknown

MIG-21 MIG 1, 2

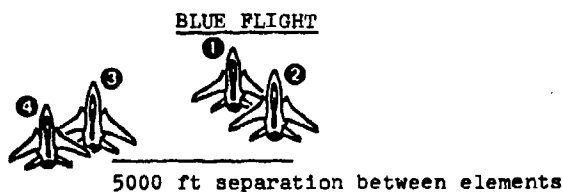
Unknown

4. FLIGHT CONDITIONS PRIOR TO ENGAGEMENT

Weather: Haze layer from surface to 6000 ft, visibility four miles, clear above 6000 ft.

	BLUE				MIG-17				MIG-21	
	1	2	3	4	1	2	3	4	1	2
<u>Altitude:</u>	-----	8000	-----	-----	-----	8000	-----	-----	Steep climb	
<u>Heading:</u>	-----	270°	-----	-----	-----	270°	-----	-----	--Unknown--	
<u>Speed:</u>	-----	540 kt	-----	-----	-----	Unknown	-----	-----	--Unknown--	
<u>Fuel State:</u>	-----	Full Int.+	-----	-----	-----	Unknown	-----	-----	--Unknown--	

Flight Formation



RED FLIGHT

Unknown

5. INITIAL DETECTION

BLUE Flight, heading 270° at 8000, saw a flight of MIG-17s, 4 nmi at 3 o'clock on same heading and altitude. BLUE Flight then descended to 4500, 270°, 540 kt, and did not see the MIG-17s again. Shortly after level off, BLUE 2 called, "Two MIG-21s at 12 o'clock." BLUE 2 had just momentarily seen two MIG-21s as they passed in front of BLUE Flight in a steep climb. Very shortly after BLUE 2's call, BLUE 3 called two MIGs coming down from above and called for the flight to break as the MIGs were closing on the Lead element.

6. ACTION INITIATED

BLUE 1 called for the flight to jettison ordnance and break right. As BLUE Flight started a right diving turn, MIG-1 crossed in front of BLUE 3 in his attack on the Lead element.

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Event II-58

a number of previous attack flights that had or were in a MIG engagement. In an attempt to avoid an engagement while attacking the target, BLUE Flight descended into the haze layer and leveled off at 5000 ft MSL and 540 KTAS, about 2000 ft above the highest terrain in the area. The MIG-17s were not seen again. Slant range visibility in the haze was a maximum of four miles.

A few minutes later at 21°12'N/106°41'E (according to the OPREP) or about fifteen miles from the target (according to BLUE Lead's letter)* at 21°12'N/106°21'E, with the second element trailing about 5000 feet, BLUE 2 called, "Two MIG-21s at 12 o'clock." The MIGs were observed climbing from below BLUE Flight and passing through 8000 feet in a steep climb. BLUE Lead did not see the MIGs and BLUE 2 called that he had lost them and that he had spotted them when the sun had reflected off of them.

Almost immediately after that, BLUE 3 observed the MIGs as they completed a modified loop and attacked the lead element from 3 o'clock. BLUE 3 then called for the lead element to break right as the MIGs were closing. BLUE Lead called for the flight to jettison the bomb load and tanks and started a right diving turn.

The MIG's attack maneuver brought him across BLUE 3's 12 o'clock position and about 1500 feet in front of BLUE 3. BLUE 3 fired about 300 rounds of 20mm at MIG 1 but missed. The MIG continued to turn right and pulled up into a half chandelle approximately 800 feet off BLUE 3's right wing. BLUE 3 pointed his nose down and headed for the deck. The MIG-21 followed BLUE 3 down firing since BLUE 3 saw tracers going by his aircraft.

MIG 2 was 2-3000 feet behind MIG 1 and 7-8000 feet at BLUE 4's 11 o'clock. BLUE 4 lined up and pulled the F-105 nose up through MIG 2 firing 125 rounds of 20mm before his cannon quit firing. When his cannon quit firing, BLUE 4 broke down and right and as he pulled out he observed that both MIGs had broke off from BLUE 3's 6 o'clock. BLUE 4 observed one possible hit on the belly of MIG 2 and a definite hit about two-thirds of the way up the fuselage, 6-7 feet behind the canopy.

BLUE Flight remained together in elements and started looking for other MIGs that were apparently in the area at the same time. The flight was unsuccessful in their hunt, then rejoined and returned home.

Fifteen miles from the target appears more reasonable. The MIG-21s are reported to have climbed up from below the flight and would not have had maneuvering room in the first position.

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Event II-59

Aircraft Involved: Four F-105s vs three MIG-17s

Result: One MIG damaged

Vicinity of Encounter: 21°11'N/106°16'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 September 1966/1032H.

Four F-105s (BLUE Flight) were one flight of a twelve flight force attacking JCS 16, a railroad/highway bridge at 21°11'N/106°05'E. As BLUE Flight was enroute to the target, three MIG-17s jumped them in the vicinity of 21°11'N/106°16'E.

2. MISSION ROUTE

BLUE Flight departed Korat, refueled over the Gulf of Tonkin, proceeded North and then turned West to enter Route Package IV about 12 miles North of Cam Pha Harbor. The flight then flew West to 21°14'N/106°25'E and turned Southwest into the Delta where they were attacked by a flight of MIG-17s. Return route was the reverse of above.

3. AIRCRAFT CONFIGURATION

F-105D BLUE 1, 2, 3, 4

2 - 3000 lb bombs
1 - centerline 650 gallon fuel tank
1 - 20mm cannon (1029 Rounds)
All F-105s were camouflaged.

MIG-17 MIG 1, 2, 3

1 MIG-17 appeared camouflaged.
2 MIG-17s were grey silver in color.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Haze layer from surface to 6000 ft. Visibility in haze 4-5 miles.
Visibility above haze - very good.

	BLUE				MIG		
	1	2	3	4	1	2	3
<u>Altitude:</u>				3,000 ft			3,000 ft +
<u>Heading:</u>				254°			254°
<u>Speed:</u>				550			550 +
<u>Fuel State:</u>				Approx 10,000 lbs			Unknown
<u>Flight Formation:</u>							

Unknown - probably fluid four with wingmen spread 6-800 ft, 20°-30° back, and elements spread 1500 ft about 10°-20° back. Apparently the element was deployed to the right.

5. INITIAL DETECTION

Area MIG warnings were being broadcast on a regular basis by the radar picket aircraft. The flight in front of BLUE Flight (Event II-60) was attacked by MIGs as well as about four other flights in front of BLUE Flight. The MIGs in this event were initially observed in the 6 o'clock high position.

6. ACTION INITIATED

BLUE Flight immediately jettisoned ordnance and tanks and broke hard right.

7. SITUATION DEVELOPMENT

BLUE lead passed within 200 ft of one MIG, head-on. Neither fired. BLUE 1, 2, and 3 headed for the coast at a high airspeed. BLUE 4 was forced to modify his break with a momentary turn to the left and then back to the right in order to avoid a collision with BLUE 3's centerline tank. As BLUE 4 came back to the right a MIG-17 was at his 6 o'clock firing. BLUE 4 broke left and down and shook the MIG. BLUE 4 again turned east to rejoin his flight, saw a MIG-17 in front of him and fired, observing hits on the MIG. The MIG broke left and down with BLUE 4 passing 2-300 ft over him. BLUE 4 continued to the coast to rejoin his flight.

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8. ORDNANCE

(No. fired/No. hits)

	<u>Cannon</u>	<u>Remarks</u>
BLUE 1, 2, 3	0/0	
BLUE 4	300/Yes	Sparkles on wing and fuselage
MIG 1	Yes/No	Fired at BLUE 4, no hits.
MIG 2, 3	?/No	

11. DATA SOURCES

Project Interviews: None

Letters: None

Messages, Reports:

Résumé 388TFW DOI 03098 Sept 66.

OPREP-3, 7AF DOCO 25836 Sept 66;

7AD DOI 30492 Sept 66.

12. NARRATIVE DESCRIPTION

BLUE Flight of four F-105Ds was about the eighth flight in a stream of ten strike flights attacking JCS 16, a railroad/highway bridge located 16 miles northeast of Hanoi at 21°11'N/106°05'E. The bridge was under attack for either the second or third consecutive day. Area MIG calls were being transmitted by the radar picket aircraft (BIG EYE) and most of the flights in front of BLUE Flight had been attacked by MIGs. The flights were separated by 3-5 minute TOTs. The flight immediately in front of BLUE Flight (Event II-60) had been forced to jettison their ordnance to escape from the MIGs.

Ten miles short of the target while BLUE Flight was at 3000 ft 550 kts, heading 254°, three MIG-17s were spotted closing from 6 o'clock high. BLUE Flight broke hard right and jettisoned armament. BLUE 4 was forced to turn back to the left momentarily to duck BLUE 3's centerline tank. As BLUE 4 pulled back to the right, he saw one MIG-17 on his tail and muzzle flashes were coming from the nose of the MIG. BLUE 4 broke left and down to shake the MIG.

BLUE 1 passed within 200 ft head-on, to one of the MIGs, as he came out of the break. Neither the MIG nor BLUE Lead fired at each other, and BLUE 1, 2, and 3 headed for the coast at high speed.

As BLUE 4 attempted to rejoin the flight, he observed another MIG-17 between himself and his flight in the vicinity of 21°11'N/106°20'E. He maneuvered until he was on the MIG's tail and then fired 300 Rounds of 20mm, and observed sparks on the wing and fuselage of the MIG. The MIG broke left and down and BLUE 4 passed 200-300 ft over him and continued to the coast to rejoin his flight. As BLUE 4 passed over the MIG, he observed North Vietnamese markings.

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Event II-60

Aircraft Involved: Two F-105s vs four MIG-17s

Result: No Damage

Vicinity of Encounter: 21°11'N/106°13'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 September 1966/1030H

Two F-105s (BLUE Flight) were on a strike mission against JCS Target 16 (21°12'N/106°05'E), a railroad/highway bridge northeast of Hanoi. BLUE was originally a four ship flight, but BLUE 3 had ground aborted for an oil pressure malfunction, and BLUE 4 aborted for radio failure. This was a multiple flight strike, and encounter took place as BLUE was approaching their target.

2. MISSION ROUTE

Flight departed Korat via direct Brown Anchor refueling track, direct 21°11'N/107°30'E, 21°13'N/107°22'E, 21°13'N/106°50'E, 21°13'N/106°25'E, 21°08'N/106°18'E, 21°11'N/106°12'E, 21°11'N/106°13'E (MIG engagement), 21°08'N/106°10'E, 21°11'N/106°30'E, 21°09'N/107°25'E, 21°08'N/107°30'E, Brown Anchor, direct Korat.

3. AIRCRAFT CONFIGURATIONS

F-105	BLUE 1	BLUE 2
	2 - 3,000 lb bombs	2 - CEU 27
	1 - 650 gal centerline tank	2 - 450 gal drop tanks
	Camouflage paint	Camouflage paint
	Vector equipment	Vector equipment

MIG-17 MIG 1, 2, 3, 4

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

	BLUE 1, 2	MIG 1, 2	MIG 3, 4
Altitude:	3,000 ft	2,500 ft	12,000 ft
Heading:	254°	270°	270°
Speed:	475 KTAS	500+	500+
Fuel State:	unknown	unknown	unknown

Flight Formation:

Wide fighting wing with #2 on leader's right side.

5. INITIAL DETECTION

BLUE 2 sighted two MIG-17s rolling into his 6 o'clock position level at 4-6,000 ft range. He also spotted two more MIG-17s at 8 o'clock high (approximately 12,000 ft). Time was 1030H, approximately two minutes prior to TOT.

6. ACTION INITIATED

BLUE Flight jettisoned external tanks, lit afterburners, and broke hard left into the MIGs.

7. SITUATION DEVELOPMENT

BLUE Flight made a hard left break into the attacking MIGs. The MIGs overshot and zoomed up and over the top of BLUE 1. BLUE 1 reversed back into the MIG flight and picked them up out front at approximately 4,000 ft range. The MIGs were climbing out through 6-8,000 ft in a gentle left turn at high airspeed. The MIGs held their high mach (in afterburner), and BLUE 1 was unable to set up for a gun shot before the MIGs went out of range. BLUE Flight was now over the target area, and receiving 85 mm AA fire, so BLUE 1 continued his right turn back around to an easterly heading and egressed the area. The total engagement time was approximately one minute. The high element of MIGs (at 12,000 ft) never descended to join the encounter.

9. EQUIPMENT PROBLEMS

BLUE 2 had one 450 gal drop tank which did not feed. It was jettisoned full prior to the engagement.

10. AIRCREW COMMENTS

Comments on This Encounter

BLUE 1 felt the MIGs had no intention of continuing the engagement after he and number 2 jettisoned their ordnance. The MIGs came in at a relatively high airspeed using their altitude to gain overtake and angle off. When the MIGs overshot, they made no attempt to

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Event II-60

yoyo or gain lateral separation. They merely climbed away at high airspeed probably figuring their mission was complete when they forced the F-105s to jettison their ordnance short of the target.

Switchology entered this engagement when BLUE 1 reversed and got behind the MIGs. He stated he did not have sufficient time to reset his sight for an air-to-air mode before the MIGs were out of range and pulling away. He felt that he might have been able to get a kill if he had been carrying a GAR-8 type missile.

BLUE 1 was also disappointed in the extremely rapid airspeed loss of the F-105 when it is racked into hard turns.

BLUE 2 had high praise for the F-105 electronic countermeasure equipment (warning systems, etc.) and felt that they should be in all aircraft.

Comments from Overall Experience

BLUE 2 sees no advantage in trying to make one single airplane a jack-of-all-trades. Felt each different aircraft should be designed for a specific job. He also sees only a limited value for an aircraft with a two-man crew.

11. DATA SOURCES

Project Interviews: BLUE 1, 4 Jan 67; BLUE 2, 15 Mar 67

Messages, Reports:

7thAF OPREP-4/474, Z11934Z Sep 66 DOCO 25857
388th TFW, OPREP-4/355 21 Sep 66 DOI-0310

12. NARRATIVE DESCRIPTION

BLUE Flight was the first of five F-105D attack flights from Korat. Their target was JCS 16, the Dap Cau railroad/highway bridge located at 21°11'N/106°05'E about 16 miles northeast of Hanoi. The Korat force followed a force from Takhli on this date and this was the second or third consecutive day that this bridge was under attack. Each flight was fraged in with a TOT separation of 3-5 minutes, so that the target was subjected to waves of attack for a period of 45 minutes to an hour.

BLUE Flight departed Korat, refueled over the Gulf of Tonkin, proceeded north and then turned east to enter RP VI about twelve miles north of Cam Pha Harbor. BLUE 3 ground aborted for oil pressure malfunction and BLUE 4 aborted for radio malfunction. Thus, BLUE Flight was reduced to two aircraft, one carrying two 3,000 pound bombs and the other carrying four CBU-24s with BLUE 2 in spread position on the right. BLUE 2 had one 450 gal tank that would not feed and jettisoned it over the mountains.

BLUE Flight received numerous SAM calls, with indications of SAM activity on their vector equipment as they flew west from the coast toward the target. About 15 miles from the target as BLUE Flight was descending out of the mountains into the flat delta, BLUE 2 called, "Tally-ho two MIGs level-low, coming up, 4-6,000 ft range at 7 o'clock." BLUE lead was at 3000 ft, 475 KTAS, heading 254° with the two MIGs at about 2500 ft.

BLUE 1 did not receive the call clearly because of excessive radio chatter, and thought BLUE 2 said "MIGs high at 8 o'clock." BLUE 1 immediately identified two MIG-17s at his 8 o'clock position about 12,000 ft altitude. He was able to identify the MIGs by their silhouette. The two high MIGs were in a pursuit attack, but too far out to fire. BLUE 1 jettisoned his empty 650 gal centerline fuel tank and increased his airspeed thinking that he could outrun the MIGs to the target as he had in fact done on the previous day, where the MIGs broke off when the flak became thick.

BLUE 1, now about 10 miles from the target, was still watching the two high MIGs attempting to cut him off when BLUE 2 called "They are getting close." The excited tone of BLUE 2's voice compelled BLUE 1 to take his eyes off of the two high MIGs and look around. BLUE 1 immediately saw two more MIGs at his 7 o'clock level about 3000 ft range and closing. BLUE 1 had over 500 kts airspeed, but he could see the underside of the MIGs and knew the MIGs had lead on him. BLUE 1 broke hard left into them, jettisoned his bombs and as the MIGs passed over him reversed.

When BLUE 1 jettisoned his ordnance, the MIGs ceased tracking, unloaded the wings, and with afterburner still going zoomed over BLUE 1. The MIGs were 3-4000 ft in front of BLUE 1 before he could pick them up again after reversing. BLUE 1 was attempting to set up his sight for air-to-air, but gave up when the MIGs were 6-8000 ft going away in an easy left turn toward Hanoi and the 85 mm anti-aircraft artillery in the target area began shooting at BLUE Flight. BLUE Flight had no ordnance at this time so they broke down and right for the hills. The position of the two high MIGs was unknown so BLUE Flight accelerated to 1.15 (760 KCAS) and held this speed until well clear of the area. The rest of the flight was relatively uneventful.

It is possible that this is the tank described in Event II-54.

SECRET

SECRET

Event II-61

Aircraft Involved: Four F-105s vs one MIG
Result: Sighting only
Vicinity of Encounter: 21°35'N/104°49'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 September 1966/0845H

Four F-105s (BLUE Flight) were escorting and providing SAM coverage for F-105 strike forces. All aircraft airborne, through tankers, and in target area on time. Weather was below minimum operating standards over the target area. Visibility 2-1/2 miles at 1500 ft.

2. MISSION ROUTE

BLUE Flight departed Korat and rendezvoused with tanker (Orange Anchor) and then proceeded north to Red River and into the target area crossing the north end of Thud Ridge. Weather forced BLUE Flight back out of target area. BLUE Flight set up orbit around Tho and Yen Bai areas, trolling for SAM sites while the strike forces bombed targets of opportunity along the Red River. After strike forces completed bombing, BLUE Flight bombed a bridge on west side of Red River across from the town of Yen Bai, then returned to Korat AB.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1 (F-105F), 2 (F-105D)

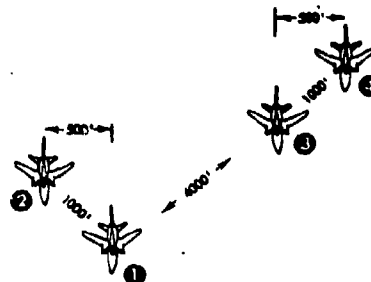
2 - SHRIKE (AGM-45)
2 - Rocket pods (LAU-3)
2 - 450 gal. wing tanks
20mm (M-61 gun)

F-105 BLUE 3 and 4 (F-105D)

6 - 750-lb bombs, 2 - 450 gal. wing tanks
20mm (M-61 cannon)

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear - 3-mile visibility in haze
Altitude: 9000 ft
Heading: 180°
Speed: 450 kt
Fuel: 5-6000 lb
Flight Formation:



5. INITIAL DETECTION

BLUE 3 called MIG-21 of 5 o'clock level with BLUE Flight. Flight was descending in left turn, toward south.

6. ACTION INITIATED

BLUE Flight continued making left turn to about 360° while descending to 3-4000 ft, and then broke right and down into haze layer.

7. SITUATION DEVELOPMENT

BLUE 1 was looking for the MIG but did not see it. BLUE 3 lost visual contact in the haze but BLUE 4 saw a belly view of it high and 7000 ft away (silver color). BLUE Flight continued right turn and BLUE 1 observed an airplane high (9-10,000 ft) and 3-4 miles away heading for Hanoi area. No chase was initiated because the MIG was not a threat any more.

11. DATA SOURCES

Project Interviews: Statement by BLUE Lead pilot, 14 Mar 1967.
Message Reports: Incident Summary from OPREP-3/PINNACLE/377 (388TFW) 22 Sept 1966

12. NARRATIVE

See Sections 5, 6 and 7.

SECRET

SECRET

Event II-62

Aircraft Involved: Four F-105s vs one MIG-21
(possible)

Result: Sighting only

Vicinity of Encounter: 21°40'N/104°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 September 1966/unknown

A flight of four F-105s (BLUE Flight) egressing from unknown type mission in NVN.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown

BLUE 1, 2, 3, 4

Altitude: 9,000 ft

Heading: 210°

Speed: 450 KTAS

Fuel State: Unknown

Flight Formation: Unknown

5. INITIAL DETECTION

BLUE 4 sighted a single delta-wing aircraft (probably MIG-21) directly above BLUE Flight and slightly off BLUE 4's left wing. Unidentified aircraft was in left turn, heading 140°, at an estimated altitude of 17,000 ft. Bogey was under observation for only 10 to 15 seconds when it disappeared into haze.

6. ACTION INITIATED

BLUE Flight kept constant check of 6 o'clock position, but bogey was not seen again.

11. DATA SOURCES

Project Interviews: None

Messages, Reports:

388TFW, OPREP 4/466

SECRET

SECRET

Event II-63

Aircraft Involved: Four F-105Ds and four MIG-21s

Result: Sighting only.

Vicinity of Encounter: 21°55'N/104°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 28 September 1966/1725H

A flight of four F-105Ds (BLUE Flight) had just crossed the Red River inbound. Type mission is unknown.

2. MISSION ROUTE

Unknown.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

Unknown

MIG 1, 2, 3, 4

Silver color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown (possibly undercast with haze)

BLUE 1, 2, 3, 4

Altitude: 13,000 ft

Heading: 030°

Speed: 400 kt

Fuel State: unknown

Flight Formation: unknown

5. INITIAL DETECTION

BLUE Flight sighted four MIG-21s in modified trail formation at their 12 o'clock position. MIGs were 10 to 20 nmi away, heading approximately 220°, and altitude 10,000 ft. Time of sighting was 1725H.

6. ACTION INITIATED

No attempt to engage was executed by either flight. MIGs were headed into the sun, and apparently never had visual contact with BLUE Flight. They disappeared from sight when they went down into clouds and haze layer.

11. DATA SOURCES

Project Interviews: None

Messages, Reports:

388TFW, OPREP 4/478

SECRET

Aircraft Involved: Four F-105s vs two MIG-17s

Results: No damage

Vicinity of Encounter: 21°13'N/105°42'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 October 1966/1545H

Four F-105s (BLUE Flight) on strike mission against a target between Hanoi and Phuc Yen.*

2. MISSION ROUTE

BLUE Flight departed Takhl1, route unknown.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

Bombs, external tanks, QRC-160 pod on left outboard station.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: VFR, but clouds topping higher peaks along Thud Ridge.

BLUE 1, 2, 3, 4

Altitude: 2-5,000 ft AGL

Heading: 315°

Speed: 525 KTAS

Fuel State: Unknown

Flight Formation: Unknown

5. INITIAL DETECTION

One minute out from target, BLUE Flight saw two MIG-17s at 2 o'clock. 2000 ft AGL, turning into their flight.

6. ACTION INITIATED

BLUE Flight went afterburner and used speed to outrun the MIGs.

7. SITUATION DEVELOPMENT

BLUE Flight continued and hit the target. As they came off the target heading 315° at 2 to 5,000 ft they were engaged by two more MIG-17s (possibly same aircraft). One MIG made a head-on firing pass (cannon) at BLUE 3, and the other a 6 o'clock firing pass (cannon) at BLUE 4. Neither aircraft received any hits, but low fuel prevented BLUE Flight from engaging the MIGs. BLUE Flight's high airspeed enabled them to break the contact and egress the area.

8. ORDNANCE

BLUE Flight - no ordnance fired

MIG-1 - one gun pass/no hits

MIG-2 - one gun pass/no hits

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

None

11. DATA SOURCES

Project Interviews: BLUE 1 (Lead)

Messages, Reports:

7AF 081438Z Oct 66, DOCO 26722

7AF 082232Z Oct 66, DIO 30617

12. NARRATIVE DESCRIPTION

BLUE Flight's first MIG sighting was while inbound to the target on heading 135° at 2,000 ft AGL. BLUE Flight observed two MIG-21s heading NE at 21°26'N/105°45'E. These MIGs made no attempt to engage flight. BLUE Flight continued toward target at same altitude and heading. As the flight passed 2nmi SE of Phuc Yen airfield, they noticed several MIGs orbiting the runway. The MIGs appeared to be meeting the F-105 strike flights head-on about one and a half nmi out, then attempting to turn in and fall into a 6 o'clock position on the F-105s. BLUE Flight sighted two MIG-17s at their 2 o'clock position going to 3 o'clock

*OPREP 0814382 gives target as JCS 71 which is apparently garbled.

SECRET

Event II-64

level, turning into their flight at 6 nmi range. BLUE Flight selected afterburner and increased their airspeed to 550 KTAS, the MIGs fell into trail, but were well out of combat range and unable to close. BLUE Flight continued on the same heading and altitude for 60 sec., executed a pop-up maneuver, and delivered their bombs on the designated target. The flight pulled off target and picked up a reciprocal heading of 315° at 2,000 ft to 5,000 ft altitude. At 21°13'N/105°50'E two MIG-17s (possibly the same aircraft sighted prior to pop-up) engaged BLUE Flight. One MIG got well lined up, and executed a head-on firing pass (cannon) against BLUE 3, while the other made a firing pass (cannon) at BLUE 4 from his 6 o'clock position. BLUE 1 stated that the rounds came close to BLUE 3, but neither aircraft received a hit. BLUE Flight was low on fuel due to afterburner operation, and could not remain in an engagement with the MIGs. BLUE Flight was still carrying a high airspeed and used this advantage to break contact and continue straight out on their egression.

A BIG EYE EC-121 on station at 20°00'N/107°00'E had given eight MIG warnings between 1540H and 1617H during the time of this engagement. However, the MIGs encountered by BLUE Flight were not specifically correlated with these warnings.

SECRET

Aircraft Involved: Four F-105s vs four MIG-21s

Result: No damage confirmed (one MIG, possible damage)

Vicinity of Encounter: 21°10'N/105°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 October 1966/1545H

Four F-105s (BLUE Flight) on an armed reconnaissance and flak suppression mission in Package VI-A were egressing from target JCS 51. Multiple strike flights were deployed against this target. No mention is made of BLUE 3 and 4 after start of this engagement.

2. MISSION ROUTE

Unknown - Flight had approached target area heading SE along the SW edge at Thud Ridge (approximately 21°30'N/105°38'E).

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1,2,3,4

- 4 - CBU-24 each aircraft
- 2 - 450-gal fuel tanks (inboard stations)
- 1 - QRC-160 ECM pod (BLUE 1,3, and 4 only)
- IFF and camouflage paint (all aircraft)

MIG-21 MIG 1 and 2

- Silver color (shiny)
- No noticeable external tanks or ordnance
- No identifying insignia

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear, some low haze along Red River and around Hanoi area.

	<u>BLUE</u>	
	<u>1</u>	<u>2</u>
<u>Altitude:</u>	7000 ft	6000 ft
<u>Heading:</u>	Southerly, in a left turn coming off target	
<u>Speed:</u>	-----450 KIAS-----	
<u>Fuel State:</u>	Unknown (BLUE 2 had 5000 lb at termination of attack.)	

Flight Formation: BLUE 2 was in a left climbing turn approximately 2 n mi behind BLUE 1, and cutting him off in the turn for a rejoin. They had just pulled off a CBU drop on target.

5. INITIAL DETECTION

BLUE Flight had been receiving MIG and SAM alerts from IRON HAND flights, and MIG warnings from BIG EYE, EC-121 stationed at 20°00'N/107°00'E. BLUE 2 sighted four MIG-21s in elements of two at 9 o'clock high (2 to 3 n mi range). The MIGs were in a descending pursuit curve heading 270° at a speed of approximately 550 kts. The MIG elements were in a close fighting wing position with about 500 ft linear separation between leader and wingman, and the wingman 50-60 degrees behind the lead.

6. ACTION INITIATED

BLUE 1 and 2 jettisoned their external tanks and MER racks, lit afterburner, and continued in the left climbing turn. BLUE 3 and 4 slid out wide about 2 n mi behind BLUE 2.

7. SITUATION DEVELOPMENT

MIG 1 pressed attack on BLUE 1 and rolled out in front of BLUE 2. MIG 2 passed under BLUE 2's nose and was not seen again. MIG 3 and 4 overshot a pass at BLUE 2 and reinitiated, but fell way back in trail and high. BLUE 2 fired 20 mm burst at MIG 1 (no visible damage). MIG 1 broke off attack on BLUE 1, but BLUE 1 was hit by AA fire and flamed out. BLUE 2 broke off attack on MIG 1 to assist his leader. BLUE 1 made a successful airstart, and BLUE Flight rejoined and egressed the area.

8. ORDNANCE

	(No. fired/No. hits)	
	<u>20 mm (HEI)</u>	<u>Remarks</u>
BLUE 2	1/0	BLUE 2 thinks he may possibly have hit MIG, but he saw no visual evidence. 235 rounds fired.

	<u>23mm Cannon</u>	<u>Remarks</u>
MIG 1	2/0	BLUE 1 stated MIG may have fired several bursts at him.

9. EQUIPMENT PROBLEMS

BLUE 2's gun camera did not work.

10. AIRCREW COMMENTS

Experience

<u>Experience</u>	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 2</u>	5000	200	20	BLUE 2 had previous air-to-air experience in Korea; 66 missions air-to-ground in F-86; 35 missions air-to-air in the F-86. BLUE 2 estimated he had 10-12 encounters and 5 or 6 engagements with MIGs during Korean conflict.

Comments on this Encounter

a. BLUE 2 had no trouble turning with and tracking the MIG. He was able to hold lead, but initial range was too far out to fire. At 600 KIAS, holding 5 to 6 "g's", he was unable to get a rapid rate of closure even in afterburner. BLUE 2 felt MIG may have had control problems due to high airspeed. He was sure MIG could have turned tighter at a slower speed. MIG appeared to be executing a jinking maneuver during the left turn. All of a sudden his right wing would tip down and he would make a quick motion to the right. BLUE 2 originally thought this maneuver to be some sort of evasive action, but finally decided the MIG was having control difficulties. BLUE 2 tracked MIG for approximately 30 seconds, and felt he could have gotten a kill eventually if he had not been forced to break off and help his leader.

b. BLUE 2 stated he thought our pilot skill and capability were far superior to those of the MIG pilots. Felt MIG pilots to be somewhat timid in their attack - as though they wanted to make one quick high speed pass, and then get out.

c. Judging by the type intercept (pursuit curve) and relative position at initial sighting, BLUE 2 felt that the MIGs were under GCI control throughout the engagement.

d. BLUE 2 did not have time to reset his switches for "guns air" during his firing pass. Stated he was forced to put his head in the cockpit as he was trying to set up from bombing switch configuration to air-to-air configuration.

e. BLUE 2 stated all flights had a great deal of communications problems coming off target. This was due to saturation of the radio frequency rather than being an equipment reliability factor.

11. DATA SOURCES

Project Interview: BLUE 2, 2 Feb 1967.

Messages:

7AF	DOCO 26723	081438Z	Oct 1966
7AF	DIO 30617	082232Z	Oct 1966

12. NARRATIVE DESCRIPTION

BLUE Flight had just expended ordnance on the target and was pulling out at about 8,000 ft. altitude and turning left. BLUE 2 saw two MIG-21s and called out "21 attacking at 9 o'clock high." He first saw two and when he looked back there were two more behind. The MIGs were in elements of two, strung out with 500 ft. linear separation, but in a fighting wing, 50-60 degrees back from the leader.

As the first two MIG-21s came in, they singled out BLUE 1. The lead MIG, in a 90° bank, attempted to pull lead on BLUE 1 and passed in front of BLUE 2. The MIG closed to within 3000-6000 ft of BLUE 1, with about 100 kts overtake. BLUE 2 did not have sufficient time to set up his gunsight, and with a fixed pipper, depressed for bombing, fired a 2 1/2 sec burst. BLUE 2 pointed the nose and visually estimated the lead but no hits were observed.

The MIG then broke off his attack on BLUE 1 and continued 1/2 turn with afterburner going. The trailing two MIGs passed behind BLUE 2 in an overshoot, went high, and were not seen again. The second MIG of the first section also passed out of sight below and in front of BLUE 2. Although BLUE 1 was not able to turn with the MIG, BLUE 2 could do so.

As the first MIG broke off from BLUE 1, BLUE 2 cleaned off his aircraft and lit the afterburner, and followed the MIG. He then configured the weapon system for guns air and set the radar up. Although BLUE 2 is not positive that he obtained a radar lock, the analogue was in the 4-5 position which indicated radar lock-on but that the target was out

SECRET

Event II-65

of range. BLUE 2 continued to track the MIG and closed on him. BLUE 2 was at 8,000-10,000 ft altitude, 600 KIAS and was pulling about 4 g's. The MIG appeared to be jinking in front of BLUE 2 but he felt that the MIG was really having control difficulties.

After the MIG had broken off from BLUE 1, BLUE 1 and BLUE 2 were fired on by 85 mm flak.

As BLUE 2 closed on the MIG, he heard BLUE 1 call that BLUE 1 had been hit by flak so BLUE 2 broke off to join on BLUE 1.

BLUE 1 was hit by flak and at 1550H, 16,000 ft, heading 270° and the damage caused the engine to flame out. While attempting an air start at 10,000 ft at 21°09'N/105°35'E he observed a SAM from a site at 21°12'N/105°34'E on a heading of 180 degrees climbing past and about 1,000 ft from the aircraft. BLUE 1 did not see the missile detonate, and no evasive action was taken due to the flameout. Subsequent air start was successful.

BLUE 2 felt that either GCI or the second MIG element had warned MIG-1 that BLUE 2 was closing on him.

BLUE 2 made a DF rejoin on BLUE 1 and the flight egressed.

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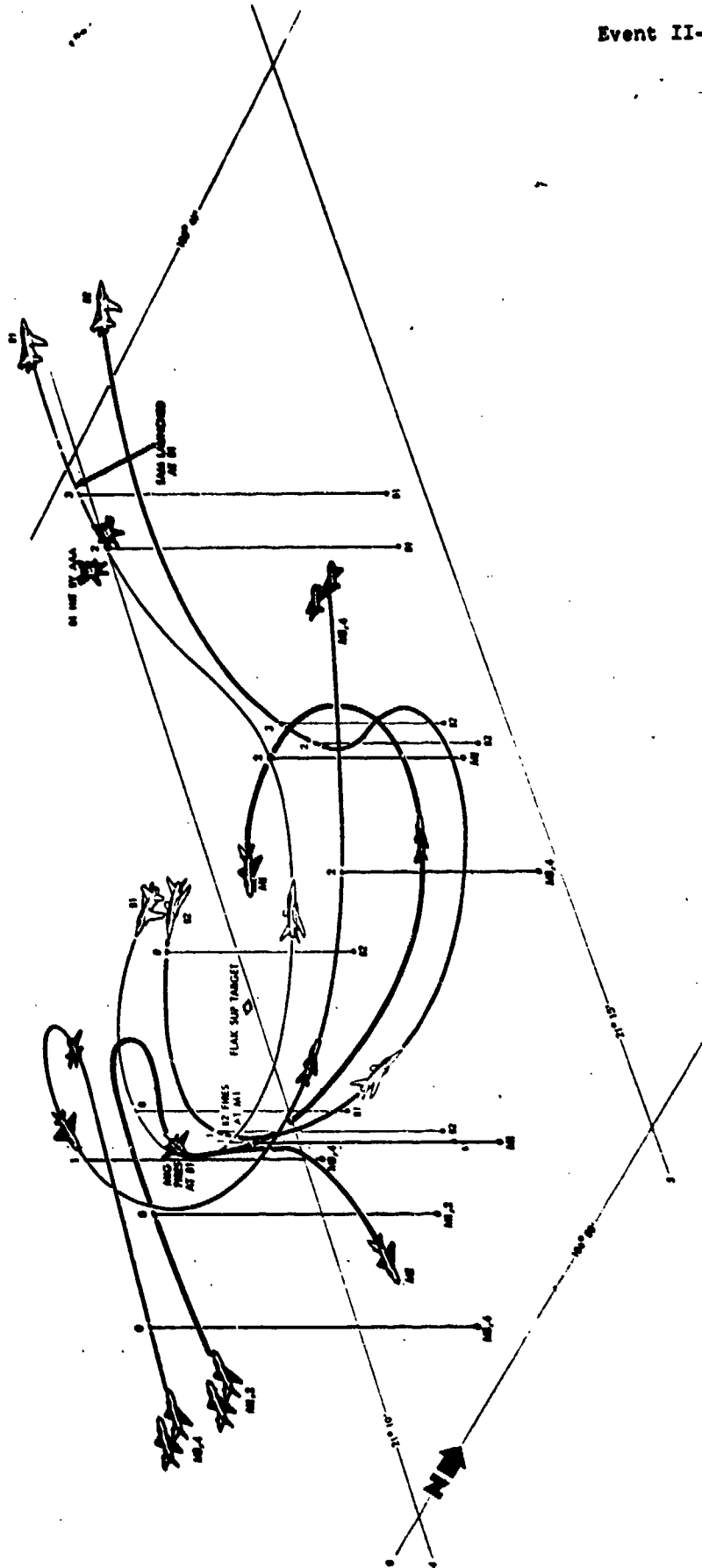
RED BARON EVENT 11-65 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	4 to 5 g pull-up 450 KIAS 6-7000 ft afterburner	BLUE 2 was cutting off BLUE 1 in a left turn for join up after bombing run. BLUE 2 sighted 4 MIG-21s initiating attack from his 9 o'clock high position (2 to 3 n mi range). BLUE 1 and 2 jettisoned tanks and MER, lit afterburner and continued turn.	BLUE 1 (L) in a left turn climbing out from target. BLUE 3 and 4 went wide 2 n mi behind BLUE 2.	BLUE 2 called leader to increase his turn. BLUE 2 called "21s attacking at 9 o'clock high."	MIGs were in a descending pursuit curve passing through heading of south. Estimated 550 to 600 kt airspeed and 8-9000 ft altitude	Attacking bogies were immediately recognized as MIG-21 type aircraft.
T ₁	450 KIAS 6-7000 ft altitude. Accelerating in afterburner.	BLUE 2 rolled wings level and fired one 2-1/2 sec burst at MIG 1 as he passed in front. After firing BLUE 2 made slight right turn and then back hard left (5 or 6 g's) to keep in trail with the MIG.	BLUE 2 lost sight of lead when he rolled level to fire.	BLUE 1 asked for BLUE 2's position - BLUE 2 replied "behind a MIG" BLUE 2 asked leader to transmit for DF steer.	MIG 1 rolled in trail with BLUE 1. MIG 2 passed under BLUE 2's nose and time to set up was not seen again. MIG 3,4 fell behind as BLUE 2 accelerated.	BLUE 2 fired without sight - he did not have time to set up the sight for air-to-air operation.
T ₂	Descending turn 5000 ft altitude 600 KIAS 5 to 6 g's turn.	BLUE 2 trailed MIG 1 in a hard left descending g's turn.	BLUE 1 (L) was hit by R5mm AA fire. Hit caused BLUE 1 (L) to flame-out.	BLUE 1 asked for BLUE 2's position - BLUE 2 replied "behind a MIG" BLUE 2 asked leader to transmit for DF steer.	MIG 1 was in a 5 to 6 g hard left descending turn at 600 KIAS. After-burner on. MIG 3,4 seen again briefly by BLUE 2.	BLUE 2 was in trail with MIG. He could hold lead for firing but his range was too far out (about 1 n mi). BLUE 2 slowly began to accelerate and close on the MIG.
T ₃	5000 ft 600 KIAS	BLUE 2 broke off to the right and disengaged from the MIG. BLUE 2 got a DF steer to rejoin BLUE 2.	BLUE 1 flamed out, but finally made a successful air-start.	BLUE 1 called out "SAM missiles launch"	MIG 1 disappeared when BLUE 2 broke off. SAM was launched at BLUE 1 while he was flamed out.	SAM did not guide and missed BLUE 1 by 1000 ft. BLUE 2 rejoined BLUE 1 just short of Red River, heading 270°.

SECRET

SECRET

Event II-65



SECRET

Aircraft Involved: Four F-105s vs three MIG-17s
and two MIG-21s

Result: No Damage

Vicinity of Encounter: 21°13'N/105°47'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 October 1966/1545H

Flight of F-105s (BLUE Flight) on a strike mission (target unknown). Target was probably in vicinity of 21°10'N/105°50'E.

2. MISSION ROUTE

Unknown

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

External tanks (type and size unknown)

MIG-17 MIG 1, 2, 3

External tanks

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: High cirrus, 5 mile visibility in haze.

BLUE 1, 2, 3, 4

Altitude: 1,000 ft AGL

Heading: 135°

Speed: 540 kts

Fuel State: Unknown

Flight Formation: Unknown

5. INITIAL DETECTION

BLUE Flight observed three MIG-17s drop their external tanks and turn in on them from BLUE's 4 o'clock high position at a range of 6-8,000 ft.

6. ACTION INITIATED

BLUE Flight went afterburner and accelerated to 600 kts.

7. SITUATION DEVELOPMENT

MIGs were seen to drop way back in their 6 o'clock position. BLUE Flight popped up and began their dive bomb run. During the dive run, BLUE Flight sighted two MIG-21s at 3 o'clock, apparently initiating an attack on BLUE Leader. After bomb release, BLUE Flight jettisoned their external tanks and turned in behind the MIGs. The MIGs were in a loose trail formation, and slightly offset to the side. As BLUE Flight closed in at 6 o'clock, 4,000 ft range, the MIGs broke up and left towards the south. No engagement followed. BLUE Flight pushed over and right, descended to 500 ft AGL, accelerated to 755 kts, and egressed the area.

8. ORDNANCE

None

9. EQUIPMENT PROBLEMS

None reported

10. AIRCREW COMMENTS

Experience: Unknown

Comments on this Encounter

BLUE 2 stated the MIGs broke up and away right after he turned his radar to the search/attack mode. He felt the MIGs may have had a radar warning system.

11. DATA SOURCES

Project Interviews: None

Messages, Reports:

Letter from BLUE 2

7AF Message 082232Z Oct 66 DIO 30617

SECRET

Event II-67

Aircraft Involved: Four F-105s vs four MIG-17s
Result: No Damage
Vicinity of Encounter: 21°11'N/105°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 October 1966/1541H

A flight of four F-105s (BLUE Flight) were on a multiple flight strike mission against JCS Target #51, at 21°10'N/105°50'E. Flight was making a final test on the QRC-160 ECM pods.

2. MISSION ROUTE

The overall route is unknown; however, the flight made its ingress and egress to target along the N. side of Thud Ridge.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

6 - 500-lb bombs
2 - 450-gal drop tanks
1 - QRC-160 ECM pod

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown
BLUE 1, 2, 3, 4
Altitude: 12,000 ft
Heading: Approx. SE
Speed: 500 kt
Fuel State: Unknown
Flight Formation:

Unknown on inbound leg. Loose extended trail (coming off target) with a slight lateral separation between the wingman and leader of each element.

5. INITIAL DETECTION

BLUE 3 made the first sighting, inbound, when he spotted two MIG-17s at their 3 o'clock position at approximately 6000 ft altitude. These MIGs approached BLUE Flight, but either did not see them or elected not to give chase because of the F-105 speed advantage.

As the flight came off target (right turn out), BLUE 2 sighted two bogeys at their 7 o'clock position, 3 to 4 miles. Seconds later BLUE 4 called two more MIGs at his 6 o'clock closing.

6. ACTION INITIATED

BLUE Flight proceeded on in to the target after the first sighting as the MIGs made no attempt to engage. BLUE Flight went afterburner when BLUE 2 called out second sighting.

7. SITUATION DEVELOPMENT

Nothing occurred during the first sighting as the MIGs made no attempt to engage. BLUE Flight went into afterburner when BLUE 2 called second sighting. Shortly after BLUE 2 called bogey's range decreasing to 2 to 3 miles, BLUE 4 called out two more MIGs in his 6 o'clock position. BLUE Flight continued straight outbound for approximately two minutes when BLUE 2 initiated a cross-over on lead to check position of the MIGs. BLUE 2 observed a MIG-17 at BLUE 4's 6 o'clock, range 6000 ft. During the cross-over, the MIG broke off the engagement, pulling up and heading back towards Phuc Yen. BLUE Flight was low on fuel, and the leader decided to proceed home rather than turn back and engage the MIGs.

8. ORDNANCE

None expended

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

Experience: Unknown

Comments on this Encounter:

BLUE 2 feels that the fighting wing position (500 to 1000 ft behind lead within a 60° cone) in the F-105 is not conducive to mutual support. Due to the reduced visibility in the F-105, he felt that a wider spread formation, stacked either level or slightly low was far preferable to the fighting wing position in a defensive environment. BLUE 2

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Event II-67

was unable to see the MIGs in trail with BLUE 4 until he actually turned and crossed from one side of BLUE leader to the other.

BLUE 2 stated that if the MIGs had been equipped with missiles, they probably would have downed BLUE 4. He assumed they had only cannons, because BLUE Flight had done no hard jinking as they came off the target and the MIGs had closed well within missile firing range.

11. DATA SOURCES

Project Interviews: BLUE 2, 3 February 1967.
Messages: 7AF 2232 Z October 1966, DIO 30617.

12. NARRATIVE DESCRIPTION

See Items #7 and #10.

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Event II-68

Aircraft Involved: Four F-105s vs one MIG-19
and one MIG-15 or -17

Result: Sighting only

Vicinity of Encounter: 21°15'N/104°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: ___ October 1966/Believed to be daylight, p.m.

Four F-105s (BLUE Flight) on strike mission against highway bridge (Route Package V). Mission was one of several in general area and along Red River.

2. MISSION ROUTE

Departed Korat; then to unknown refueling track, thence via TACAN Channel 79, via TACAN Channel 97 to target (approx. 21°15'N/104°08'E).

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

6 - 750-lb bombs (Mk117) (2 outboard and 4 centerline)
2 - 450-gal fuel tanks - inboard
1029 rounds 20mm (HEI)
TACAN operating - IFF standby - radar standby
Camouflage paint
BLUE 1 and 3 only - ECM vector equipment

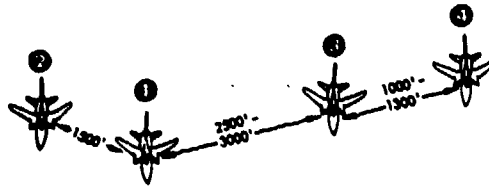
MIG 1, 2

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered cirrus at various levels over Laos - broken layer at 10,000 ft W of target - patchy scattered clouds in target area with visibility 50 miles plus.

	BLUE			
	1	2	3	4
<u>Altitude:</u>	13K	13K	15K	15K
<u>Heading:</u>	NNE	-----	-----	-----
<u>Speed:</u>	480 kt	-----	-----	-----
<u>Fuel State:</u>	11,000 lb	-----	-----	-----
<u>Flight Formation:</u>	Fluid-Four.			



5. INITIAL DETECTION

BLUE Flight received MIG warnings from IRON HAND flight in area. BLUE 3 saw two bogies in close formation at 2 o'clock position high.

6. ACTION INITIATED

BLUE Flight was nearing target and elected to continue straight on in while keeping the unidentified aircraft under observation.

7. SITUATION DEVELOPMENT

The bogies paralleled BLUE Flight's course for a few minutes, then turned into them with a gentle turn. BLUE 3 identified them as MIG-type aircraft and called for flight to turn right. BLUE Flight made a 360 degree turn, passing approximately 5000 ft below the MIGs. MIGs did not engage, rolled out heading W and egressed the area.

8. ORDNANCE

No ordnance expended.

9. EQUIPMENT PROBLEMS

None reported.

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Event II-68

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 3</u>	4900	350	80	Had received F-105 ACM training at Yokota, Japan.

Comments on this Encounter

- a. BLUE 3 felt F-105 needed better turning capability.
- b. BLUE 3 mentioned need for simpler gunsight control (too many switch operations to get from air-to-ground to the air-to-air mode). Also said it would be nice to utilize F-105 SIDEWINDER missile capability.
- c. BLUE 3 stated that he felt more MIG sightings occurred when our aircraft approached targets from the east rather than the west.

11. DATA SOURCE

Project Interview: BLUE 2, BLUE 3, 15 February 1967.

Messages: None

12. NARRATIVE DESCRIPTION

When BLUE 3 first called bogies, he could see only two dark specks in the sky. There were no visible contrails and bogies appeared to be at 20,000 ft. As the bogies turned to parallel BLUE Flight, BLUE 2 saw them. BLUE Flight elected to continue on course and keep a watch on bogies. Finally bogies began a gentle turn into flight (estimated speed 500-540 kt), and BLUE 3 identified them as MIG-type aircraft. Both had swept wings and one appeared to be a MIG-15 or -17, and the other a MIG-19. BLUE 3 called for a right turn, and BLUE Flight made a right descending 360°, 4 "g" turn in afterburner, passing 5000 ft below and underneath the MIGs. The MIGs made no attempt to engage, turned W, and egressed. BLUE Flight resumed course and proceeded to target. BLUE 3 stated he felt the incident might have been a MIG instructor pilot showing a student what the F-105 looked like.

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Event II-69

Aircraft Involved: Four F-105s vs two MIG-21s

Result: Sighting only

Vicinity of Encounter: 21°13'N/106°42'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 November 1966/1556H

A flight of four F-105s (BLUE Flight) was proceeding outbound from a target in North Vietnam.

2. MISSION ROUTE

Unknown.

3. AIRCRAFT CONFIGURATIONS

Unknown.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Unknown.

5. INITIAL DETECTION

BLUE Flight sighted two MIG-21s, heading north, approximately 3 n mi away, at 3000 ft AGL.

6. ACTION INITIATED

BLUE Flight gave chase on the MIGs, and accelerated to 650 kt.

7. SITUATION DEVELOPMENT

Blue Flight chased the MIGs north, but could not close the distance between flights. Blue broke off the chase at 21°29'N/106°40'E. The MIGs had been in a gradual climb, and continued out of sight toward China.

8. ORDNANCE

Unknown.

9. EQUIPMENT PROBLEMS

Unknown.

10. AIRCREW COMMENTS

Unknown.

11. DATA SOURCES

Project Interviews: None

Messages, Reports: 7AF, 032324Z Nov 66, DIO 0761

12. NARRATIVE DESCRIPTION

See Items 5-7.

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Aircraft Involved: Four F-105s vs one MIG-21

Result: Sighting only

Vicinity of Encounter: Approximately
21°20'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: November 1966/unknown

A flight of four F-105s (BLUE Flight) were on a multiple flight strike mission against the Phuc Yen POL (JCS Target 51.10). BLUE Flight had just entered the target area and reached a point 10 mi NW of Phuc Yen airport.

2. MISSION ROUTE

BLUE Flight took the normal overland route via Yen Bai, and then SE down Thud Ridge to the target. Point of origin is unknown.

3. AIRCRAFT CONFIGURATIONS

BLUE 1, 2, 3, 4

1 - QRC - 160 ECM pod

MIG

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: UnknownBLUE 1, 2, 3, 4

Altitude: 2500 ft
 Heading: SE
 Speed: Unknown inbound, 650 kt during egression
 Fuel State: Unknown
 Flight Formation: Unknown

5. INITIAL DETECTION

BLUE 2 sighted a MIG-21 rolling in and paralleling BLUE Flight's direction. The MIG held at their 9 o'clock position, level, at 4000 ft range.

6. ACTION INITIATED

As the MIG posed no immediate threat, BLUE Flight took no evasive action, and continued on their bomb run.

7. SITUATION DEVELOPMENT

The MIG-21 followed BLUE Flight into the target. When BLUE popped up to 10,000 feet for their bomb delivery, the MIG remained at 2500 feet and made a level 180° turn. The MIG made no attempt to engage. BLUE Flight came off the target, and made their egression on a reciprocal heading to the inbound leg, increasing their airspeed to 650 kt. The MIG was last observed breaking off, and turning back towards Phuc Yen.

8. ORDNANCE

None

10. AIRCREW COMMENTS

Experience: UnknownComments on this Encounter:

BLUE 1 felt the MIG pilots were not at all aggressive. He spotted several more MIGs in the area during their egress, but none of them bothered his flight. BLUE 1 commented that the MIGs over Phuc Yen didn't venture over 8 n mi from their own home base on that particular day.

Comments from Overall Experience:

Starting in the middle of November as the chances of being shot at by a SAM on a given day decreased, the probability of being attacked by MIGs increased.

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Event II-71

11. DATA SOURCES

Project Interview: BLUE 1
Messages, Reports: None

12. NARRATIVE DESCRIPTION

See Items 5-7 & 10

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Event II-72

Aircraft Involved: Four F-105Ds vs three MIG-21s

Result: Sighting only

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: November 1966/unknown

A flight of four F-105Ds (BLUE Flight) on a strike mission in North Vietnam.

11. DATA SOURCES

Project Interviews: None

Messages, Reports: Letter from member of BLUE Flight

12. NARRATIVE DESCRIPTION

BLUE Flight saw three MIG-21s high at 9 o'clock while inbound to the target. BLUE continued to the target. As they were pulling off the bomb run, the MIGs turned into the flight. BLUE flight accelerated and the MIGs turned away.

Event II-73

Aircraft Involved: Four F-105Ds vs one MIG 21

Result: Sighting only

Vicinity of Encounter: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: November 1966/unknown

A flight of four F-105Ds (BLUE Flight) on a strike mission in North Vietnam.

11. DATA SOURCES

Messages, Reports: Letter from BLUE 1.

12. NARRATIVE DESCRIPTION

BLUE 1 sighted a MIG-21 at 9 o'clock high, 3 to 4 mi away. The MIG turned away.

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Aircraft Involved: Four F-105s vs two MIG-17s
Result: Sighting only
Vicinity of Encounter: SW side of Thud Ridge

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: November 1966/unknown

Four F-105s (BLUE Flight) were proceeding southeast down the southwest side of Thud Ridge, inbound toward a target at the south end of the ridge. Due to the proximity of Phuc Yen, the flight started a hard 180° turn.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear along southwest side of Thud Ridge; the ridge itself was capped by low clouds.

BLUE 1, 2, 3, 4

Altitude: Unknown
Heading: Approximately 090° in a hard left turn
Speed: Unknown
Fuel State: Unknown
Flight Formation: Unknown

5. INITIAL DETECTION

After about 45 degrees of turn, BLUE 4 sighted two MIG-17s sliding by his tail in an apparent overshoot.

6. ACTION INITIATED

BLUE Flight continued turn, as BLUE 4 was only man to see the MIGs, and did not call them out until flight had rolled steady, heading northwest.

7. SITUATION DEVELOPMENT

After the overshoot, the MIGs did not attempt to reattack. They proceeded southeast and entered the Phuc Yen defense area. BLUE Flight proceeded northwest, then crossed Thud Ridge at the north end, headed back down the northeast side of the ridge, and on to hit their target. No more MIG sightings were made. BLUE 1 had executed this round-about routing to avoid overflying the Phuc Yen area defenses.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	Unknown	800	Unknown	None

Comments on This Encounter: None

Comments from Overall Experience

BLUE 1 made the following comment concerning MIG tactics in the vicinity of Thud Ridge. He felt the MIGs and their GCI network had a very well coordinated effort, and good communications. He described the following tactic which was used continually whenever there was a thin cloud deck in the area (2-3000 feet). The MIGs would position themselves on the opposite side of the cloud deck from the attacking strike flights; then allow GCI to vector them into the strike aircraft's 6 o'clock position. When approximately 1 to 2 nmi in trail, they would pop either up or down through the cloud layer and right into shooting position. Such a maneuver gave the strike flights little or no time to acquire the attacking MIGs before they were in a firing position. The MIGs would also use a staggered trail formation (possibly 1 nmi apart) during this tactic; then if you made a hard break to avoid one, you might be setting yourself up right in front of another as he popped through the clouds. BLUE 1 stated this tactic was normally employed using three MIGs rather than four.

11. DATA SOURCES

Project Interview: BLUE 1

12. NARRATIVE DESCRIPTION

See Items 5-7.

Aircraft Involved: Four F-105s vs four MIG-21s

Result: No Damage

Vicinity of Encounter: 21°18'N/105°49'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 December 1966/1425H

Bombing strike on the POL storage area at the end of Thud Ridge (JCS 51.10). BLUE Flight was one of several F-105 flights in on the target. As the flight came off their bomb run, they were attacked by two MIG-21s.

2. MISSION ROUTE

The aircraft departed Takhli direct to Green anchor, direct to Channel 97, direct to Red River, direct to Thud Ridge, down Thud Ridge to the target. Egress the reverse route.

3. AIRCRAFT CONFIGURATIONF-105D BLUE 1, 3

6 - 750-lb bombs

1 - AIM-9B missile

1 - QRC-160 ECM pod

2 - 450-gal wing tanks

1029 rnds 20mm ammo.

BLUE 1 had IFF on, rest of flight had TACAN receive only, doppler on, radar in standby and IFF standby.

F-105D BLUE 2, 4

6 - 750-lb bombs

2 - 450-gal. wing tanks

1 - QRC-160 ECM pod

1029 rnds 20mm ammo.

All F-105s camouflaged.

MIG-21

2 - AA missiles

MIGs were not camouflaged

23 or 37mm cannons unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 8000 ft overcast 2-3 miles in haze below clouds. Cloud tops 9-10,000 ft clear above. Cloud cover extended from the Red River Valley down Thud Ridge to just short of the target. The target itself was open.

Altitude: 8000 ftHeading: 310° 40° diveSpeed: 550 KCASFuel State: 9000 lb

Flight Formation: BLUE Flight was in its bomb run at the time the MIGs were sighted. BLUE 1 & 2 had dropped their bombs and were heading up the north side of Thud Ridge. BLUE 3 was in the bomb run just prior to drop, and BLUE 4 had rolled in and was in his dive.

5. INITIAL DETECTION

BLUE 3 in the bomb run sighted two MIG 21s at his 2 o'clock position, two to three miles away. BLUE Flight had heard MIG calls from Big Eye all the way down Thud Ridge.

6. ACTION INITIATED

BLUE 3 dropped bombs on target, engaged afterburner, and jettisoned the MER rack, turning slightly left into the MIGs 8 o'clock position.

7. SITUATION DEVELOPMENT

As BLUE 3 pulled off the dive bomb run, he saw two MIG 21s attacking BLUE 2. BLUE 3 called a break as the MIG fired a AAM at BLUE 2 from range of about 1 mile. BLUE 3 again called break as the MIG fired a second AAM; by this time BLUE 3 was abreast of the MIG and as he turned into the MIG, the MIGs broke off to the right.

Five to six miles further up the Ridge BLUE Flight was again jumped by two MIG-21s attacking from 9 o'clock. The MIGs overshot BLUE 4. BLUE Flight was at a high speed by this time and were able to outrun the MIGs in afterburner.

8. ORDNANCE

(No. fired/No. hits)

	<u>Soviet AAM</u>	<u>Remarks</u>
MIG 1	2/0	The 2 AAMs fired could only be seen by BLUE 3 as long as the rocket motor burned. He was unable to tell if they guided or not. It is assumed that the violent maneuvering by BLUE 2 when the missiles were fired caused the missile to miss. Fired at BLUE 2.

9. EQUIPMENT PROBLEMS

BLUE 3 was not able to complete the switch changes necessary to change from a ground attack mode to either missile or gun's air. Recommends a more simple arrangement.

BLUE 4 also commented on the switch problem. There are too many steps involved and it requires that you take your eyes off the target and look in the cockpit. The rearward visibility in the F-105 is very poor. It requires excessive maneuvering of the aircraft to clear your 6 o'clock.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1, 2</u>		Unknown		
<u>BLUE 3</u>	1700	250	48	BLUE 3 gun and missile firing experience limited. He had fired one missile in ADC, some air gunnery during transition training.
<u>BLUE 4</u>	2600	600	35	Pilot had fired the AIM-9 and the M-61 cannon during gunnery training at Nellis AFB, Nevada. He had flown several air tactics flights in his permanent organization, Yokota AB, Japan.

Comments on this Encounter

BLUE 3 overshot a good firing position and was up line abreast of the MIG. A reason for this was his preoccupation with trying to set switches for missiles air. He never did get his switches set properly to fire a missile or the gun.

BLUE 3 could not yo-yo to get on the lead MIG due to the cloud deck.

BLUE 4 did not have an AIM-9; he did have an opportunity to fire one on one of the MIGs as it pulled up high on an overshoot. BLUE 4 recommends a low drag AAM for external carry on the 105. Possibly an AIM-9B. The high speed capability of the F-105 to outrun the MIGs at low altitude was the big factor in this engagement.

BLUE 4 - The MIG warnings past the first one were not useful since specific information about the MIGs altitude and flight direction were not given.

11. DATA SOURCES

Project Interviews: BLUE 3 (4 Feb 1967), BLUE 4 (2 Dec 1966)

Message Reports:

7AF OPREP-4	DOC0 29646	021630Z Dec 66
7AF OPREP-4	DOC0 29688	030835Z Dec 66
7AF OPREP-3	DOC0 29674	030204Z Dec 66
7AF DIA	DIA 002	022247Z Dec 66

12. NARRATIVE DESCRIPTION

BLUE Flight was in the process of bombing JCS Target 51.10, an oil storage area at the south end of Thud Ridge. BLUE 1 and 2 had bombed and were pulling off the target; BLUE 3 sighted two MIG-21s at his 2 o'clock position in a diving turn in pursuit of BLUE 2. BLUE 3 was in his bomb run and dropped his bombs, engaged afterburner, jettisoned the MER rack and turned slightly left to engage the MIGs. BLUE 3 called BLUE 2, advising him that he had two MIG-21s at 6 o'clock. The MIGs were now in position on BLUE 2 and MIG 1 fired an AAM. BLUE 3 called "break left, break, break." BLUE 2 broke left, then right, and the missile missed. BLUE 3 was able to see the missile as long as the rocket motor was burning, but lost sight of it at motor burnout. BLUE 3 was overtaking the MIGs at a high rate of closure; he came out of afterburner. As he came line abreast of MIG 2, the MIG broke hard right away from BLUE 3 and out of the fight. MIG 1 fired a second AAM at BLUE 2. BLUE 3 called break, missile away. BLUE 2 made a hard turn and the missile went past behind his aircraft and hit in the hills. BLUE 3 was now closing rapidly on MIG 1, trying to change switch settings in the cockpit to missiles-air. BLUE 3 pulled up on the left side of the MIG approximately 200 ft off his left wing. BLUE 3 turned into the MIG and the MIG broke hard right and out of the engagement. BLUE Flight continued NW up Thud Ridge; approximately

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Event II-75

30 seconds later BLUE 3 spotted 2 MIG-21s at his 11 o'clock in a left diving turn on the flight. BLUE 3 called the flight to go afterburner. BLUE Flight was strung out in a trail formation at this time and doing approximately 600 KCAS at an altitude of 6000 ft MSL along the top of Tiud Ridge 500-1000 ft above the ground. BLUE 1, 2 and 3 had no trouble out-running the MIGs, but BLUE 4, the last man in the string, did make a left level break into the MIGs as they approached his 8 o'clock position. The MIGs overshot and went high on BLUE 4. He reversed and then used his speed advantage to outrun them and egressed the area with the rest of the flight.

An EB-66 in the area had experienced two MIG-21 lock-ons at RB 210 and 160 (time 0415-1418H) at 21°50'N/104°50'E while on SW heading at 30,000 ft. This E-66 also heard the radio communication among the members of BLUE Flight.

On egress BLUE 4 observed a SAM fired on Blue 1.

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RED BARON EVENT 11-75 SUMMARY

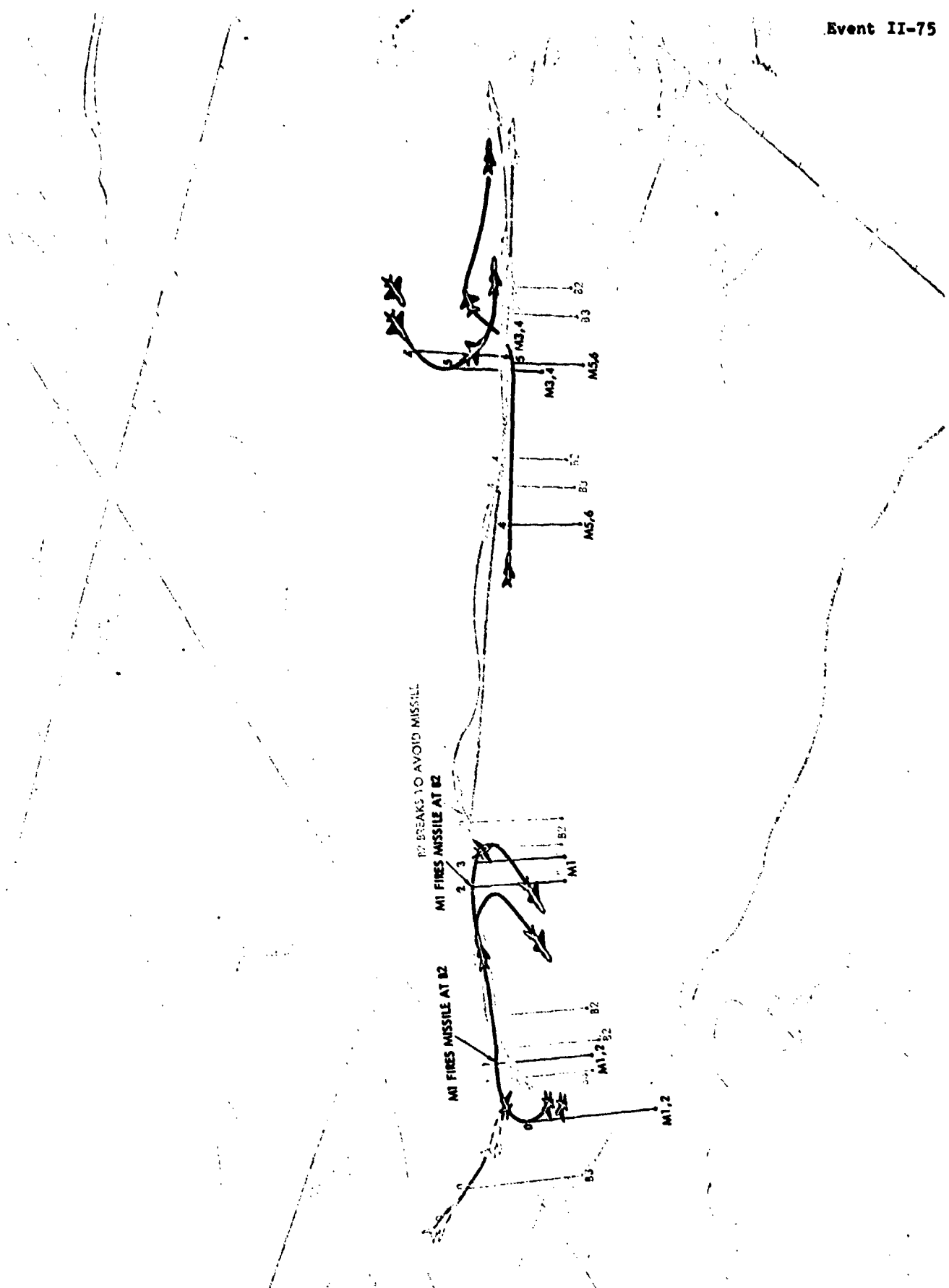
Type Mark	Action Aircraft (BLUE 3)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	In bomb run about half way down 8000 ft 40° dive L 500 kt Drops bombs	B3 spotted 2 MIGs initially as he was about half-way through bomb run. B3 pickled bombs off on target.	Lead out ahead of flight. B2 was pulling off target at 5-6000 ft. B4 had trouble dropping bombs-- lost mutual support position on B3.	B3 said "BLUE 2 there are two MIG-21s rolling in on you." MIG calls by Big Eye prior to entering target area	2 MIG-21s. B3 first saw MIGs high 1 o'clock about two miles.	Whole area overcast (8000 ft) except for hole in target area. In target area clear with two mile visibility in haze. Haze up to 8000, overcast 1000 ft. BLUE Flight had jettisoned wing tanks on Thud Ridge prior to the target after receiving MIG warnings.
T ₁	B3 pickles MER 5 to 6000 ft in afterburner 500-550 kt	B3 cuts off MIGs in turn. Is at 8 o'clock one quarter mile from MIG.	B2 does violent evasive maneuvers. Missile misses.	B3 yelled to B2 "Break left, break right, break, break."	Lead MIG fires missile at B2. Range is about one half mile. Seemed too close to B3.	B3 attempted to switch to missile's air but cannot manage it and kept his eyes on the MIG at the same time.
T ₂	5 to 6000 ft 500-550 KCAS out of afterburner	B3 is 200 ft or so off wing of lead MIG. Has cut off MIG to inside of turn.	B3 broke left hard initially and then came back right.	B3 called to B2 that another missile had been fired.	Lead MIG fired 2nd missile. M2 does hard right break. Lead MIG is 6 o'clock.	All aircraft are now below overcast. Factors in enemy missiles not hitting B2. Aircraft maneuvering, cloud, and hills in the background.
T ₃	5 to 6000 ft 500-550 KCAS	B3 broke into lead MIG.	B2 continued jinking.		Lead MIG made hard right break in about 90° bank angle. Not seen again.	B3 could not do yo-yo to get into position on lead MIG since yo-yo would have taken him by into clouds. He did not want to get into a speed disadvantage situation by using speed brakes.

RED BARON EVENT II-75 SUMMARY

Time Mark	Action Aircraft (BLUE 3)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T4	310-320° Lead 5000 to 4500 ft Both aircraft went afterburner.	B3 spotted two more MIGs 11 o'clock, 2 - 3 miles. Aircraft accelerated to 600 - 650 kt.	B2 leading egress. B2 one quarter to one half mile ahead of B3.	B3 called "B2 we have two more coming in on us - push it up."	Two MIGs co-alt to maybe 500 ft higher. MIGs in pursuit turn on F-105s only about 30° of bank.	The MIGs are flying about 2000 ft apart.
T5	B3 fuel state about 6000 lb.	B3 lost sight of MIGs at about 8 o'clock - 500 ft above and still turning. B4 behind B3 about 3000 ft makes a level break into the MIGs. The MIGs over- shoot and go high. B4 goes back right and egresses with the flight.			This is the last B3 saw of MIGs. These MIGs made about a 90° pass on B4. (They may have actually been in this path at this time - that is not in an attack on B2 and B3.	B4 felt he could have pulled up and fired a missile when the MIG went high during the overshoot but he was not configured with an AIM-9.

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Event II-75



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Event II-76

Aircraft Involved: Four F-105s vs one MIG-21
Result: No damage
Vicinity of Encounter: 21°47'N/105°12'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 December 1966/1430H

BLUE Flight of four F-105Ds on a bombing strike against JCS 51.10, a POL storage area at the south end of Thud Ridge. There were several other flights in the area at the time, with a total strike force of approximately 48 aircraft.

2. MISSION ROUTE

Takhl1, direct to Green Anchor extend, direct to north station, direct to Red River, direct to 21°46'N/105°18'E direct Thud Ridge, direct target. Reverse route on the egress.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1 & 3

6 - 750-lb bombs
1 - AIM-9 missile
1 - QRC-160 pod
2 - 450-gal wing tanks
1029 rnds 20mm ammo

F-105 BLUE 2 & 4

6 - 750-lb bombs
1 - QRC-160 pod
2 - 450-gal wing tanks
1029 rnds 20mm ammo

All aircraft camouflaged.

MIG-21

Configuration unknown
Not camouflaged

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Solid undercast clear above with good visibility.

Altitude: 14,000 ft

Heading: 090°

Speed: 500 KCAS

Fuel State: 10,500 lb

Flight Formation: Modified Fluid-Four. The wingmen 1500 ft out and 500 ft high or low to provide a good ECM area of coverage.

5. INITIAL DETECTION

MIG sighted at 2 o'clock high 2-3000 ft approximately 5 miles out. Heading in the opposite direction.

6. ACTION INITIATED

BLUE Flight engaged afterburner and continued straight ahead descending and accelerating.

7. SITUATION DEVELOPMENT

The MIG-21 made a slight descending pursuit curve as he approached 5 o'clock and 2000 ft out. BLUE Flight made a hard right break into the MIG. The MIG broke off left and disengaged. No missiles or gun firings observed.

8. ORDNANCE

No ordnance expended by either the F-105s or the MIG-21.

10. AIRCREW COMMENTS

BLUE 1 was a former B-52 pilot, 250 hr in the F-105. No other information on pilot experience available on this event.

BLUE 1 felt that since all he saw was one MIG and that the MIG broke off the engagement as soon as he overshoot when the flight broke into him that it was probably a single and that he did not want to tangle with a flight of four.

11. DATA SOURCE

Project Interview: BLUE 1 (Mar 1967)

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Event II-76

12. NARRATIVE DESCRIPTION

BLUE Flight was on top on an undercast flying 14,000 ft altitude, 500 KCAS heading 090° approximately 15 miles NW of Thud Ridge. BLUE 1 sights a single MIG at 2 o'clock, 2-3000 ft high, 5 miles out heading approximately 270°. The MIG started a right turn in on BLUE Flight and made a pass from out of the sun. BLUE 1 called for afterburners and accelerated straight ahead in a slight descent. As the MIG approached 5 o'clock, 2000 ft out, BLUE 1 called a right break into the MIG while retaining ordnance. The MIG was identified as a MIG-21, silver in color. The MIG overshot in the turn, he evidently continued up north because he was not sighted again. BLUE Flight rolled out after approximately 90° of turn, checked the area visually for MIGs, then did a 180° left turn back up to Thud Ridge and continued on into the target. There were no other MIG engagements during this flight. BLUE 1 felt that he did see another flight of MIGs on Thud Ridge, but he was not sure their relative position could be ascertained; consequently, they are not entered in this report.

In reflecting back on the attack by the MIG-21, BLUE 1 felt that it was probably a single MIG, he made one high side pursuit pass on the flight. When the flight broke into the MIG, the MIG did not continue the attack. It is felt that this confirms the fact it was a single and did not want to tangle with a flight of four. The MIG was not observed to fire either missile or guns.

BLUE Flight had seen two F-4Cs hit by SAMs just before they reached the turning point at the NW end of Thud Ridge. Only three flights were able to hit the target on this strike as the remaining flights had to jettison ordnance due to MIGs.

SECRET

SECRET

Event II-77

Aircraft Involved: Four F-105s vs two MIG-21s

Results: No damage.

Vicinity of Encounter: 21°50'N 104°25'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 December 1966/1220H

BLUE Flight was on an armed reconnaissance mission in Route Package V. (West northwest of Hanoi 30 to 100 n mi) The flight was inbound to the target area south of the Red River, at 15,000 ft, when two MIG-21s attacked the flight.

2. MISSION ROUTE

Korat direct to Green Anchor, direct to north station, direct to Red River, direct to target area (Route Package V). Return, reverse course.

3. AIRCRAFT CONFIGURATIONS

F-105D

6 - 750 lb bombs
2 - 450 gal tanks
1029 Rounds 20mm
All aircraft camouflaged.

MIG-21

Ordnance unknown.
Silver (not camouflaged).

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Solid undercast tops 6-8,000 ft, good visibility above the clouds.

Altitude: 15,000 ft

Heading: 032°

Speed: 480 KTAS

Fuel State: 12,000 lb

Flight Formation: Tactical spread with element on the left.

5. INITIAL DETECTION

Blue Flight received Big Eye warnings of MIGs in the Hanoi area, but were not expecting enemy aircraft in immediate area. At 1220H Blue Flight received MIG warning from another U. S. flight in the area concurrent with a MIG sighting by Blue 1. Blue 1 reported two MIGs at 10 o'clock, 5000 ft high and 3 miles out.

6. ACTION INITIATED

Blue Flight continued on heading of 032°. The MIGs passed on the left descending from 20,000 ft maintaining 210° heading.

7. SITUATION DEVELOPMENT

Blue Flight turned to 360° heading to keep MIGs in sight. MIGs observed to break hard left and position themselves at 7 o'clock and 5 miles aft of Blue Flight.

10. AIRCREW COMMENTS

Blue 3 stated that sighting MIGs "that far south and west of Hanoi came as a surprise." In general the MIGs never operated that far from the Hanoi area. The MIGs appeared to be under GCI control and were vectored to Blue Flight. Blue 3 believed the MIGs accomplished their mission when Blue Flight jettisoned ordnance.

11. DATA SOURCES

Project Interviews: BLUE 3, 16 February 1967

Message Reports:

7AF OPREP-3	DOCO 290708	031341Z	Dec 66
7AF OPREP-4	DOCO 29712	031550Z	Dec 66
7AF OPREP-3	DOCO 29727	032210Z	Dec 66
7AF DIA	DIA 003	040010Z	Dec 66

SECRET

SECRET

Event II-77

12. NARRATIVE DESCRIPTION

BLUE Flight of four F-105Ds inbound on armed reconnaissance to Route Package V, western section of N. Vietnam, altitude 15,000 ft, airspeed 480 KTAS, just south of the Red River, heading 032°. BLUE 1 called MIGs at 10 o'clock high. They were two MIG-21s, approximately 5000 feet high heading in the opposite direction. As the MIGs passed to the left, BLUE Flight turned left to a heading of 360° to keep the MIGs in sight. As BLUE Flight turned the MIGs started a left diving turn to BLUE Flight's 7 o'clock position. The MIGs were about 3 miles in trail. BLUE 1 called to jettison ordnance and to go afterburner. BLUE Flight made a left break into the MIGs. The MIGs made a right turn breaking off the attack, rolling out on a heading of approximately 130°. BLUE Flight rolled out of its left break on a heading of 210° and egressed the target area.

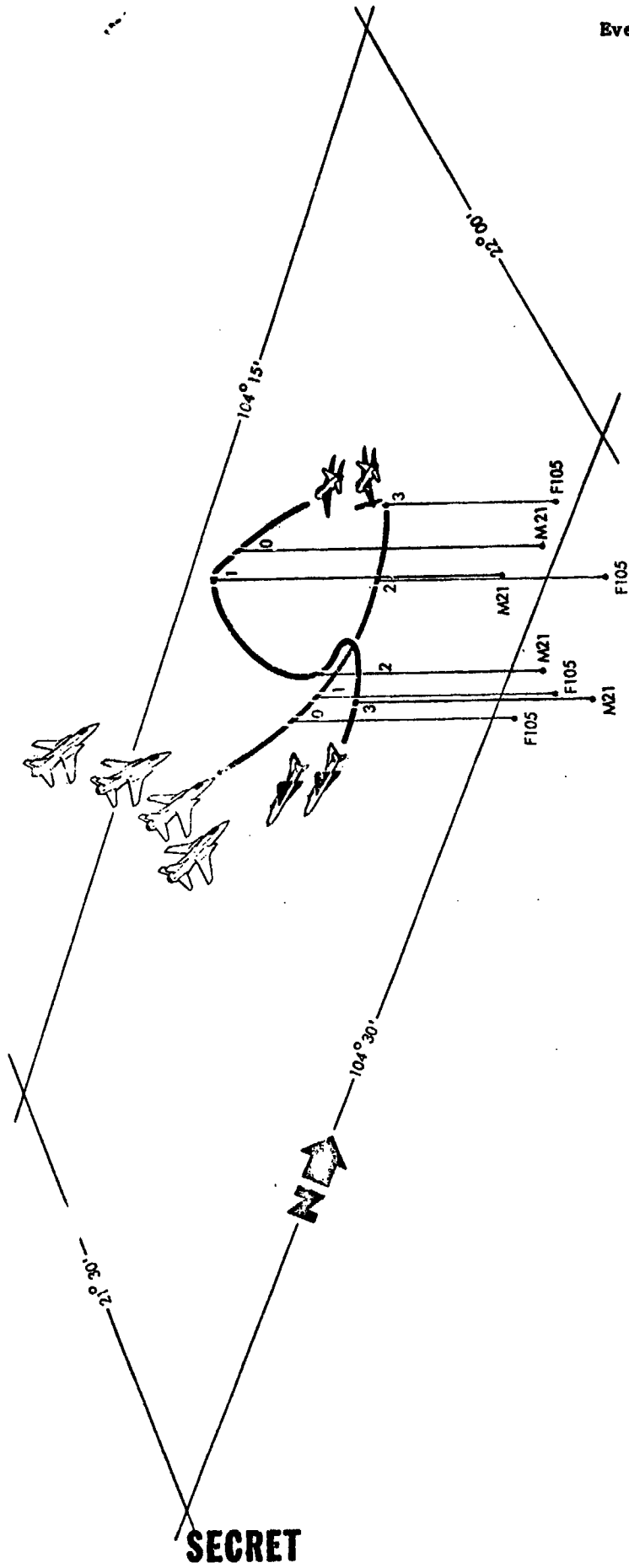
SECRET

RED BARON EVENT II-77 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	Four F-105s in fluid-four formation, 15,000 ft, 480 KTAS, heading 032°, time 1220H	Blue 1 sighted two MIGs at 10 o'clock. Flight continued on course.	Other flights in the area.	Previous MIG alert received from Big Eye but not for this area. BLUE Flight heard another flight in the area call MIGs. BLUE 1 called MIGs 10 o'clock.	Two MIG-21s altitude 20,000 ft, heading 210°.	MIG alert was for the Hanoi area. This encounter was west of the normal MIG threat area.
T ₁	Heading 032°, 480 KTAS, Alt. 15,000 ft, keeping MIGs in sight off to the left.	BLUE Flight made a left turn to keep the MIGs in sight. MIGs were at about 8 o'clock position.		BLUE 1 called MIGs turning into the flight.	MIGs started a left descending turn into BLUE Flight.	
T ₂	Heading 360°, 480 KTAS, Alt. 15,000 ft, MIGs at 7 o'clock n mi aft.	BLUE Flight jettisoned ordnance. Engaged afterburners. Started a left break into the MIGs.		BLUE 1 called jettison ordnance. Afterburner left break.	MIGs at BLUE Flight's 7 o'clock 3 n mi aft. After BLUE Flight broke MIGs turn rt. roll out on a heading of 130°.	MIGs saw BLUE Flight jettison ordnance. This may have been their primary mission since they did not press the attack.
T ₃	Heading 210°, 12,000 ft, 500 KCAS.	BLUE Flight egressed the area. No other encounters.			Heading 130°, did not fire.	BLUE 3 suspected that the MIGs were GCI controlled.

SECRET

Event II-77



SECRET

Aircraft Involved: Four F-105s vs two MIG-17s or 19s

Result: Sighting only

Vicinity of Encounter: 21°40'N/104°18'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 December 1966/1240H

BLUE Flight attacking JCS 19.000 at 21°05'N/105°55'E.

2. MISSION ROUTE

Korat, Thailand, directly to air refueling area, White, Orange or Red Anchor. Directly north station directly to target. Armed reconnaissance in Route Package V after hitting target, return route directly Udorn, directly Korat.

3. AIRCRAFT CONFIGURATION

F-105 BLUE 1, 2, 3, 4

6 - 750-lb bombs, 1020 rnds 20mm ammo,
2 - 450 gal fuel tanks

4. FLIGHT CONDITIONS

Weather: Unknown

	<u>BLUE 1, 2, 3, 4</u>	<u>MIG 1</u>
<u>Altitude:</u>	15,000 ft	25,000 ft
<u>Heading:</u>	230°	315°
<u>Speed:</u>	440 KTAS	---
<u>Fuel State:</u>	10,000 lb	---

5. INITIAL DETECTION

No MIG warning for this area from Big Eye. BLUE 3 called bogies at 4 o'clock high. BLUE 1 sighted the bogies, two¹ silver aircraft, heading northwest. Aircraft appeared to be MIG-17 or -19 type.

6. ACTION INITIATED

BLUE Flight began right turn, keeping MIGs in sight.

7. SITUATION DEVELOPMENT

BLUE Flight continued in turn, completely 360°. MIGs continued on northwest heading disappearing from sight.

8. ORDNANCE

BLUE Flight - 6 750-lb bombs, 1029 rnds ammo

MIG - Unknown - silver color

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	4200	500	40	Pilot background primary fighter test-pilot level. Korean War experience in F-80. Had completed a short refresher course at Nellis in the F-105 prior to arriving in SEA.
BLUE 4	2400	150	Unknown	Pilot background mostly ADC F-94C and F-102.

Comments on This Encounter

BLUE 1 - A low-drag missile to be carried by the F-105 would have been useful in this case. BLUE 1 did not want to jettison ordnance and chase after the MIGs for two reasons: (1) the primary mission was to deliver bombs and (2) the MIG-17 can out-turn and out-maneuver the F-105. BLUE 1 did not feel he had a good chance of a kill with the M-61 gun only.

¹Interviewees reported flight of two MIGs - OPREP reported one MIG.

SECRET

Event II-78

10. AIRCREW COMMENTS (Continued)

The gun air-to-air mode requires too many switching operations changes when changing from ground-to-air mode. The present radar for air-to-air is inadequate for a fast-developing hassel close to the ground. It is unreliable for lock-on and requires too much in the way of switches and controls.

The ECM capability of the QRC-160 is good but the drag and reliability at high speed, and low altitude is questionable. Recommend an internally mounted ECM capability.

The rearward visibility in the F-105 is very poor.

11. DATA SOURCES

Project Interviews: BLUE 1 and 4 - 15 February 1967

Messages, Reports:

7AF	OPREP-4	DOCO	29697	031044Z	Dec 66
7AF	OPREP-3	DOCO	29720	031955Z	Dec 66

12. NARRATIVE DESCRIPTION

See Items 5 and 7. No additional details.

SECRET

SECRET

Event II-79

Aircraft Involved: Four F-105s vs one MIG-21

Result: Sighting only.

Vicinity of Encounter: 21°42'N/104°53'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 December 1966/1213H

BLUE Flight on ROLLING THUNDER interdiction mission. JCS 19.00 target.

2. MISSION ROUTE

Korat, Thailand, directly to air refueling area, White, Orange or Red Anchor. Directly north station directly to target. Armed reconnaissance in Route Package V after hitting target, return route directly Udorn, directly Korat.

3. AIRCRAFT CONFIGURATION

F-105 BLUE 1, 2, 3, 4

6 - 750 lb bombs, 2 - 450 gal fuel tanks

1029 rds 20mm ammo

4. FLIGHT CONDITIONS

Weather: Unknown

	<u>BLUE 1, 2, 3, 4</u>	<u>MIG 1</u>
<u>Altitude:</u>	17,000 ft	20,000 ft
<u>Heading:</u>	230°	120°
<u>Speed:</u>	440 KTAS	
<u>Fuel State:</u>	10,000 lb	

5. INITIAL DETECTION

BLUE Flight sighted one MIG-21 at 12 o'clock position, 3 to 5 miles distant on 120° heading. MIGs above F-105s at 20,000 feet. No hostile action.

11. DATA SOURCE

7AF	OPREP-3	DOCO	29720	031955Z	Dec 66
7AF	OPREP-4	DOCO	29697	031044Z	Dec 66

12. NARRATIVE DESCRIPTION

See Item 5

Event II-80

Aircraft Involved: Four F-105s vs one MIG-17

Results: Sighting Only

Vicinity of Encounter: 21°23'N/104°19E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/1040H

2. MISSION ROUTE

Flight departed Korat to strike JCS Target 19.00.

11. DATA SOURCES

7th AF 042250Z Dec 66

12. NARRATIVE DESCRIPTION

BLUE flight, on a strike at JCS 19.00, heading 360° at 16,000 ft, observed a MIG-17, estimated altitude 30,000 ft, heading 180° pass overhead. The MIG turned SW and was lost from sight.

SECRET

SECRET

Event II-81

Aircraft Involved: Four F-105Ds vs one MIG ?

Result: Sighting only

Vicinity of Encounter: 21°00'N/104°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 3 December 1966/unknown

Four F-105s (BLUE Flight) were egressing from a strike on North Vietnam.

11. DATA SOURCES

Project interview with a member of BLUE Flight (15 Feb 67).

12. NARRATIVE DESCRIPTION

BLUE Flight was egressing Route Package V heading toward TACAN Channel 97. The flight was at about 22,000 feet when a MIG was seen following the flight at an altitude of about 35,000 feet, and co-speed. The MIG followed the flight to about 20 miles south of Channel 97 at which point it made a large diameter left turn and headed back toward North Vietnam.

Event II-82

Aircraft Involved: Four F-105s vs two possible MIGs

Result: Sighting only

Vicinity: 21°50'N/104°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/1040H

Flight of four F-105s on an IRON HAND mission (SAM suppression). Heading 330°, altitude 12,000 feet.

11. DATA SOURCES

RED BARON MIG incident summary.

12. NARRATIVE DESCRIPTION

BLUE 3 observed two possible MIGs at 2 o'clock, 10 nmi out, heading southwest. BLUE 3 called out the bogeys and BLUE flight turned into them. The bogeys turned north and disappeared. BLUE 3 was the only one to see the aircraft, both bright silver. He was too far away to determine type.

SECRET

Aircraft Involved: Four F-105s vs Eight to Ten MIG-17s

Result: None, except BLUE 4 damaged by ground fire during target strike

Vicinity of Encounter: 21°16'N/105°48'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/1637H¹

BLUE Flight (four F-105s) was the fourth flight of a five-flight strike force fraggged to attack JCS 51.10, a petroleum storage area northeast of Phuc Yen airfield. Events II-84 and II-85 describe the MIG encounters for other flights in this same strike force.

2. MISSION ROUTE

BLUE Flight departed from Takhli, refueled enroute, then flew from Laos across the Red River to the northern edge of Thud Ridge and down the western side of the ridge on a southeast heading to the target area. Egress was made on a northwest heading up Thud Ridge and then to the west across the Red River.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

- 6 - 750-lb GP bombs
- 1 - 20mm Cannon
- 1 - QRC-160 (ECM pod)
- 2 - 450 Gallon tank
- (BLUE 4 carried a strike camera pod)

MIG-17 ALL

MIGs carried an unknown mix of air-to-air missiles (probably Atolls) and cannons. All MIGs were silver in color and no external tanks were observed. At least one MIG was configured with afterburner.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Haze from ground level to 7000 ft with visibility 3-5 miles into the sun and 7 miles away from the sun. Scattered cumulus clouds, bottoms at 3000 ft, 2/8 coverage, and clear visibility above the haze.

	<u>BLUE 1, 2, 3, 4</u>	<u>MIG-17 (4)</u>
<u>Altitude:</u>	8-10,000 ft AGL	10-15,000 ft AGL
<u>Heading:</u>	145°	350°-360°
<u>Speed:</u>	400-450 KCAS	Unknown
<u>Fuel State:</u>	10,000+ lb	Unknown
<u>Flight Formation:</u>		



Pop-up: BLUE 1 rolling in over the top
 BLUE 2 and 3 spacing for roll in
 BLUE 4 sliding inside BLUE 3

5. INITIAL DETECTION

BLUE Flight was alerted to the presence of MIGs while on their inbound leg approximately 2 minutes prior to TOT when the preceding flight in the strike force was engaged by MIGs at the target (see Event II-84). Shortly thereafter, BLUE 2 saw a single MIG-17 that was turning back toward the target area from a northwesterly heading along the south side of Thud Ridge; however, this MIG did not attack or follow BLUE Flight.

¹This Event occurred subsequent to Event II-84, however, this time (as reported in the OPREP) is the best available from official sources. The Event actually occurred at about 1544 - 1647H.

As the flight approached the pop-up point, BLUE 2 and 3 reported that they saw an estimated 8-10 MIGs orbiting near the pop-up point, high, in the vicinity of Phuc Yen airfield. As BLUE Flight was climbing through 8-10,000 in the pop-up, BLUE 3 called out a flight of four MIGs diving down in a quartering head-on pass from 1 o'clock high approximately one mile out. These four aircraft were positively identified by BLUE 3 as MIG-17s shortly after initial detection.

6. ACTION INITIATED

BLUE Flight continued the planned target strike with each aircraft individually rolling in left on a dive bomb run that would put all four F-105s in a trail attack from different headings approximately 10°-15° apart. As BLUE Lead rolled in on the target, the MIGs rolled into attack the flight. BLUE 2 fired a short 50-round 20 mm cannon burst at a MIG-17 that suddenly appeared in front of him crossing from right to left as BLUE 2 started into his delayed offset roll-in behind BLUE lead. This MIG yo-yo'ed to maneuver in behind BLUE 2 on his bomb run.

As BLUE 3 started his nose high, left roll in, he again spotted MIG-17s in a 20° to 30° dive passing from a 1 o'clock to a 12 o'clock position. BLUE 3 continued around in a left turn long enough to fire 75 to 100 rounds of 20mm cannon in a 90 degree deflection shot at one of the MIGs.

7. SITUATION DEVELOPMENT

While BLUE 3 was firing, another one of the MIGs fired a "SIDEWINDER-type" (probable Atoll) missile at either BLUE 1 or BLUE 2. (BLUE 2 saw a missile pass his aircraft and continue toward the ground with the motor still burning.) BLUE 3 could not turn with the MIGs and lost sight of them as they "all passed on by him" in their dive. BLUE 3 then rolled out and delivered his bombs on the target, jettisoning his 450-gallon drop tanks right after bomb release as did the other members of the flight. BLUE 4 did not encounter MIGs in his dive bomb run; however, he was hit by automatic weapons fire in the pull out and lost his P1 hydraulic system.

BLUE Flight pulled off the target and started a low-altitude egress northwest along Thud Ridge. BLUE 1 was in the lead with a MIG-17 on his tail, which was being pursued by BLUE 2. BLUE 2 also had a MIG-17 on his tail that was being fired on by BLUE 3. BLUE 4 was just off the target and heading northwest. (Although unobserved at this time, there was at least one additional MIG-17 at BLUE 3's 2 o'clock position, 2 to 3 miles range, maneuvering to attack BLUE Lead or BLUE 2.)

BLUE 3 fired a single burst of approximately 450 rounds of 20mm cannon at the MIG behind BLUE 2. Before BLUE 3 could fire another burst this MIG broke hard left for 45°, then reversed his turn as BLUE 3 passed him. Since BLUE 3 was going better than 1.1 Mach he continued straight ahead realizing that this MIG was no longer a threat.

Although not sequentially correlated, at about this time BLUE 4 sighted a MIG-17 coming head on from 12:30 o'clock at an estimated range of 4000 ft. BLUE 4 began firing at an estimated 2000 ft and expended 95 rounds of 20mm cannon before the MIG passed behind him.

During the above sequence of events, BLUE 2, unaware that the MIG under attack by BLUE 3 was behind him, was closing on the MIG-17 that was now at 5-6 o'clock position approximately 2-3000 ft behind BLUE Lead. Just after BLUE 2 started firing at this MIG, BLUE 3 saw still another MIG 2-3 miles out at his 2 o'clock to 2:30 o'clock position, launching a "SIDEWINDER-type" missile at either BLUE Lead or BLUE 2. BLUE 3 called for a "BLUE break" since he didn't know which aircraft was under attack. BLUE Lead broke right immediately and BLUE 2 hesitated since he had a good firing pass going and the break did not specifically identify him. After BLUE 2 had fired approximately 100 rounds the MIG-17 lit his afterburner and made a hard right break just as BLUE 2 ripple fired, smoking missiles with motors burning passed within 10-20 ft of BLUE 2's canopy. BLUE 2 did a hard left 120° roll, breaking down into the ground. The missiles detonated at an estimated 2000 ft and 150 feet, respectively, ahead of BLUE 2.

The MIGs disengaged at this point and the flight continued up Thud Ridge to join at the north end and egress for an uneventful post-strike refueling and recovery at Takhi. BLUE Flight did sight two additional MIGs, southbound, low at approximately 2-3000 ft AGL in a valley as they crossed the north end of Thud Ridge; however, no hostile action was initiated by either adversary.

8. ORDNANCE

	<u>20mm</u>	<u>No. fired Soviet AAM (Possibly AA-2)</u>	<u>Remarks</u>
BLUE 1	0		
BLUE 2	150-200 rd		in two bursts
BLUE 3	543 rd		in two bursts
BLUE 4	95 rd		
MIG-17		1	Probable ATOLL
MIG-17		2	Probable ATOLL

9. EQUIPMENT PROBLEMS

F1 hydraulic system inoperative due to automatic weapons ground fire hits.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1				
BLUE 2	650	370	76	First flying assignment out of basic pilot and combat crew training.
BLUE 3		250-275	60	
BLUE 4		450	60	Flew P-47s in WWII.

Comments on this Encounter

BLUE 2: Needed more rearward visibility and a snap-shot capability. Had a fair knowledge of MIG-17 capabilities and knew the F-105 could not "hassle" with MIG-17s. When you're close to the ground above the Mach you get a vapor around the canopy and you can hardly see out.

BLUE 3: The F-86 and F-100 systems for changing from dive bomb to air-to-air mode were far superior to the F-105, whose system leaves much to be desired. The two-second delay between bursts on the Gatling gun is another drawback to the system. More than one gun would be desirable because of gun jam problems.

BLUE 4: An action reject button to change the manual sight to an air-to-air sight would have been the answer, but to reach down and turn on radar at a time like this was just too confusing.

11. DATA SOURCES

Project Interviews: BLUE 2 (5 Feb 67), 3 (6 Feb 67), and 4 (Feb 67)

Messages:

041440Z Dec 66, SECRET, DOCO 29769 Dec 66.

041100Z Dec 66, SECRET, DOCO 29759 Dec 66.

042250Z, Dec 66, SECRET, DIO. 30926 Dec 66.

12. NARRATIVE DESCRIPTION

BLUE Flight descended from a cruise altitude of 15-16,000 ft as they crossed the Red River inbound toward the northern edge of Thud Ridge for a strike on JCS 51.10, a POL storage area near Phuc Yen airfield. The flight proceeded down the western side of Thud Ridge toward the target on a heading of approximately 145° at 4-6000 ft AGL, approximately 480 kt ground speed. At this time, approximately 2 minutes prior to TOT, BLUE Flight was alerted for MIGs when the preceding strike flight was engaged in the target area. Shortly thereafter, BLUE 2 sighted a MIG-17 that "bellied up" in front of the flight to reverse his northwesterly heading and return towards the target area without any further significant action.

As the flight went afterburner accelerating to 550 KCAS for pop-up, BLUE 2 saw 8-10 MIG-17s (silver in color, no marks, large easily distinguished wings) in orbit at an estimated 8-10,000 ft in the target area. (BLUE 2 had crossed over to form a four-ship right echelon, nearly line abreast, so the flight could make a left roll in for a trail formation attack individually varying bomb headings by 15 to 20 degrees.) As BLUE Flight was climbing through 8-10,000 ft AGL in the shallow pop-up on approximately 145° (450 KCAS, 20° pitch angle), BLUE 3 identified a flight of 4 silver MIG-17s diving in a quartering head-on pass from 1 o'clock high approximately one mile out. The MIGs were in two-ship elements approximately 1000 ft apart with the second element about 1500 feet back, -- "aiming more toward BLUE Lead."

As BLUE Lead rolled in on the target, the MIGs rolled in to attack the flight. As BLUE 2 was just ready to roll in, a MIG-17 appeared suddenly in front of him crossing from left to right. BLUE 2, pulling 2 to 3 g's for the roll in on the target, fired a short 50-round burst using only the combining glass, -- no sight --, for aiming. This MIG yo-yo'ed to maneuver in behind BLUE 2 as he entered his bomb run.

At this point, BLUE 3 had started a nose-high, left roll in and spotted "MIG-17s" in a 20° to 30° dive passing from his 1 o'clock to his 12 o'clock position. BLUE 3 continued turning to hold the MIGs at 12 o'clock and was able to fire 75 to 100 rounds of 20mm cannon for a 90 degree deflection shot, 1500-2000 ft range, at the "number 3" MIG. (BLUE 3 fired in a 30°-40° nose-up pitch attitude, angle of bank increasing from 30° to 60°, airspeed bleeding down from 400-300 KCAS. Since he had a 116 mil reticle depression, he sighted through the wind screen only). While he was firing, BLUE 3 saw the lead MIG-17 fire a missile "apparently at BLUE Lead" who was at 12 o'clock

to the MIG at 2000 ft or less range, "headed down." (BLUE 2 saw a missile pass his aircraft and continue toward the ground with the motor still burning.) BLUE 3 could not continue turning with the MIGs and lost sight of them as they "all passed on by him" in their dive.

BLUE 4 did not encounter any MIGs during the bomb run; however, he was hit by automatic weapons fire in the pullout and lost his P1 hydraulic system. All flight members jettisoned external tanks immediately after bomb release and remained in afterburner from pop-up to final disengagement with the MIGs. The external tanks were going dry at this point and all flight members had 9000-10,000 lb of fuel aboard.

BLUE Flight pulled off the target and started a low altitude egress northwest along Thud Ridge. The flight "pulled off pretty well close together. There was not much, or any resemblance of a formation; we had everybody in sight." BLUE 1 was in the lead with a MIG-17 on his tail which was being pursued by BLUE 2. BLUE 2 also had a MIG-17 on his tail that was being fired on by BLUE 3. BLUE 4 was just off the target and heading northwest. (Although not observed at this time, there was at least one additional MIG-17 at BLUE 3's 2 o'clock position, 2 to 3 mile range, maneuvering to attack BLUE Lead or BLUE 2.)

BLUE 3 pulled off the target and looked up to see a silver MIG-17 at 11:30 o'clock low, same heading, straight and level at approximately 4000 ft range. (After bomb release he had reset switches to radar standby, radar search and attack, weapons selector knob conventional, and missiles air.) He began firing a continuous burst of approximately 450 rounds at an estimated range of 3000-3500 yards, airspeed Mach 1-1.5 accelerating. When nothing happened he then realized that his present sight setting with the piper on the target gave him 800-1000 ft range so he pulled the piper high and kicked the rudders with no apparent results. While he was firing he noticed that this MIG was "sitting behind another F-105" (BLUE 2). BLUE 3 stopped firing to close on the MIG; however, before he could fire another burst this MIG broke hard left for 45°, then reversed his turn as BLUE 3 passed him at 9 o'clock, 3-4000 ft range. BLUE 3, now going 1.15 Mach, did not attempt to turn with this MIG and continued straight ahead; however, he had lost sight of BLUE 2 watching this MIG break.

Although not sequentially correlated, at sometime during the egress engagements ("about 2 minutes from the target"), BLUE 4 sighted a MIG coming straight into him from 12:30 o'clock at an estimated range of 4000 ft, 2-5 degrees deflection. (BLUE 4 was at 560 KCAS, 5000 ft altitude, heading northwest up Thud Ridge) BLUE 4 cranked his fixed reticle to 20 mils, pulled up for an estimated sight picture, and fired 95 rounds from 2000 ft range until the MIG passed over his left wing. Because of the high closure rate, BLUE 4 estimated the rounds went low and behind the MIG. The MIG did not fire but banked away from BLUE 4. BLUE 4 banked to hold a head on firing pass until the MIG went by and then BLUE 4 continued a northwest egress up Thud Ridge.

During the above sequence of events, BLUE 2 unaware that the MIG under attack by BLUE 3 was behind him, was closing on a MIG-17 that he had "called out" at 5-6 o'clock, approximately 2-3000 feet behind BLUE Lead. (BLUE 2 was accelerating from 550-600 KCAS at about 2000 ft AGL. Although he tried to crank his depression to the caged position, he had no reticle for aiming.) BLUE 2 began firing at an estimated 1500 ft range as he closed on this MIG. However, just after BLUE 2 began firing, BLUE 3 saw a flash of a missile being fired off to his right by still another MIG-17 at his 2 to 2:30 o'clock position, 2-3 miles out. BLUE 3 called for a "BLUE break" since he didn't know if the missile had been launched at BLUE Lead or BLUE 2. BLUE Lead broke right immediately and BLUE 2 hesitated since he had a good firing pass going and the break call did not specifically identify him. After BLUE 2 had fired approximately 100 rounds of 20mm cannon the MIG-17 lit his afterburner and made a hard right break just as 2 Atolls, ripple-fired, passed within 10 to 20 feet of BLUE 2's canopy, -- smoking with motors still burning. BLUE 2 did a hard left 120° roll, breaking down into the ground. The missiles detonated at an estimated 2000 feet and 150 ft, respectively, ahead of BLUE 2.

BLUE Flight continued northwest up Thud River at about 1.1 Mach at low altitude and the MIGs disengaged. The flight joined at the north end of the Ridge with approximately 7000 lb fuel remaining and egressed for an uneventful post-strike refueling and recovery at Takhli. The flight did sight two additional MIGs, southbound, low at approximately 2-3000 ft AGL in a valley as they crossed the north end of Thud Ridge; however, no hostile action was initiated by either adversary.

SECRET

Event II-84

Aircraft Involved: Four F-105s vs sixteen MIG-17s

Result: One MIG-17 probably destroyed

Vicinity of Encounter: 21°14'N/105°51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/1642H

BLUE Flight (four F-105s) was the first flight of a five-flight strike force fraged to attack JCS 51.10, a petroleum storage area northeast of Phuc Yen airfield. Events II-83 and II-85 describe the MIG encounters for other flights in this same strike force.

2. MISSION ROUTE

BLUE Flight departed from Takhli, refueled en route, then flew from Laos across the Red River to the northern edge of Thud Ridge and down the western side of the ridge on a southeast heading to the target area. BLUE Lead egressed to the southwest directly towards Laos while the other flight members departed northwest up Thud Ridge and then to the west across the Red River.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

- 6 - 750-lb GP bombs
- 2 - 450-gal tanks
- 1 - QRC-160 (ECM pod)
- 1 - 20mm cannon
- (BLUE 3 and 4 were camouflaged)

MIG-17

All 16 MIGs silver in color. North Vietnamese markings observed on bottom side of wings of several MIGs (broken yellow bar with yellow star in center, all outlined in red, covered approximately 1/3 of bottom wing). No missiles observed. Several MIGs used afterburners. Several fired 23mm cannons. No external configurations reported.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Haze from ground level to 7000 ft with visibility 3 to 5 miles into the sun and 7 miles away from the sun. Scattered cumulous clouds, bottoms 3000 ft, 2/6 coverage, and clear visibility above the haze.

	<u>BLUE 1, 2, 3, 4</u>	<u>MIG-17s (1-16)</u>
<u>Altitude:</u>	12,000 ft	Est. 7,000 ft
<u>Heading:</u>	145° to NE	Northwest
<u>Speed:</u>	400 KCAS	Est. 450 kt GS
<u>Fuel State:</u>	10,000+ lb	Unknown
<u>Flight Formation</u>		

Wingmen: 1500 ft out,
25°-30° back
Elements: 1/2 mile spacing
Flights: 1-1/2 mile spacing



Pop-up in afterburner, 20° to 40° climb angle, 400-450 KCAS, climbing through 8-10,000 ft AGL.

5. INITIAL DETECTION

BLUE Flight popped up from 7000 ft AGL to 12,000 ft AGL for a left roll in to dive bomb the target on a northeast heading. As BLUE Lead was rolling over the top with his nose just coming down he saw four flights of four MIG-17s each coming in from his right heading northwest at about 7000 ft AGL.

SECRET

6. ACTION INITIATED

BLUE Lead called out the MIGs; however, the flight continued the bombing attack. As BLUE Lead pulled off the target he made a left climbing turn to 12,000 ft to seek out and engage the MIGs. Since BLUE Flight had not seen the MIGs and did not realize BLUE Lead intended to attack the MIGs, they made a pre-briefed right jinx off the target with a left turn to depart northwest up Thud Ridge.

7. SITUATION DEVELOPMENT

The MIGs had continued on course as BLUE Lead turned from a westerly heading to a northern or northeasterly heading to start a diving attack on the number two MIG in the second flight of MIGs. This MIG started a right turn while the rest of the MIGs continued on course. BLUE Lead closed with an estimated 150 to 200 kt overtake, opening fire at 1500 feet and stopped firing at approximately 200 feet as the MIG made a hard break to the right. BLUE Lead lost sight of this MIG as he went over the top of him in a slight right bank climbing in afterburner keeping his airspeed up. As he looked back and down for the first MIG, he saw two other MIGs in fighting wing formation at 4 o'clock, 1800 ft range, beginning to pull lead on him. There were two other MIGs further back, straggling behind with about 1/2 mile separation between them. BLUE Lead tightened his right turn slightly, dropped his nose and used hard right rudder to cause the two threatening MIGs to overshoot to the outside of the turn crossing about 3-500 feet above him. BLUE Lead relaxed rudder, shoved the nose down and reversed into a gentle turn to the left back over the target noting that these MIGs were no longer a threat as they were going away from him at his 2 o'clock position in a right bank. BLUE Lead saw numerous MIG-17s as he continued this turn, but all were too well protected to attack. Although the details from this point to the next encounter are somewhat hazy, BLUE Lead was threatened by two additional MIGs somewhere in this turn. As he maneuvered for separation in a dive at about 7000 feet over the target, he spotted a single MIG-17 about 2000 feet below him coming head on about one mile away, flying straight and level. As BLUE Lead turned in and continued his dive toward the MIG's 10 o'clock position, the MIG started a climbing turn into BLUE Lead. BLUE Lead opened fire at about 1500 feet with 20mm shells impacting from low on the left side of the MIG's nose up across the cockpit and to the tail when BLUE Lead stopped firing and pulled up over him. Although the MIG was firing at BLUE Lead, he was ineffective since BLUE Lead was approaching the MIG from his 11 o'clock to 11:30 o'clock position for this pass. Looking back from a right climbing turn, BLUE Lead saw the MIG in a gentle descending turn with pieces coming off the aircraft. He also saw "little flashes" going past his canopy and diverted his attention to three MIG-17s at 4:30 to 5 o'clock, two of them within 200 feet in a "nice wing" formation. As BLUE Lead tightened his turn, the MIGs, both firing, slid toward 6 o'clock with the wingman crossing to his leader's left side. BLUE Lead continued in a slight diving turn using alternate left and right rudder to spoil the MIGs' aim. After three or four jinks, he realized he was pulling away from the MIGs and rolled level and dived to tree-top altitude as the last cannon balls passed high above his canopy. As he crossed the Red River outrunning the MIGs at 1.15 Mach on the deck, he turned southwesterly to egress the area.

When BLUE 3 had realized that BLUE Lead was engaged with MIGs, he reversed turn toward the target area. (BLUE 2 and 4 made a confused high speed departure northwest up Thud Ridge with BLUE 4 attempting to join on BLUE 2 who was trying to outrun BLUE 4 as a suspected MIG.) As BLUE 3 turned through a southern heading at an estimated 9000 ft AGL, he saw a flight of four MIG-17s about 2000 to 3000 feet below him in a tight orbit over the target. He also saw another flight of two unidentified MIGs going away from him at 3 o'clock co-altitude, in a slight descent. The four-ship flight split into two elements and BLUE 3 lost sight of one element as he tried to drop down in trail on the other element. However, BLUE 3 did not maneuver into firing range since he could not match their turn. He broke off this attempt to engage these MIGs when BLUE Lead advised that he was disengaging and departing the target area. The MIGs did not attempt to engage BLUE 3 as he departed northwest up Thud Ridge without further incident.

8. ORDNANCE

(No. fired/No. hits)

	<u>Cannon</u>	<u>Remarks</u>
BLUE 1	2/1	No hits observed during the first firing attack on the #2 MIG in the second flight of the four-flight formation. Estimated 15 to 25 hits (probably kill) on the second MIG attacked head-on over target.
1st MIG Attack (Single MIG)	1/0	MIG hit by BLUE 1 on head-on pass.
2nd MIG Attack (2 or 3 MIGs)	1/0 Each	

9. EQUIPMENT PROBLEMS

BLUE 1 -- gunsight would not operate properly. The reticle sight picture would disappear when the "action reject" button was actuated for radar lock-on.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	4000	800	55	Extensive air-to-air gunnery training and ACM.
BLUE 3	3000	250	28	Mostly ADC, F-102 time.

Comments on This Encounter

BLUE 1: "I was quite confident of my airplane, my equipment, and myself, frankly, The frame of mind that I was in was that if I ever got the chance, I was definitely going to have a MIG I just flat wanted to mix it up with a MIG."

Commenting on the F-105, BLUE 1 would like better maneuverability, more acceleration, more time in afterburner, better visibility, digital rather than analog gunsight readouts, a simpler switching system going from ground attack to air-to-air mode, and a better radar lock-on and performance capability.

BLUE 3: Cockpit set up is completely inadequate. Too many manual operations required to change attack modes. The dual role concept compromises the capabilities for both missions. You can't aggressively pursue a target while looking into the cockpit or worrying about getting the right switch settings.

Need a missile with a bigger firing envelope.

11. DATA SOURCES

Project Interviews: BLUE 1 (5 Feb 67) and 3 (3 Feb 67)

Messages:

041505Z Dec 66, SECRET, 7AF 29772 Dec 66.
040942Z Dec 66, SECRET, 7AF, DOCO 29754 Dec 66.
040920Z Dec 66, SECRET, 7AF, DOCO 29752 Dec 66.

12. NARRATIVE DESCRIPTION

BLUE Flight descended from cruise altitude as they crossed the Red River inbound toward the northern edge of Thud Ridge for a strike on JCS 51.10, a POL storage area near Phuc Yen airfield. The flight proceeded down the western side of Thud Ridge toward the target on a southeastern heading at 7000 ft AGL.

The flight popped up from 7000 ft AGL to 12,000 ft AGL "fanning out" to gain spacing for a left roll in to dive bomb the target on a northeastern heading. (In the pop-up, BLUE 4 slid inside of BLUE 3, which delayed BLUE 3's roll in and eventually resulted in BLUE 4 coming off of the target ahead of BLUE 3. As BLUE Lead was rolling over the top of the pop-up with his nose coming down (40°) starting the dive bomb run, he sighted four flights of four silver MIG-17s coming from his right heading northwest at about 7000 ft AGL. (The MIGs were in trail with approximately 1/2-mile spacing between elements and 1-1/2-mile spacing between flights. The nearest flight was at BLUE Lead's 9 o'clock low position, approximately 1/4 to 1/2 mile out.) BLUE Lead continued his bomb run advising the flight that there were "MIGs under us and AA fire around us." (It was later determined at debriefing that the other flight members, who had not seen the airborne MIGs, thought BLUE Lead was referring to the MIGs that could be seen taxiing for takeoff at Phuc Yen airfield during the pop-up.) As BLUE Lead pulled off of the target in a left 1-1/2 to 2 g's climbing turn at 600 KCAS, he selected afterburner and jettisoned all of his external stores except his QRC-160 pod and selected "guns air" and "radar search and attack". (BLUE Lead had a full internal fuel load at this time.) BLUE Lead continued the left climb to about 12,000 ft AGL on a westerly heading when he again spotted the MIGs at his 9:30 to 1:00 o'clock low position, 3-mile range, 7000 ft AGL and still continuing northwest in level formation at an estimated 450 kt. (BLUE Lead believed the MIGs had not seen BLUE Flight and were apparently under GCI control being vectored to intercept the rest of the inbound strike force.)

Meanwhile, BLUE 2, 3, and 4, unaware that BLUE Lead had broken left in pursuit of the MIGs, continued with the prebriefed right break off of the target and a left turn to depart northwest up Thud Ridge. BLUE 2 was in the lead with BLUE 4 attempting to join with him, having assumed that BLUE 2 was BLUE 3. BLUE 3 was actually back off of BLUE 4's right wing and had both BLUE 2 and BLUE 4 in sight.

BLUE Lead continued to close on the MIGs at 600 KCAS and apparently crossed high above the MIGs since he made a diving turn from "a westerly heading" to attack the number two MIG in the second flight "from the southwest." BLUE Lead estimated that he started the attack from the MIGs' 7:30 to 8:00 o'clock position, high, 5000 feet behind with 150 to 200 kt overtake. The MIG apparently saw BLUE Lead and started a right turn while the

SECRET

Event II-84

remainder of the MIGs continued straight ahead. BLUE Lead was trying to get a radar lock-on; however, every time he would hit "action reject" the reticle would disappear. As BLUE Lead closed in a right turn he used an imaginary sight picture on the combining glass to track the MIG and began firing at an estimated 1500 ft range. The MIG made a hard right break after BLUE Lead began firing. BLUE Lead stopped firing at 200 ft, relaxed the 3-1/2 to 4 g's held during the attack, and passed over the top of the MIG in a slight right-banked climbing turn at 600 KCAS in afterburner. No hits were observed. As BLUE Lead looked back and down for the first MIG, he saw two other MIG-17s inside of his turn at 4 to 4:30 o'clock, "inside of 2000 ft, still outside of 1500 ft" range, beginning to pull lead on him. The wingman was flying a nice righting wing position. A third MIG-17 was "on back out quite a ways" with a fourth MIG an additional 1/2 mile back. BLUE Lead tightened his turn slightly with aileron, dropped his nose down, and used hard right rudder which caused the two threatening MIGs to overshoot to the outside of the turn crossing 3-500 feet above BLUE Lead's canopy. BLUE Lead, now doing 500 KCAS, relaxed rudder, shoved his nose further down to gain airspeed, and reversed into a gentle left turn back towards the target area. BLUE Lead discounted any further immediate threat from these two MIGs as they continued in a right turn going away from his 2 o'clock position. BLUE Lead saw numerous MIG-17s as he continued his left turn; however, all were too well covered by other MIGs to attempt another attack. BLUE Lead was still observing heavy AA flak around him at this time.

Although the details from this point to the next encounter are somewhat hazy, BLUE Lead was threatened by two additional MIGs in this turn. (NOTE: possibly the third and fourth MIG from the previous encounter.) However, he was able to maneuver to keep them from reaching a firing position. As he maneuvered for separation from these MIGs in a 600 KCAS dive at about 7000 feet over the target, he spotted a single MIG-17 about 2000 feet below him, coming head on from 10:30 o'clock about one mile away, flying straight and level. As BLUE Lead turned in and continued his dive towards the MIG's 10 o'clock position, the MIG started a left climbing turn into BLUE Lead. (On the pass, BLUE Lead held down the "electrical cage" on the sight to obtain an approximate 1000 ft fixed ranging reticle which he placed ahead of the MIG and then pulled through the MIG as he was firing.) BLUE Lead opened fire at 1500 to 2000 ft range and continued firing until the "bullets were obviously going behind him." BLUE Lead observed 15 to 25 20mm shells impacting about a foot and a half apart starting low on the left side of the MIG's nose and continuing up across the cockpit and through the tail. The MIG was firing at BLUE Lead from 3 guns on the bottom of the aircraft; however, the MIG's fire was ineffective since the BLUE Lead was approaching from the MIG's 11:00 to 11:30 o'clock position on the pass. BLUE Lead pulled up over the MIG to look back from his right climbing turn and observe the MIG in a gentle descending turn with pieces coming off of the aircraft. He also saw "little flashes" going past his canopy and diverted his attention to three MIG-17s at 4:30 to 5:00 o'clock, two of them within 2000 ft and another further back. Again, the wingman was flying a "nice formation". BLUE Lead could see islands in the MIG intakes and fences on the wings. He could see the guns flashing and could hear and see the "little white" cannon balls going past the cockpit. As BLUE Lead tightened his right turn, the MIGs, both firing, slid toward 6 o'clock with the wingman crossing to his leader's left side. BLUE Lead continued in a slight diving turn using alternate left and right rudder to spoil the MIG's aim. After 3 or 4 jinks, he no longer could see the MIG intakes and realized that he was pulling away from the MIGs in his afterburner dive. (BLUE Lead was indicating 630 to 640 KCAS at about 3000 ft AGL.) BLUE Lead rolled level and dived to treetop altitude as the last observed cannon balls passed high above his canopy. As he crossed the Red River outrunning the MIGs at 1.15 Mach on the deck, he turned southwesterly to egress the area. (BLUE Lead had 6000 lb fuel remaining as he crossed the Red River.)

When BLUE 3 had realized that BLUE Lead was engaged with MIGs in the target area, he called the flight for a right turn and immediately reversed direction toward the target area. It is not clear whether or not BLUE 2 and 4 heard this call; however, BLUE 2 and 4 did continue on a high speed egress to the north out of the area with BLUE 4 attempting to join on BLUE 2 who was trying to outrun BLUE 4 as a suspected attacking MIG. (BLUE 2 and 4 discovered each other's identity after 4 or 5 minutes; however, they had expended so much fuel that they reached the refueling tanker with only 600 lb and 800 lb of fuel, respectively.) As BLUE 3 turned right through a southerly heading at an estimated 9000 ft AGL, he saw a flight of four MIG-17s at his 10:00 - 11:00 o'clock position, 2-3000 feet below him in a tight left orbit over the target at 2000 ft horizontal range. He also saw another flight of two unidentified MIGs going away from him at 3:00 o'clock, co-altitude, in a slight descent. (BLUE 3 was at 400 KCAS accelerating in full military power with his nose down. BLUE 3 carried a centerline MER, two 450-gallon external fuel tanks, a QRC-160 pod on his right wing. He had about 7000 lb of fuel remaining.) BLUE 3 asked BLUE Lead's position and found out he was now approaching the Black River on the deck for a southwest egress from the area. The four-ship MIG flight split with "number 3 and 4 breaking right and away from 1 and 2 at high speed." BLUE 3 lost sight of the second element as he entered a 4 to 5 g descending turn from 9000 ft AGL to 6000 ft AGL trying to drop into a trail position on the lead element. At this point BLUE Lead called, "Hey BLUE Flight, let's get out of here;" Since BLUE 3 saw that he could not match the MIGs turn or have enough overtake to maneuver into firing range, he broke it off and egressed northwest up Thud Ridge and out of the area. The MIGs did not attempt to engage BLUE 3 during this time; however, there was a considerable amount of AA flak seen, some bursting behind the MIGs.

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Event II-85

Aircraft Involved: Four F-105s vs two MIG-17s
and two MIG-21s

Result: No damage

Vicinity of Encounter: 21 14'N/105 51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/1645H

BLUE Flight (four F-105s) was one of five flights fraged to attack JCS 51.10, a petroleum storage area northeast of Phuc Yen Airfield. Events II-83 and II-84 describe the MIG encounters for other flights in this same strike force.

2. MISSION ROUTE

Not given. See Events II-83 and II-84 for route flown by other flights in this same strike force.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

6 - 750-1b GP bombs
1 - QRC-160 (ECM pod)
1 - 20mm cannon

MIG-17 (1, 2)

Gray color, used afterburner, fired 23mm cannon.

MIG-21 (1, 2)

AAMs (Type unknown)

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Not given. See Events II-83 and II-84. (F-105s were in pop-up for dive bomb attack on JCS 51.10.)

5. INITIAL DETECTION

As BLUE 2 was following lead in the pop-up, he sighted two MIG-17s at 12 o'clock, 7 n mi range, approximately 4000 ft, turning through north from east, closing on BLUE Lead.

6. ACTION INITIATED

One MIG-17 maneuvered into a position 500 to 1000 feet behind BLUE Lead, which also placed this MIG at 9 o'clock to BLUE 2. BLUE 4 jettisoned his bombs and external stores and turned in to attack this MIG causing him to break off from BLUE Lead's tail position.

7. SITUATION DEVELOPMENT

BLUE 4 closed on this MIG-17 and fired 440 rounds of 20mm cannon at a range of 800 to 1000 ft with no apparent hits. This MIG broke and was not seen again. The second MIG-17 maneuvered from BLUE 4's 9 o'clock position into a position "very close to his tail" and made an unsuccessful 23mm cannon firing pass on BLUE 4. BLUE 4 dove and jinked away from the MIG who disengaged and was not seen again. The MIG-17s were observed using afterburner during this encounter.

Meanwhile, two MIG-21s slid in behind BLUE Lead and BLUE 2. As the MIG-21 behind BLUE Lead passed BLUE 2's 9 o'clock position, BLUE 2 saw the apparent flash of an AAM launch at BLUE Lead; however, BLUE 2 did not see a missile in flight. BLUE 2 jettisoned his ordnance armed and turned into the MIG-21 on BLUE Lead's tail. The MIGs disengaged and were not seen again.

BLUE 3 had seen a gray colored MIG-17 sliding from his 2 o'clock to his 5:30 or 6 o'clock position as he was going through the top of his pop-up; however, since he was rolling away from the MIG and would pick up adequate separation speed in the dive, he ignored this MIG and continued his bombing attack. [NOTE: No further account was given of this MIG-17 which could have disengaged or perhaps been one of the MIG-17s that were engaged by BLUE 4.] BLUE Lead and BLUE 3 successfully delivered ordnance on the target although BLUE 3 was hit by ground fire during this attack.

8. ORDNANCE

(No. fired/No. hits)

	<u>Cannon</u>	<u>Soviet AAM</u>	<u>Remarks</u>
BLUE 4	1/0		440 rounds 20mm
MIG-17	1/0		
MIG-21		1/0	Probable firing

SECRET

SECRET

Event II-85

9. EQUIPMENT PROBLEMS

BLUE 3 was hit in the wheel well and doppler navigation by ground fire. He lost his P-1 and utility hydraulic systems, radio communications, DC electrical power and fuel transfer system. (Although he had a fire and a cut control cable in the wheel well, he made a successful emergency landing at Udorn Airbase, Thailand.)

10. AIRCREW COMMENTS

Experience

Unknown

Comments

BLUE 3: Aside from the inherent performance limitations of the F-105, inadequate aircrew training and the complicated switch-setting problems are the major reasons why "people weren't going to do well in air-to-air" combat in the F-105. The five flights in ACM at RTU (Replacement Training Unit) at McConnell are not adequate and because of fuel and mission limitations additional ACM training cannot be accomplished in SEA. Many of our losses can be traced to losses in flight integrity which can be directly related to lack of training. The design of a multi-mission aircraft should also include a consideration of the limitations in capability to train a human to do all of the different demanding types of mission and do them well.

11. DATA SOURCES

Project Interviews: BLUE 3 (17 Mar 1967)

Messages: 042239Z Dec 66 DOCC 29795 Dec 66
050253Z Dec 66 DOCC 29804 Dec 66
042242Z Dec 66 DOCC 29792 Dec 66

12. NARRATIVE DESCRIPTION

All available data have been included in Items 1-10; therefore, no narrative description will be provided for this event.

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SECRET

Event II-86

Aircraft Involved: Four F-105Ds vs four MIG-17s

Results: Sighting only

Vicinity of Encounter: 21°11'N/105°53'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/1706H

BLUE Flight (four F-105Ds) was on a strike mission against JCS 19.00, a railroad yard 2-1/2 n mi north of Hanoi. The strike force consisted of 40 F-105s. The first wave of fighters assigned to strike this target (16 aircraft), aborted the mission due to weather in the target area.¹ BLUE Flight was one of the flights in the second wave of fighters assigned to hit the target. BLUE Flight sighted two MIG-17s as it approached the target, two unidentified MIGs orbiting over Phuc Yen airfield, and two MIG-17s orbiting over the target. BLUE Flight did not engage the MIGs, however.

2. MISSION ROUTE

Korat, Thailand, directly to the Red Anchor extended, directly to the Red River, directly to Thud Ridge, directly to the target. Return route reversed.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE Flight

4 - CBU-24"
2 - 450 gal wingtanks
2 - QRC-160 ECM pods
1029 rounds 20mm ammo
All aircraft camouflaged

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: From over the Red River, to the north and down Thud Ridge, scattered to clear. Just off the end of Thud Ridge, 10,000 feet overcast with five n mi visibility in haze.

BLUE 1, 2, 3, 4

Altitude: 10,000 ft
Heading: 130°
Speed: 540 KTAS

Flight Formation:

Modified Fluid-Four. The wingmen in to 1,000 to 1,500 ft to provide a better ECM coverage. The element on the left at this time.

5. INITIAL DETECTION

While inbound to the target just off the end of Thud Ridge, BLUE 1 sighted two MIG-17s at 1 o'clock low in a left turn, 5 to 8,000 ft altitude and 2 n mi range.

6. ACTION INITIATED

The MIGs did not pose a threat at this time. BLUE Flight continued on to the target.

7. SITUATION DEVELOPMENT

BLUE Flight continued on and bombed their designated target. The flight egressed the target area at high speed (supersonic) at an altitude of 6 to 8,000 ft on a southwest heading. The flight did not engage the MIGs.

8. ORDNANCE

BLUE Flight 12 - CBU-24s on target, 20mm expended

MIG-17 - Not observed to expend - silver in color

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105D Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 2	3300	450	11	Pilot background primarily TAC, F-86, F-100 and F-105.
BLUE 4	2900	150		Pilot background primarily ADC, F-86 and 102.

¹The first wave hit the alternate target, JCS 51.10 (see II-83 to II-85).

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SECRET

Event II-86

Too many switch changes are required to change from the ground attack to the air attack mode. The pilot must take his eyes off the target and look in the cockpit to make the proper switch settings.

The QRC-160 pod adds considerable drag at high speeds. Recommend internally mounted ECM equipment.

An improved bombing system designed to reduce exposure time to flak and SAMs would be desirable.

11. DATA SOURCES

Project Interviews: BLUE 2, 4 Dec 66, and BLUE 4, 17 Feb 67
Messages, Reports: 7AF 0422502 Dec 66

12. NARRATIVE DESCRIPTION

As BLUE Flight departed Thud Ridge on a heading of 130° at 10 to 11,000 ft altitude and 540 knots, BLUE 1 sighted a flight of two MIG-17s at 1 o'clock low (5 to 8,000 ft) in a left turn 2 n mi out. The MIGs continued in a left turn and BLUE Flight continued on to the target. The MIGs passed BLUE Flight's 9 o'clock position heading northwest and were not seen again. As BLUE Flight rolled in on the target, heading southwest, two unidentified MIGs were seen orbiting Phuc Yen airfield and two more MIG-17s were seen orbiting the target area at approximately 6,000 ft. BLUE Flight, after completing its bomb run, egressed the area on a southwest heading at high speed (supersonic in afterburner). There was no attempt to engage the MIGs and they were not seen again as the flight egressed the area.

SECRET

Aircraft Involved: Four F-105s vs four MIG-17s

Result: One MIG-17 destroyed

Vicinity of Encounter: 21°11'N/105°54'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/1705H

BLUE flight (four F-105Ds) was on a strike mission against JCS 19.00, a railroad yard 2-1/2 n mi north of Hanoi. The strike force consisted of 40 F-105s. The first wave of fighters in on the target (16 aircraft) aborted the mission due to weather in the target¹ area. BLUE flight was one of the flights in the second wave of fighters assigned to strike this target. The flak in the target area was extremely heavy. As the flight came off its bomb run, it was jumped by four MIG-17s.

2. MISSION ROUTE

Korat, Thailand, direct to Red Anchor extended, direct to the Red River, direct to Thud Ridge, and direct to the target. Return route reverse.

3. AIRCRAFT CONFIGURATIONSF-105 BLUE 1, 2, 3, 4

6 - 750 lb bombs
2 - QRC-160 pods
2 - 450-gal. wing tanks
1 - 20mm cannon
All F-105s camouflaged.

MIG-17

23mm cannon
Silver color.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: From over the Red River to the north and down Thud Ridge, scattered to clear. Just off the end of Thud Ridge and over the target, 10,000 ft scattered to broken with 5 n mi visibility in haze.

	BLUE
	1 2 3 4
<u>Altitude:</u>	4500 ft
<u>Heading:</u>	360°
<u>Speed:</u>	550 KCAS
<u>Fuel State:</u>	8000 lbs

Flight Formation:

The flight was just coming off its bomb run and was strung out in trail. BLUE 2 was approximately 2000 ft behind BLUE 1. BLUE 3 was approximately 5000 ft behind BLUE 1 and 2. BLUE 4 was 4000 ft behind BLUE 3.

5. INITIAL DETECTION

While the flight was inbound to the target, MIG warnings had been received on Guard Channel from BIG EYE. As the flight rolled in on the target, 4 MIG-17s were sighted directly over the target several thousand ft below the flight.

6. ACTION INITIATED

BLUE flight continued with its successful bomb run. As BLUE 3 came off the target, he saw MIGs 1 and 2 at his 1 o'clock position attacking BLUE 1 and 2, who were heading northwest toward Thud Ridge. As BLUE 4 came off of his bomb run, he saw a MIG-17 (MIG 3) at his 2 o'clock position attacking BLUE 3. BLUE 1 and 2 were outside of effective gun range and were pulling away from MIGs 1 and 2. BLUE 3 started to maneuver his aircraft to the 6 o'clock position on MIGs 1 and 2. BLUE 4 attacked MIG 3 who was attacking BLUE 3. MIG 4 was maneuvering into position to attack BLUE 4.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 continued on a northwest heading toward Thud Ridge with MIGs 1 and 2 slowly dropping farther back out of range. BLUE 3 had closed to 1500 ft behind MIG 2 and was just about ready to fire when BLUE 1 called that he was hit by ground fire. BLUE 3 then broke off his attack to assist BLUE 1. BLUE 4 fired at MIG 3 who was attacking BLUE 3. MIG 3 reversed his turn to the left, but BLUE 4 followed him and continued to track and fire until MIG 3 burst into flames. BLUE 4 then broke off and discovered that MIG 4 was behind him firing. BLUE 4 dived to the deck and evaded MIG 4 in a supersonic egress up Thud Ridge.

¹The first wave hit the alternate target, JCS 51-10.

8. ORDNANCE

	(No. fired/No. Hits)		Remarks
	Cannon		
BLUE 4	1/1	700 rounds 20mm	
MIG 3	1/0	23mm cannon	
MIG 4	1/0	23mm cannon	

9. EQUIPMENT PROBLEMS

BLUE 4 had a pitch mechanical advantage malfunction warning light on during his supersonic low-altitude egress.

10. AIRCREW COMMENTS

Experience:

	Total Hours	F-105 Hours	Combat Missions	Remarks
BLUE 4	4300	100	4	Type of fighters flown: F-86, F-86D, F-101B, F-102. Mostly ADC background. Completed the F-105 fighter course at McConnell prior to SEA. Pilot suggests a better air tactics training course.

Comments on this Encounter:

BLUE 3 and 4 both commented on the MIG orbit over the target area. It was felt that the MIGs were orbiting in a corridor that had been coordinated with the antiaircraft flak sites. The flak was extremely intense and yet the MIGs were able to operate right underneath without apparent danger.

BLUE 3 came off the target and changed his switch settings from ground to missiles air when he saw the MIGs. He indicated that he was able to accomplish this change before he broke off the engagement; however, it did present a problem. This switch setting only provides for an electrically caged sight for gun firing. He did not attempt to set up the guns air and radar sight mode which is the designed means of firing the gun air to air, because it is too complicated a procedure and the radar is not reliable that close to the ground.

BLUE 4, being the last in the flight off the target, did not have time to make switch changes in the cockpit. He did not change his sight setting from the manual bombing mode, consequently he had 122 mils depression in his sight as he attacked the MIG. BLUE 4 simply pointed his aircraft at the MIG and started shooting. BLUE 4 recommends a simple switch arrangement for changing from ground to air attack, that would not require the pilot to look in the cockpit to make switch changes. He also recommends a low drag AA missile, a better turning capability, and an improvement in the rear visibility. The F-105 requires excessive aircraft maneuvering to clear back at 6 o'clock. The QRC-160 is an effective ECM item but the warning or monitor lights are on the right console and cannot be seen unless the pilot looks down over his right shoulder. The monitor and reset button should be up front so it can be seen with a glance and you don't have to look in the cockpit. The QRC-160 is a rather high drag piece of equipment when operating supersonic at low altitudes, not to mention the limitations of the equipment. He recommends that this type of equipment be mounted internally. BLUE 4 also stated that the F-105 radar is inadequate for rapid target acquisition or air-to-air use close to the ground.

11. DATA SOURCES

Project Interviews: BLUE 3, 15 February 1967
BLUE 4, 16 February 1967

Messages, Reports: OPREP-4 041445Z, December 1966, from 7AF DOCO 29770
DAI 042250Z, December 1966, DIO 30926

12. NARRATIVE DESCRIPTION

BLUE flight encountered heavy AA fire as they approached the target at 10,000 ft AGL just below a cloud layer. Rather than fly through the heavy 85-100mm flak that enshrouded BLUE 1 and 2 on roll-in, BLUE 3 and 4 pulled up and over the flak going into the clouds as they entered their left roll-in to bomb the target on a south to north heading. (As a result, when BLUE 3 came out of the clouds, he was 4-5000 ft behind BLUE 1 and 2 in the dive bomb run. BLUE 4 had lost sight of the flight, but was about another 4000 ft behind BLUE 3.)

As BLUE lead rolled in he called out, "MIGs over the target", having sighted a flight of four MIG-17s over the target in two-ship elements with 3-4000 ft spacing between elements. BLUE 3 looked down as he started his roll-in and saw two MIGs going from south to north one or two miles northeast of the target at an estimated 3-4000 ft AGL. As BLUE 4

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Event II-87

popped out of the clouds in a dive, he spotted two MIG-17s crossing low over the rail yard flying in a route formation. BLUE 3 and 4 both lost sight of the MIGs while concentrating on the bomb runs.

BLUE 1 and 2 came off the target together heading north towards Thud Ridge. As BLUE 3 jinked left, then right, off the target at 4000 ft, 550-600 KCAS, looking for BLUE 1 and 2, he spotted them about 5000 ft directly ahead. He also saw two MIG-17s about 2000 ft slant range to his right at 1 o'clock, 500 ft low, pressing an attack on BLUE 1 and 2. He estimated the MIGs to be about 3000 ft range, 5 o'clock low behind BLUE 1 and 2 in a fighting wing formation, 200 ft apart. Since BLUE 1 and 2 were beyond the MIGs' effective gun range and were doing an estimated 600 kts and accelerating, BLUE 3 did not consider these slower MIG-17s to be a serious gun threat to the lead element. BLUE 3, with both an altitude and airspeed advantage, went AB to initiate a gun attack on the MIGs from 2000 ft back at their 7 o'clock position. BLUE 3 selected missiles air and radar search and attack, which provided him with a 1500 ft fixed range "g" only computing gun sight. BLUE 3 was maneuvering into firing range just as BLUE 1 called that he had been hit by ground fire. (BLUE 1 had taken two 37mm hits, one in his wing and one in his horizontal stabilizer.) BLUE 3 immediately broke off of the attack and zoomed up and to the left passing the MIGs to join and escort BLUE lead out of the area. (BLUE 3 passed the MIGs 3000 ft high about 4000 ft off their port side with an estimated 100 kts overtake. These MIGs did not attempt to engage BLUE 3.)

The sequence of events must regress slightly to time phase BLUE 4's encounter with a MIG-17 (MIG 3) that, unknown to BLUE 3, was firing at BLUE 3 while he was maneuvering against the two MIGs as described above.

While BLUE 4 was in his bomb run, heading north, he had glanced to the left and seen an aircraft obscured in the sun at 9 o'clock, which he assumed to be BLUE 3. BLUE 4 continued his bomb run and jinked left after bomb release firing a burst of approximately 100 rounds at a warehouse in his pullout. As he jinked back to the right, he again saw the aircraft he had previously seen in the bomb run. When BLUE 4 took a better look, he recognized the high tailed, silver aircraft to be a MIG-17 rather than BLUE 3. This MIG-17 (MIG 3) was at BLUE 4's 11 o'clock position at 3-4000 ft in a right turn. BLUE 4 then noticed that the MIG was tracking BLUE 3 and firing his cannons; however, BLUE 4 felt the MIG was too far behind BLUE 3 for his cannon fire to be effective. (At this time, BLUE 4 estimated that he was at 5-7000 ft AGL at 600 KCAS.) BLUE 4 established a cut off lead angle on the MIG and began firing a continuous burst of approximately 670 rounds of 20mm cannon. Since BLUE 4 was still in ground guns with a 122 mil conventional bomb setting, he simply established a join up type cut off holding an "eyeball estimate" for azimuth and moving the nose up and down (kicking rudders) to bracket the MIG in elevation. BLUE 4 continued firing as he followed the MIG through a 3-4 g turn to the left that was initiated by the MIG as soon as BLUE 4 started firing. BLUE 4 broke off the attack at 6-700 ft range at an estimated 4000 ft AGL, heading south (6-7000 lbs fuel remaining). BLUE 4 observed flames and smoke coming out of the MIG's (MIG 3) wing roots. (Camera film assessment indicates that BLUE 4 began hitting the MIG at 1500 ft range while pulling 110 mils lead. The MIG took hits "for about 12 frames which should be about 37 rounds" of 20mm cannon fire.) At this time BLUE 4 glanced back and saw another MIG-17 (MIG 4) at his 6 o'clock position 1000-1500 ft range. Although this MIG was not pulling lead, he was firing at BLUE 4 "from the top and bottom of his snoot." BLUE 4 jettisoned his external fuel tanks and MER, rolled inverted and dived for the deck. BLUE 4 leveled out at 50 ft AGL in excess of 600 KCAS in a left turn going south. BLUE 4 reversed turn and made a jinking supersonic egress north on a heading of 345°. He did not see MIG 4 again after diving for the deck. BLUE 4 joined his flight at the north end of Thud Ridge and they egressed from the area without further incident. BLUE 4 thinks that MIG 4 may have collided with his (BLUE 4's) fuel tanks.

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303

Aircraft Involved: Four F-105s vs nine MIG-17s

Results: No Damage

Vicinity of Encounter: 21°43'N/105°29'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/1715H

BLUE Flight was part of a 48 aircraft strike force assigned to strike JCS target, 19.00, a railroad yard, 2-1/2 n mi north of Hanoi. The flight was inbound to target in a modified Fluid-Four formation at the time MIGs were sighted.

2. MISSION ROUTE

Korat, direct to Red Anchor extended, direct to North Station (TACAN Channel 97), direct to the Red River, direct to Thud Ridge, direct to the target. Return route reversed.

3. AIRCRAFT CONFIGURATION

F-105 BLUE 1, 2, 3, 4

- 6 - 750-lb bombs
- 2 - 450-gallon wing tanks
- 1 - QRC-160 ECM pod
- 1 - 20mm cannon
- All aircraft camouflaged

MIG-17

Configuration unknown
Silver color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered to clear. Good visibility at flight level.

BLUE 1, 2, 3, 4

Altitude: 15,000 ft
Heading: 090°
Speed: 540 KTAS
Fuel State: 9,000 lb

Flight Formation:

Modified Fluid-Four with the element on the left wingman 1500 ft out and slightly back.

5. INITIAL DETECTION

MIG warnings had been received by the flight from BIG EYE while inbound to the target.

BLUE Flight, on a heading of 090° at the north end of Thud Ridge, sighted a flight of four MIG-17s at 5 o'clock, approximately 8 n mi south. BLUE Flight turned on a heading of 140° down Thud Ridge and when the MIGs were line abreast on a reciprocal heading they made a right turn into the flight. The MIGs were low at approximately 13,000 ft altitude, 3 to 4 n mi out.

6. ACTION INITIATED

BLUE Flight continued on to the target.

7. SITUATION DEVELOPMENT

BLUE Flight continued on to the target and the MIGs broke off to the left without an engagement. As BLUE Flight was going down Thud Ridge, they sighted another flight of four MIGs at 9 o'clock, 9-10 n mi out. Again no attempt was made to engage by either side. BLUE Flight continued on to attack the target. As BLUE Flight was coming off of the target, a single MIG-17 was spotted at 7-8 o'clock low, 3 n mi out. No attempt was made to engage. BLUE Flight egressed the area.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	3100	1000	55	Pilot background considerable TAC experience in F-84G and F, F-101A/C and F-105. He did not attend a CCTS and had limited air-to-air experience.
BLUE 2 & 3	Not interviewed			
BLUE 4	2500	150	20	

Comments on this Encounter

BLUE 1: The F-105 mission is to deliver bombs on the target and not to engage MIGs. For this mission, the F-105 is adequate in that it is a good weapons delivery aircraft and it can outrun any of the present aircraft in use in North Vietnam. The acceleration and turning capability of the F-105 limits its use as a fighter. Fuel is always a problem. You are either too heavy with fuel to be maneuverable or too short on fuel at fighting weight to make it back home safely. There are too many switches involved going from ground to air attack mode and the pilot has to look in the cockpit to make the changes.

BLUE 4: The switchology problem and the cockpit visibility problem in the F-105 are not good for day fighters using guns.

11. DATA SOURCES

Project Interviews: BLUE 1 and BLUE 4 - 15 Feb 1967.

Messages, Reports:

7AF OPREP-4 DOCO 29774 041526Z Dec 1966
7AF DAI DIO 30926 042250Z Dec 1966

12. NARRATIVE DESCRIPTION

BLUE Flight, on a heading of 090° (15,000 ft AGL, 540 KTAS) at the north end of Thud Ridge, sighted a flight of four MIG-17s at 5 o'clock, approximately 8 n mi south. BLUE Flight turned down Thud Ridge on a heading of approximately 140° and started a descent because of clouds ahead. The MIGs made a right turn into the flight when they passed abreast of BLUE Flight on a reciprocal heading; however, BLUE Flight continued on to the target and the MIGs broke off to the left on a heading of 320°. The MIGs were low at approximately 13,000 ft AGL, 3 to 4 n mi out.

As BLUE Flight continued inbound to the target on a heading of 130°-140° down Thud Ridge, they sighted another flight of MIG-17s at 9 o'clock, 10 to 13,000 ft, passing 6 to 10 n mi to their left on a 320° reciprocal heading. Neither flight deviated from their course to attempt an engagement.

As BLUE Flight came off of the target heading 320° at 8 to 11,000 ft AGL, 550 to 600 KCAS, they sighted a single MIG-17 at 7-8 o'clock, slightly low, range 3 n mi, on a heading of 350°. BLUE Flight speedily out-distanced the MIG and contact was lost. BLUE Flight also sighted a flight of two MIG-21s at this time that were heading 280° preparing to land at Phuc Yen airfield.

At 1734H, when BLUE Flight was on an egress heading of 210° at 30,000 ft AGL (coordinates 21°10'N/104°15'E), they sighted an unidentified flight of four aircraft, assumed to be MIGs, who took up a position some distance behind the flight at 8 o'clock, altitude 37,000 ft AGL. This flight made a 180° departure to the left at 20°00'N/103°30'E at 1754H without any further action.

SECRET

Event II-89

Aircraft Involved: Four F-105s vs two MIG-21s

Result: Sighting only

Vicinity of Encounter: 21°57'N/105°18'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 December 1966/1713H

BLUE Flight (four F-105s) was on a strike mission against JCS 19, a railroad yard 2-1/2 n mi north of Hanoi. BLUE Flight sighted two MIG-21s 40 to 50 miles northwest of the target.

11. DATA SOURCES

Messages, Reports:

7AF, 041404Z, December 66, DOCO 29767

12. NARRATIVE DESCRIPTION

BLUE Flight sighted two MIG-21s at 21°87'N/105°18'E at a range of approximately 5000 ft heading northwest. No additional information is available.

EDITOR'S NOTE: The route of flight for other strike aircraft against JCS 19 indicates this should be 21°57'N or 21°47'N.

SECRET

SECRET

Event 11-90

Aircraft Involved: Four F-105Ds vs two MIG-21s

Results: No damage

Vicinity of Encounter: 21°25'N/105°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 December 1966/1012H

Four F-105s (BLUE Flight) returning from weather reconnaissance on JCS 19.00. GREEN Flight (Ref Event II-91), IRON HAND support, was approximately 9 mi NE flying generally the same heading and observed MIGs near BLUE Flight. There was no MIGCAP on this mission.

2. MISSION ROUTE

Aircraft were from TAKHLI

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: The weather was pretty good in the area of the encounter but was poor in the target area as the strike had been called off.

Altitude: 2500 AGL
Heading: 328°
Speed: 450 mi
Fuel State: Unknown
Flight Formation: Unknown

5. INITIAL DETECTION

BLUE 4 Observed two MIG-21s at 7 o'clock, one - two miles behind flight.

6. ACTION INITIATED

Engaged afterburner BLUE 1 and 2 broke right. The element broke left.

7. SITUATION DEVELOPMENT

MIGs broke off to a northerly heading proceeding over the ridge toward GREEN flight.

11. DATA SOURCES

Project Interviews: None

Message Reports:

DAI-005 052317Z Dec 66, from 7AF
DIO 30934
7AF 051411Z Dec 66, OPREP3 DOCO 29838

12. NARRATIVE DESCRIPTION

BLUE Flight was egressing from a weather reconnaissance for JCS target 19.00, and were heading 328° at 2500 AGL in the vicinity of 21°25'N/105°35'E. BLUE 4 observed two MIG-21 aircraft at the 7 o'clock position approximately one to two miles behind the flight. The MIGs were in tactical formation. BLUE Flight selected afterburner, BLUE 1 and BLUE 2 broke right, number 3 and 4 broke left. BLUE Flight reached speed of 550 kts and observed the MIGs turn to a northerly heading proceeding over the ridge to GREEN Flight (Event II-91). No ordnance was fired by either BLUE Flight or the MIGs. Blue Flight rejoined and proceeded to Yen Bay.

SECRET

Aircraft Involved: Four F-105s vs 4 MIG 21s
Results: No damage
Vicinity of Encounter: 21°34'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 December 1967/1015H

Four F-105s (GREEN Flight)(F-105F, 3DS) IRON HAND in route package 6A Strike Flights had aborted due to weather and all aircraft were egressing target area. They were supporting BLUE Flight (weather reconnaissance see event II-90) who was paralleling their flight path on the southwest side of Thud Ridge. All aircraft flying approximately 315°. There were no MIGCAP aircraft on this mission.

2. MISSION ROUTE

TAKHLI had departed JCS 51.10 and were egressing on a northwest heading from JCS 51.10

3. AIRCRAFT CONFIGURATION

F-105F BLUE 1

- 2 - 450 gal tanks
- 4 - CBU 24
- 2 - AGM 45A (SHRIKES)

F-105D, BLUE 2, 3, 4

- 2 - 450 gal tanks
- 6 - 500 lb bombs (MK-82)

All aircraft doppler and IFF on, all other avionics passive, camouflage paint.

F-105D GREEN 1, 2, 3, 4

not given

MIG-21 MIG 1, 2, 3, 4

not given - but at least one had AAM missiles.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Bad in target area, good in vicinity of encounter.

	GREEN			
	1	2	3	4
<u>Altitude:</u>	----	5000 ft	----	----
<u>Heading:</u>	----	317 ft	----	----
<u>Speed:</u>	----	500 n m	----	----
<u>Fuel State:</u>	----	not given	----	----
<u>Flight Formation:</u>	----	not given	----	----

5. INITIAL DETECTION

GREEN Flight was level at 4500 ft flying 317° when number 4 called a MIG had fired a missile at number 3. Prior to this, GREEN Flight had seen MIGs in the vicinity of BLUE Flight and were watching them for a possible chance to get a pass on them.

6. ACTION INITIATED

Jettisoned tanks, selected afterburner and accelerated rapidly to over 600 kt.

7. SITUATION DEVELOPMENT

MIGs were not observed after GREEN Flight accelerated.

8. ORDNANCE

(No. fired/No. hits)

Soviet AAM

GREEN Flight - none
MIG 1 or 2

1/0 missed and ran into the ground

10. AIRCREW COMMENTS

Experience

not given

Comments on this Encounter

GREEN 1 does not think the MIGs were the same ones who were following BLUE Flight, but two different ones due to the timing. Thinks MIG must have fired from above and missile had picked up ground clutter. When they looked back MIGs were fairly close and above GREEN Flight. Not enough time had elapsed from the time the MIGs were last seen on the other side of the ridge for them to cross over and fire a missile.

Comments on Overall Experience

There were MIG days and SAM days.

11. DATA SOURCES

Project Interviews: GREEN 1 (Lead) 8 Feb 67

Messages, Reports:

DAI-005	052317Z Dec 66, from 7AF, DIO 30934
OPREP-3	050719Z Dec 66, from 7AF, DOCO 29821
OPREP-3	050527Z Dec 66, from 7AF, DOC 29812

12. NARRATIVE DESCRIPTION

GREEN Flight, during their IRON HAND mission had observed MIG-21 aircraft near BLUE Flight (Event II-90) who was on the opposite side of Thud Ridge from GREEN. Two MIG-21s were seen on the opposite side and 2 MIG-21s were seen on the same side as GREEN. GREEN Flight was able to intermittently keep track of the MIGs. BLUE Flight's radio transmissions were also monitored by GREEN Flight. GREEN Flight saw MIGs cross Thud Ridge but the MIGs were far behind the flight. GREEN Flight then lost contact with the MIGs.

In a very short period of time GREEN 4 called that a MIG had fired a possible AA-2 missile at GREEN 3. GREEN 4 had seen the missile go by and hit the ground. He then detected 2 MIG-21s who were in firing position at 6 to 7,000 ft altitude, at GREEN 4's 6 o'clock high, and close range.

GREEN Flight jettisoned their 450 gallon tanks and accelerated to 650 kt at low altitude. The MIGs were lost from sight during the acceleration and not seen again.

SECRET

Event II-92

Aircraft Involved: Three F-105Ds vs one MIG-17
Results: No damage
Vicinity of Encounter: 21°13'N/105°51'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 December 1966/1530H

Three F-105s (BLUE Flight) on a strike flight to JCS 19, turning over JCS 51.10, because of weather at JCS 19. One F-105 (BLUE 4) aborted on the tanker and returned to base, leaving three aircraft.

2. MISSION ROUTE

Not given, but BLUE Flight was from Takhlī.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3

Undetermined number of CBU 24s; QRC-160 pod

MIG-17

Silver color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Solid undercast, undetermined level.

BLUE 1, 2, 3

Altitude: 6-7,000 ft
Heading: 340°
Speed: 450 kt
Fuel State: unknown

Flight Formation:

POD formation, in relation to BLUE 1. BLUE 3, 1500-2000ft line abreast BLUE 2, 500-1000 ft out and almost line abreast. BLUE 3 was on the left of BLUE 1, BLUE 2 on the right.

5. INITIAL DETECTION

In a left turn, BLUE 3 observed one MIG at about 4 o'clock, very high, coming out of the north, and called this to the flight.

6. ACTION INITIATED

BLUE Flight increased the rate of turn to the left, rolled out on a heading of 270°-300°, jettisoned the external tanks, selected afterburner and accelerated.

7. SITUATION DEVELOPMENT

As BLUE Flight accelerated to approximately 600 kts the MIG started to fall behind and was not seen again.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

BLUE 2 lost UHF radio during the flight.

BLUE 4 aborted on the tanker for unknown reasons.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 2	- -	Not given	- - -	
BLUE 3	-	Not given	34	Flew F-84 for 6 years; flew F-101 in TAC & ADC; came direct to SEA from F-105 school.

Comments on this Encounter

None

Comments from Overall Experience

BLUE 2 - F-105s need better visibility to the rear, something more like the F-86. The F-105 needs a quick way to go from bombing mode to an air-to-air mode, like utilizing the

SECRET

SECRET

Event II-92

nose gear steering button to eliminate the bomb function of the gun sight to bring it back to an air-to-air sight.

11. DATA SOURCES

Project Interviews:

BLUE 2 - 16 Mar 67

BLUE 3 - 16 Mar 67

Messages, Reports:

OPREP-3, 051411Z Dec 66, from 7AF, DOCO Z9838

DAI-005, 052317Z Dec 66, from 7AF, DIO 30934

12. NARRATIVE DESCRIPTION

BLUE Flight who had been fragged on Target JCS 19, were in a left turn at 6-7,000 ft, 450 kts after expending CBU-24s. They were turning back, because of bad weather on the target area. As they passed almost over JCS Target 51.10 turning through about 340°, BLUE 3 observed a single MIG-17 at 4 o'clock high about 2 to 3 miles away. BLUE Flight selected afterburner, broke to the left and jettisoned their 450 gal tanks but retained their remaining CBU-24. They rolled out on a heading of 270°-310° and accelerated to 600 kts. The MIG now at 6 o'clock and two miles in range was unable to close on BLUE Flight as they continued northwest to drop the ordnance on a target of opportunity. The MIG-17 although lined up on a firing pass fell behind and was not seen again.

BLUE 2 had radio failure and did not hear the MIG call; however, he saw the tanks leave BLUE 1 and he did likewise. BLUE 2 then looked over his shoulder to the right and observed a single MIG-17, starting down from two miles out and making a pass on the flight.

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Event II-93

Aircraft Involved: Two F-105Fs, two F-105Ds vs.
four MIG-21s

Result: No damage

Vicinity of Encounter: 21°25'N/105°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 December 1966/1630H

Four F-105s on IRON HAND mission in Route Package VI-A.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: unknown

BLUE 1, 2, 3, 4

Altitude: 7,000 ft

Heading: 110°

Speed: not given

Fuel State: not given

Flight Formation

not given

5. INITIAL DETECTION

Four MIG-21s observed in BLUE Flight's 2 o'clock position.

6. ACTION INITIATED

BLUE Flight selected afterburner.

7. SITUATION DEVELOPMENT

BLUE Flight out-accelerated the MIGs.

8. ORDNANCE

none expended

11. DATA SOURCES

Project Interviews: BLUE 3, 16 Mar 67

Messages, Reports:

7AF DIA-005 052317Z Dec 66 DIO 30934

7AF 0514452 Dec 66 DOCO 29843

12. NARRATIVE DESCRIPTION

At approximately 1630 Local BLUE Flight, two F-105F and two F-105D aircraft on an IRON HAND mission, observed a flight of four MIG-21 aircraft. BLUE Flight was flying at 7,000 ft, heading 110°. The MIGs were level at the same altitude, heading 290° and were seen at BLUE Flight's 2 o'clock position commencing a turn to attack from about 5,000 ft out. BLUE Flight selected afterburner and outran the MIGs.

SECRET

SECRET

Event II-94

Aircraft Involved: One F-105F, three F-105Ds vs
two MIG-17s

Result: One F-105D lost.

Vicinity of Encounter: 21°55'N/105°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 December 1966/1652H

One F-105F and three F-105Ds on IRON HAND support in route package VI A. BLUE Flight was supporting four strike flights. Two EC-121s were orbiting in the vicinity of 20°10'N and 20°103'. EB-66s were in the vicinity of 22°05'N/105°10'E and 22°15'N/104°40'E.

2. MISSION ROUTE

Departed Korat Air Base, Thailand, direct Green Anghor (18°11'N/101°18'E) refueling, direct 21°34'N/105°00'E, direct vicinity of 21°55'N/105°20'E, flight encountered MIG, returned to base generally the reverse route. Using Orange Anchor (18°10'N/102°10'E) Post Strike Refuel.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2

Not given

F-105D BLUE 4

2 - 450 gal, external tanks
2 - CBU-24s

F-105D BLUE 3

Ordnance not given.

Doppler and TACAN on, radar off, IFF standby, camouflage paint on all aircraft.

MIG-17 MIG 1, 2

Drop tanks on.

Paint not given.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear and 10 miles visibility.

BLUE 1, 2, 3, 4

Altitude: 10,000 ft
Heading: 090°
Speed: 450 KTS
Fuel State: Not given

Flight Formation: BLUE 2 on left; BLUE 3 and 4 on right.



5. INITIAL DETECTION

Received MIG warnings earlier but not for this area. BLUE Flight was turning right when BLUE 3 called MIGs at BLUE 4's 6 o'clock. BLUE 3's transmission was blocked by BLUE 4 saying he was hit approximately 1651 local time.

6. ACTION INITIATED

BLUE 1 and 2 turned 180° jettisoning stores and egressed the area. BLUE 3 and 4 turned right.

7. SITUATION DEVELOPMENT

The MIGs overshot the formation and started a climbing left turn. BLUE 3 maneuvered to their 6 o'clock position but BLUE 3's gun would not fire. BLUE 4 was on fire and crashed a short time later. BLUE 3 departed the area after he saw BLUE 4 hit the ground. The MIGs pursued BLUE 3 but could not catch him.

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8. ORDNANCE

	(No. Fired/No. Hits)		Remarks
	Cannon		
BLUE 1, 2, 3, 4	0/0		B-3 cannon would not fire.
MIG 1	1/1		Shot part of B-4's tail off causing aircraft to catch fire and crash.
MIG	1/0		Fired at B-3 but missed.

9. EQUIPMENT PROBLEMS:

BLUE 3's M-61 cannon would not fire. Post flight check found gun control box to be inoperative providing no power to the gun.

10. AIRCREW COMMENTS

Experience

	Total Hours	F-105 Hours	Combat Missions	Remarks
BLUE 1, 2, 4	Not Interviewed			
BLUE 3	1300	900	50	Gunnery school at Luke AFB in F-100S. F-105s in Europe - did some air-to-air gunnery in F-105.

Comments on this Encounter

The first time BLUE 3 has had a gun that wouldn't fire. BLUE 3 would rather use the electrical caged sight than try to get a radar lock-on.

Comments from Overall Experience

It is not hard to fire the AIM-9 inadvertently during a bomb run because of the switchology in the F-105.

Poor turning rate and visibility of F-105.

MIG pilots not very well trained. They should shoot down more aircraft but they don't seem to take advantage of the situation. They don't seem very aggressive.

11. DATA SOURCES

Project Interviews: BLUE 3 (17 Feb 67)

Messages, Reports:

DAI-005 052317Z Dec 66, from 7AF
DIO 30934

OPREP-3 052310Z Dec 66, from 7AF
DOCO 29868

12. NARRATIVE DESCRIPTION

BLUE Flight was on an IRON HAND mission in Route Package VI A. They were making a right hand turn, heading about east. The Flight received a MIG warning at 1651H (about one minute prior to the encounter) but the MIGs were not identified with the area of BLUE Flight.

At 1652H two MIG-17s attacked from the direction of the sun, high and at BLUE Flight's 6 o'clock. The MIGs were not observed until they were close to BLUE Flight. BLUE 3 was looking back to check on BLUE 4, who was 500 to 600 feet behind and sliding around the turn, when he (BLUE 3) saw two MIG-17s, one of which was firing at BLUE 4. The closest MIG when seen, was 1000-2000 feet away with the second MIG about 1000 feet behind the first in trail. BLUE 3 called for BLUE 4 to break but his transmission was blocked by BLUE 4's communication that he was hit. BLUE 4 while hit, continued a right turn and headed SW toward the Red River.

BLUE 1 and 2 jettisoned their external stores and ordnance, and broke right and down in afterburner. After completing a 180° turn, egressed the area. BLUE 1 and 2 did not see the MIGs.

BLUE 3 saw BLUE 4 take some cannon hits. BLUE 4 started to shed a few pieces, the drag chute came out and part of his tail came off.

At this time both MIGs overshot BLUE 3 and 4 and one went into a climbing left turn in front of BLUE 3, 500 to 1000 feet away. BLUE 3 was set up for "missiles-air" sight-mode which gave fixed range computation. As the MIG passed in front BLUE 3 tracked the MIG and squeezed the trigger several times but the gun did not fire, due to an inoperative gun control box. [The practice of clearing gun after take off had been discontinued due to malfunctions after the short clearing burst]. At firing attempt the MIG was at 12 o'clock and BLUE 4 was at the MIG's 8 o'clock and both were nose up.

SECRET

Event II-94

BLUE 3 continued his right turn and jettisoned stores. BLUE 3 sighted BLUE 4, who was burning from the side, and heard BLUE 4 make several calls that he had control of the airplane but was losing power. BLUE 4 crashed on a wooded hill in the vicinity of 21°35'N/105°08'E short of the Red River at 1657H. No chute was seen or beeper heard.

While following BLUE 4 out BLUE 3 observed in his mirror a MIG at his 7 to 7:30 position 3-4000 feet away, closing and firing at BLUE 3. BLUE 3 does not know whether this was one of the original two MIGs or not. BLUE 3 then went to afterburner and accelerated away from the MIG, losing him.

BLUE 3 passed BLUE 4 during the acceleration but observed BLUE 4 crash and later joined BLUE 1 and 2 about 30 miles south of the location of BLUE 4's crash.

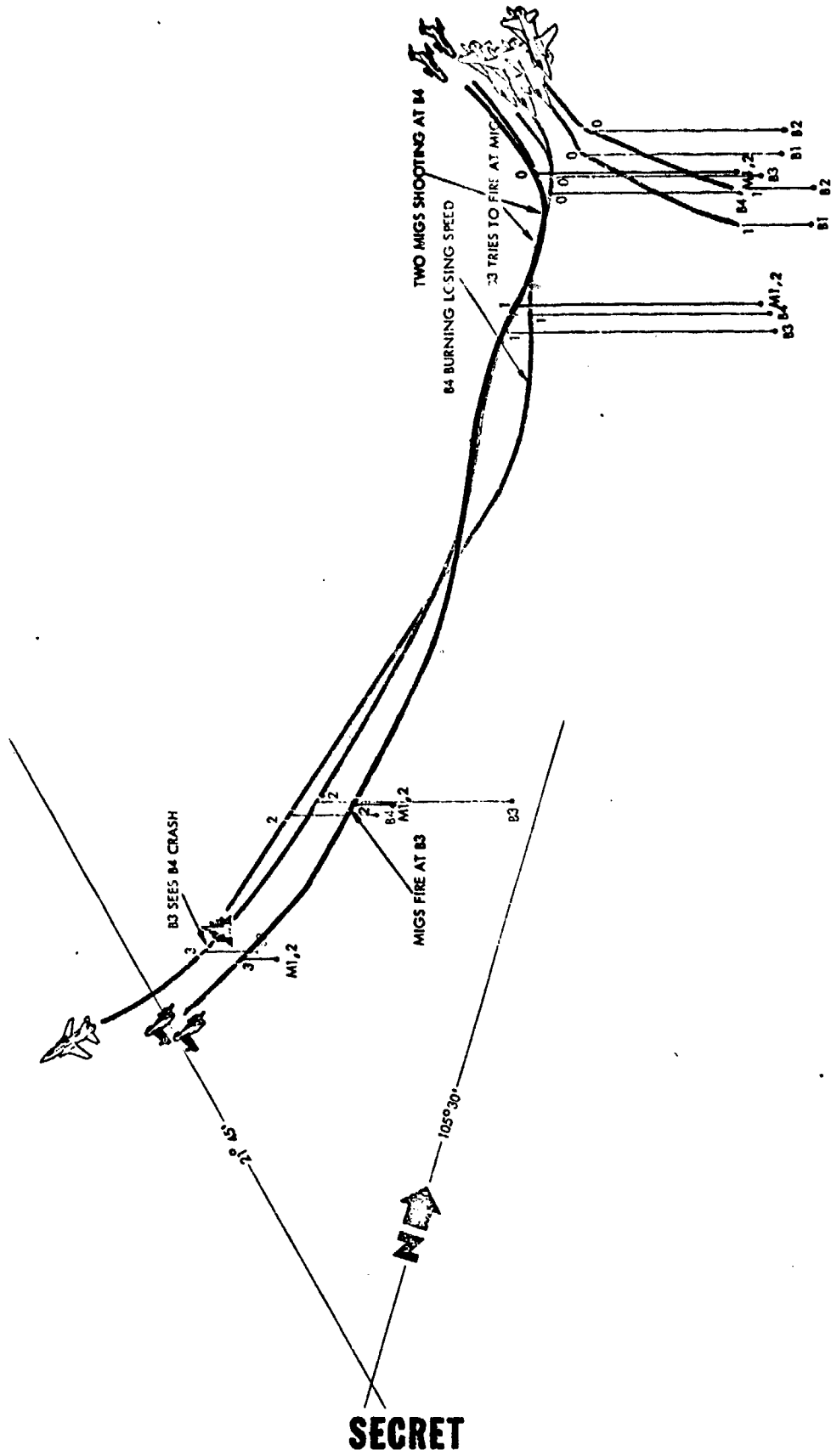
SECRET

RED BARON EVENT 11-94 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	BLUE Flight 10000 ft 450 kts B-4 2x CBU-24 B-1,2,3 no PATA	Turning right, B-2 left wing element on right wing. B-4 is hit by cannon fire from MIG-17.		B-3 called MIG 6 o'clock; trans-mission was blocked by B-4 saying he was hit.	2 MIG-17 2000 ft behind B-4 and shooting; MIG-1 2000 ft back; MIG-2 in trail 1000 ft.	MIGs apparently came in from above and behind. Were not seen until they started shooting. B-4's aircraft was coming apart. Part of the tail came off and the drag chute came out.
T ₁	BLUE Flight jettison stores; B-4 aircraft damage losing power; B-3 2g turn 400 kts.	B1 and 2 turned 180° and departed area; B-4 turned right toward Red River; B-3 maneuvered behind the MIGs, who over-shot in a left climbing turn. B-3 attempted to fire on MIGs.		B-4 made calls that he had control of the aircraft but was losing power.	MIGs overshoot B-3, 4 and climbed to the left with B-3 behind them.	When the MIGs overshoot the formation B-3 was 500 ft behind them. B-3 attempted to fire cannon, but it would not fire. B-1, 2 turned toward the Red River but direction of turn is unknown. They did not see the MIGs.
T ₂	Same B-3 cannon inoperative; B-4 aircraft on fire.	B-3 turned back to join B-4 who was flying toward the Red River.	B-1, 2 egressing the area.	B-4 still had control of aircraft but losing power - thinks he can make the Red River.	MIG 1, 2 turned back toward B-3, 4; they closed the distance and fired cannon at B-3.	B-3 after determining that the cannon would not fire turned back to join B-4. The MIGs turned back behind him on an attempt to fire on B-3 scoring zero hits.
T ₃	Same; B-4 crashed.	B-3 in afterburner accelerating away from MIGs. At 1.1 Mach B-3 returned B-1,2 30 mi. S. B-4 crashed into hit.	B-1,2 egressing.		MIG 1,2 were unable to keep within cannon range area. B-3 went afterburner and broke off.	B-3 passed by B-4 and saw him crash into a wooded hill - did not see a chute or hear a beeper.

SECRET

Event II-94



SECRET

Aircraft Involved: Four F-105s vs eight unidentified aircraft

Result: Sighting only

Vicinity of Encounter: 21°50'N/104°40'E/
21°32'N/104°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 5 December 1966/1655, 1710H

Four F-105s (BLUE Flight) on a strike mission to JCS Target 51.10 in Route Package VI-A. They were 2nd or 3rd in a group of five flights.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 4	2800	175	Not given	F-84G Gunner School in 1955

(No other figured time prior to F-105 RTU. October 1966)

Comments on this Encounter

None

Comments from over-all Experience

If MIGs are observed soon enough it is possible to continue on into the target area at a fast enough speed to keep out of firing range. If the tanks are jettisoned. The MIGs will generally break off the attack if the tanks are jettisoned as the MIG will have trouble closing above 550 kt.

11. DATA SOURCES

Project Interviews: BLUE 4 (16 February 1967)

Messages: 7AF OPREP-3 06C013F NDEC66 DCOCO 29870

12. NARRATIVE DESCRIPTION

BLUE Flight observed two unidentified aircraft while flying at 17000 ft on a heading of 025°, position 21°50'N/104°40'E. Unidentified aircraft were at 14,000 ft on a southeasterly heading and passed in front of BLUE Flight 5 n mi distant, turned south and departed. Time was 1655H. At 1710H BLUE Flight again observed two unidentified aircraft. BLUE Flight was at 21°32'/104°25', 18,000 feet altitude heading 200°. The unidentified aircraft were on a reciprocal heading at 25,000 ft and continued on course.

BLUE Flight, were about halfway down Thud Ridge, heading southeast toward JCS 51.10 at 14,000 feet. BLUE 4 saw and called MIGs to the south at 2 o'clock three to five miles away. The MIGs were heading northwest and two flights of four were seen.

[Note: In his interview, BLUE 4 only recalled the last sighting in the narrative].

Aircraft Involved: Eight F-105s ys at least
eight MIG-21s¹

Results: No losses due to encounter (one F-105
lost, probably due to AAA)

Vicinity of Encounter: 21°33'N/105°33'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 December 1966/1615H

At least four flights of four F-105s each striking JCS Target 19. BLUE Flight (Strike Commander as Lead) and GREEN Flight were the only ones who reported MIG encounters.

2. MISSION ROUTE

Launched from Takhlī, refueled inbound and outbound, approach to target was down Thud Ridge.

3. AIRCRAFT CONFIGURATION

F-105 BLUE 1, 2, 3, 4

- 5 - CBU-24s
- 2 - 450-gal external tanks
- Camouflage paint
- 1 - QRC-160 pod

F-105 GREEN 1, 2, 3, 4

- 6 - 750-lb bombs
- 2 - 450-gal external tanks
- 1 - QRC-160 pod
- Camouflage paint
- Doppler on, radars standby, TACAN and IFF off.

MIG-21

- Missiles (Atoll)
- One MIG gray camouflage paint, all others silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 1500 ft overcast, visibility unknown.

	BLUE				GREEN			
	1	2	3	4	1	2	3	4
<u>Altitude:</u>			12,000 ft				14,000 ft	
<u>Heading:</u>			133°				133°	
<u>Speed:</u>			550 kt				550 kt	
<u>Fuel State:</u>			10,000 lb				10,000 lb	

Flight Formation:

Pod formation with element on the left in BLUE Flight, 2-3,000 ft between elements and about 1,000 ft wingman separation. GREEN Flight about two miles behind and offset to the right.

5. INITIAL DETECTION

Flight was inbound to the target and at least halfway down Thud Ridge. GREEN Flight called out two MIGs at 6 o'clock to BLUE Flight. MIGs were simultaneously in pairs attacking BLUE and GREEN Flights. MIGs were at 2-5 mile range when first sighted.

6. ACTION INITIATED

BLUE Flight initially jettisoned tanks; later broke to right and jettisoned CBUs in the turn, went afterburner. GREEN Flight continued toward target, spotted MIGs on their own tail, jettisoned tanks, then ordnance, went afterburner and broke to right. GREEN 2 delayed slightly in the break as GREEN 3 and 4 broke past him, then he dropped bombs and broke.

7. SITUATION DEVELOPMENT

One MIG fired a missile at GREEN 2 which missed. MIG 1 fired 2 Atoll missiles at BLUE 3 which detonated 1,000 ft behind BLUE 3. BLUE 1 and 2 continued their turn toward MIGs chasing GREEN Flight and the MIGs broke off and went into the overcast. GREEN Flight continued right turn to attack MIGs chasing BLUE 3 and 4, these MIGs broke off into the overcast also.

¹Reports also indicated encounter of 2 MIG-17s by GREEN Flight but this did not specifically appear in the interview data. These could have been the MIGs attended to by G4.

8. ORDNANCE

	(No. fired/No. hits)	
		<u>Soviet AAM</u> <u>(Probably AA-2)</u>
		<u>Remarks</u>
MIG 3	2/0	Detonated 1,000 ft behind BLUE 3 - no damage.
MIG 5	1/0	Fired at GREEN 2, no damage.

9. EQUIPMENT PROBLEMS

BLUE 3 - Radio inoperative, could not be contacted. Receiver may have been working.

10. AIRCREW COMMENTS

Experience

	<u>Total</u> <u>Hours</u>	<u>F-105</u> <u>Hours</u>	<u>Combat</u> <u>Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>	5500	200	30	Flew all fighters from F-47 through F-106 except F-94 - led THUNDERBIRDS for three years. Instructor FWS Nellis AFB. Flew 114 missions and had MIG encounter in Korea (F-80, F-84).
<u>BLUE 2</u>	2750	750	--	Fighter Weapons School, F-100, F-105.
<u>BLUE 4</u>	--	--	35	F-84s TAC 6 years. F-101 in TAC, ADC. F-105 since March 1966.
<u>GREEN 2</u>	--	--	80	

Comments on This Encounter

BLUE 1 - MIG pilots seemed very well organized, coordinating their maneuvers exceptionally well. Any time they lost the advantage, they broke off to reattack under more advantageous circumstances. MIG 6 had the nicest paint job he had ever seen on a MIG-21 - three shades of Navy grey, scalloped in lines from nose to tail, extremely difficult to pick out against a cloud background. This MIG was by himself and seemed to be directing the rest. Looked like the big super Russian MAG instructor.

BLUE 4 - Believed MIGs were out of range when they fired at BLUE 3. Did not think Atoll missiles detonated close enough to BLUE 3 to cause damage - BLUE 3 probably shot down by ground fire.

Comments from Overall Experience

BLUE 1 - There are too many switch settings to change to go from a bombing mode to an air-to-air mode. Likes the QRC-160, seems to be effective if used properly. Would like to have some capability to shoot an air-to-air missile backwards. The pilots coming in from ATC, SAC and other commands are adapting to the mission very well. The young men right out of flying school seem to pick it up very fast and are the best wingmen. F-105 needs a better snapshot capability, something you don't have to track a long time. The F-106 would be a good airplane for this mission. With modifications you could bomb with it and it will maneuver as well as the MIG-21.

BLUE 2 - Would like to carry the AIM-9. Believes fighters should have two engines. There is no need for a two-pilot fighter. Future fighters need better visibility to the rear than the F-105.

BLUE 4 - F-105 does a very good job as a strike fighter. It does an outstanding job in this type environment. However, it is really not an air-to-air fighter.

GREEN 2 - A big problem is in the switch changes to change sight settings. In other aircraft, when you punch the electrical cage button, you get a caged sight. In the F-105, you have to change two switches to get the sight change plus hit the electrical cage and this cannot be done without distracting your eyes from outside the aircraft. If you could hit a button, get the sight to jump into cage position, hit the button again and have the sight go back to the previous mil setting you wouldn't have to switch your eyes into the cockpit.

The air-to-air radar lock-on warning device in the F-105 is cut off because the other members of the flight have their own radar on, it interferes with your vector, and it's more of a distraction than an aid. I suggest we put in a change that will strobe in the direction of a GCI radar locked onto the flight. Something a little extra to go along with this would be separate little black box in the rear of the aircraft that will detect any radar signals from any gun radar likely to be carried in an aircraft, that will illuminate a separate light or other device on the panel near the canopy line to catch your eye while looking outside the aircraft.

GREEN 4 - The best flying job in the world today is flying MIG-21s out of Phuc Yen. Their advantages on us are that they have turning radius, visibility, and a high-performance airplane that can accelerate real well.

SECRET

Event II-96

The things in the F-105 that limit us are the turning radius, a result of too much wing-loading, and visibility. One advantage of the F-105 is that it has guns that can be used at close range - something the pilot can control in ejecting ordnance from the airplane.

An air-to-air combat is still a turning game - the airplane that turns best has the advantage. In the future we need a big power plant, an airplane that can turn real well and accelerate well and that can carry ordnance all the way from short to several miles range. Also both high and low altitude capabilities at the same time.

11. DATA SOURCES

Project Interviews:

BLUE 1 (Lead - 6 Feb 67
BLUE 2 - 2 Feb 67
BLUE 4 - 16 Mar 67
GREEN 2 - 5 Feb 67
GREEN 4 - 15 Mar 67

Messages, Reports:

7AF 081046Z DOCC 30009 Dec 66
7AF 081345Z DOCC 30018 Dec 66
7AF 082258Z DIO 30961 Dec 66.

12. NARRATIVE DESCRIPTION

BLUE Flight was the lead flight and BLUE 1 the Mission Commander for a strike on JCS Target 19. They were flying down the ridge line at 21°33'N/105°33'E heading 133°, 12,000 ft and about 550 kt in pod formation. GREEN Flight was a few miles behind them going to the same target. GREEN Flight observed four MIG-21s attacking simultaneously in pairs, two MIG-21s on GREEN Flight and two MIG-21s on BLUE Flight. The MIGs were called out and BLUE and GREEN Flights jettisoned the 450-gal tanks in an effort to increase airspeed in order to get to the target. However, BLUE 4 observed the MIGs to be closing from 4 or 5 o'clock. BLUE 1 called for a right turn and then to jettison the ordnance through a hole in the undercast. Somewhere during this turn or about the time they rolled out, the MIGs fired two AAMs at BLUE 3. The firing was observed by GREEN Flight. The missiles detonated about 1,000 ft behind BLUE 3. GREEN Flight called out the firing about the same time BLUE 4 saw a MIG-21 pop out of the undercast behind GREEN Flight. BLUE 4 called out the MIG.

At about this same time GREEN Flight saw two MIGs approaching them and dropped tanks; the MIGs disengaged. GREEN Flight saw other MIGs and lead called for dropping ordnance, afterburners, and a RIGHT break. As GREEN 3 and 4 crossed behind GREEN 2, GREEN 4 told GREEN 2 to hold his bombs to avoid collision. GREEN 2 held momentarily, then picked, then broke. Just as he broke, slightly behind the others, MIG 5 launched a missile at GREEN 2 which missed. BLUE 1 and 2 turned into the MIG who was attacking GREEN Flight. When the MIG saw BLUE 1 and 2 turning into him, he broke off. Meanwhile BLUE 3 and 4 turned to the west. At this time BLUE 3 had UHF transmitter trouble, because no transmissions were heard from him. BLUE 3 broke left and down through a hole in the undercast and jettisoned his MER. BLUE 4 also jettisoned his MER and followed BLUE 3, flying a normal fighting wing. BLUE 4 told BLUE 3 that he was at BLUE 3's 8 o'clock position, because BLUE 3 may have mistaken BLUE 4 to be a MIG. BLUE 3 did not acknowledge the call, but did discontinue the hard left turn and continued normal jinking while heading west, below the overcast. B3 was supersonic. BLUE 4 moved up and flew in his 9 o'clock position maintaining enough lateral separation to clear the 6 o'clock position. BLUE 4 was unable to keep in visual contact with BLUE 3. They were flying into the afternoon sun which was reflecting off the rice paddies. BLUE 4 lost sight of BLUE 3 when they flew into this area of glare. They passed through the glare at supersonic speeds, and BLUE 4 was unable to pick up BLUE 3 again. About this time BLUE 4 heard a beeper. BLUE 4 set up an orbit west of the Red River and alerted rescue. During the egress BLUE 4 observed some 37mm flak but had no indication BLUE 3 had been hit.

After the MIGs disengaged from GREEN Flight, BLUE 1 observed a lone camouflaged MIG-21 dive past BLUE 1 and 2, at a high rate of speed, through the same hole BLUE 3 and 4 had flown. BLUE 1, not being sure where BLUE 3 and 4 were called, "Two F-105s who just went into the hole in the clouds, you have a MIG on your tail - go AB and get out of here". BLUE 1 and 2 followed the MIG. The same MIG then popped back up on top making a 90° left climbing turn. GREEN Flight unloaded and egressed to the northwest. BLUE 1 and 2 turned toward the MIG, who turned 130° and went back into the clouds on a westerly heading. BLUE 1 and 2 egressed the area and joined BLUE 4, and then returned to base.

SECRET

Aircraft Involved: Four F-105s vs one MIG-21

Result: Sighting only

Vicinity of Encounter: 21°35'N/105°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 December 1966/1610H

Brown Flight (4 F-105s) were on an Iron Hand mission scheduled to operate up and down the east side of Thud Ridge. Concurrently there was a strike on JCS-19.00 which encountered numerous MIGs. (See Event II-98).

2. MISSION ROUTE

Korat, Red Anchor, vicinity 21°53'N/104°35'E, vicinity 21°50'N/105°20'E to 21°25'N/105°40'E to 21°03'N/104°43'E, Red Anchor to Base.

3. AIRCRAFT CONFIGURATIONS

<u>F-105F</u>	<u>F-105D</u>	
<u>Brown 1</u>	<u>Brown</u>	
	<u>2</u>	<u>3,4</u>
2 AGM 45	2 AGM 45	6 500 lb bombs
2 CBU-24	2 CBU-24	
2 Wing tanks	2 Wing tanks	2 Wing tanks
No QRC-160 ¹		

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered low clouds becoming overcast in the east. Pilot interview rated the weather as poor.

BLUE FLIGHT

Altitude: 12,000 feet
Heading: 220°
Speed: 525 kts
Fuel State: Unknown

5. 6. 7. 8. See Narrative Description

9. EQUIPMENT PROBLEMS

Brown 2 had 1/ CBU-24 that would not jettison.

10. AIRCREW COMMENTS

Experience

	<u>Tot Hours</u>	<u>F-105 Hours</u>	<u>COMBT Missions</u>	<u>Remarks</u>
Brown	-	-	-	-
Brown	3500	1100	approx. 65	All time in single engine jet

11. DATA SOURCES

Project Interviews:

Brown 3 - 16 February 1967

Messages, Reports, etc.

7AF	1322052	OPREP3	DOC030317	December 1966
7AF	131616Z	OPREP4	DOC030309	December 1966
7AF	132231Z		CIO 30996	December 1966

12. NARRATIVE DESCRIPTION

Brown flight - an Iron Hand flight - was in spread formation making a right turn when a MIG-21 passed through the formation. The MIG came through at a high angle off in a right climbing turn from 4 o'clock toward 10 o'clock at an estimated airspeed of 500 kts. The MIG-21 then made a descending turn back toward the flight. At this point Brown 2 and 4 jettisoned their ordnance (number 2 had a CBU-24 that would not jettison) and Brown flight made a max power right descending turn to heading 330 and out ran the MIGs.

Pilot reported that ECM pod was not carried, DIO message indicated that flight was QRC equipped.

SECRET

Event II-98

Aircraft Involved: 16 F-105Ds vs numerous MIG-21s and MIG-17s

Result: No damage

Vicinity of Encounter: See (1) below

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 13 December 1966/1600-1620H

The flights were a strike force briefed to hit JCS 19.00 (Yen Vien RR Classification yard). There were 5 individual encounters, as listed below:

		<u>Vicinity of Encounter</u>
(Part 1) BLUE Flight	4 F-105Ds vs 2 MIG-21s	20°55'N/105°37'E
(Part 2) GREEN Flight	4 F-105Ds vs 4 MIG-21s & 4 MIG-17s	21°38'N/105°28'E
(Part 3) YELLOW Flight	4 F-105Ds vs 2 MIG-21s & 3 MIG-17s	2055N/105°25E (M-17)
(Part 4) ORANGE Flight	4 F-105Ds vs 2 MIG-21s	21°32'N/105°40'E
(Part 5) BLUE Flight	4 F-105Ds vs 2 MIG-21s	20°55'N/105°37'E

BLUE, GREEN, YELLOW, and ORANGE Flights constituted the force of four strike flights proceeding to the target. They were preceded by PURPLE Flight (4 F-105Ds) which was in a flak suppression role. PURPLE did not see any MIGs, but PURPLE 3 was downed by a SAM prior to the MIG encounters. BROWN Flight was on an IRON HAND mission in the target area (see Event II-97 for details of BROWN's MIG encounter).

2. MISSION ROUTE

Flights departed Korat, Thailand, refueled, proceeded via Channel 97 TACAN and then down east side of Thud Ridge to the target.

3. AIRCRAFT CONFIGURATION

	BLUE 1,2,3,4 YELLOW 1,2,3,4	GREEN 1,2,3,4 ORANGE 1,2,3,4
F-105D	6 2 1 Camouflage paint	750 lb bombs 450 gallon wing tanks QRC-160 ECM pod
MIG-21	Silver color Missile equipped	

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered clouds west of target and over target, overcast east of Hanoi.
Visibility--good.

	<u>Part 1</u>	<u>Part 2</u>	<u>Part 3</u>	<u>Part 4</u>	<u>Part 5</u>
	BLUE 1,2,3,4	GREEN 1,2,3,4	YELLOW 1,2,3,4	ORANGE 1,2,3,4	BLUE 1,2,3,4
<u>Altitude</u> :	14,000 ft	12-16,000 ft	16,000 ft	16,000 ft	16,000 ft
<u>Heading</u> :		138°	135°	135°	260°-270°
<u>Speed</u> :		530 kts	540 kts	540 kts	600 kts
<u>Fuel State</u> :			less than full	est. 10,000 lb	
			internal		

Flight Formation: Flights were in pod formation.

5. INITIAL DETECTION

Part 1: While inbound, BLUE 4 saw 2 MIG-21s pass at 3 o'clock with opposite heading to flight.

Part 2: GREEN flight sighted 4 MIG-21s at 11 o'clock and 4 MIG-17s at 1 o'clock at an approximate range of six n mi with opposite heading to flight.

Part 3: YELLOW 3 sighted MIGs, approximate range of 3 1/2 to 4 n mi heading of 270° approximately co-altitude, quartering on YELLOW Flight. MIGs turned and ended up approximately 6 n mi in trail of flight. After leaving target, YELLOW 3 saw group of probable MIG-17s orbiting below and turning towards Hanoi.

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Part 4: ORANGE Flight sighted 2 MIG-21s on a reciprocal heading about 3-4 n mi offset, they turned 180° and ended up approximately 3 n mi in trail of ORANGE Flight.

Part 5: After pulling off target, BLUE 1 (L) sighted 2 MIG-21s at 5,000 ft heading 90° from his 10 o'clock position at a range estimated to be approximately 3 n mi.

8. ORDNANCE EXPENDED

	AAM	Cannon	Remarks
MIG-1	1/0	1/0	Missed, detonated 300-400 ft behind ORANGE 1 and 3
MIG-2		2/0	Fired 2 bursts, both missed.

No air-to-air ordnance was expended by U.S. flights.

10. AIRCREW COMMENTS

Experience:

	Total hours	F-105 hours	Combat Missions	Remarks
BLUE 1	1150	750	Unknown	All TAC fighter background
BLUE 4	Unknown		63	All TAC fighter background
GREEN 3	3700	130	20	Mostly ADC experience
GREEN 4	1200	160	30	All but F-105 time is KC-135 and student time
YELLOW 3	3700	1500	13	
ORANGE 3	4300	100	15	

Comments on this Encounter:

BLUE (Part 5) was surprised that the MIG-21 would attack because of altitude advantage (approximate 10,000 ft) of F-105.

GREEN amazed at maneuverability of MIG-21.

Comments from Overall Experience:

BLUE 1 felt that aircraft modifications (e.g., SAFETY PACK II, Cameras, Vector Gear, etc.) had compromised aircraft capability by increasing drag.

YELLOW 3 felt that F-105 was an excellent airplane for the job due to its superior airspeed capability and because of its ruggedness.

Switching from air-to-ground to air-to-air mode is too complicated, should be able to do this with a single switch.

QRC-160 switches and indicator lights are in an inconvenient position.

ORANGE 3. The only maneuver for the F-105 against the MIG-21 is to head for the deck in maximum power. The F-105 cannot out-turn or out-climb the MIG-21.

11. DATA SOURCES

Project Interview:

BLUE 1	16 February 1967,	GREEN 3	15 February 1967,
BLUE 4	18 February 1967,	GREEN 4	15 February 1967,
ORANGE 1	15 February 1967,	YELLOW 1	letter,
ORANGE 3	4 February 1967,	YELLOW 3	18 February 1967.

Messages, Reports:

7AF	OPREP-3,	130925Z,	DOCO-30291,	December 1966,	SECRET
7AF	"	131628Z,	DOCO-30307,	"	"
7AF	"	132205Z,	DOCO-30317,	"	"
7AF	OPREP-4,	131616Z,	DOCO-30309,	"	CONFIDENTIAL
7AF	"	131651Z,	DOCO-30310,	"	"
7AF	"	131651Z,	DOCO-30311,	"	"
7AF	Intell.				
	message,	132231Z,	DIO-30996,	"	SECRET/NOFORN
7AF	"	151215Z,	DIO-31005,	"	"

12. NARRATIVE DESCRIPTION

This event represented the second time since 2 December 1966 that there was an integration of SAMs and MIGs in the NVN Air Defense system.¹ Between 1606H and 1624H in approximately an 18x26 n mi rectangular area WSW of Hanoi, the following activity was reported: 6 MIG-21s, 9 MIG-17s, 17 SAMs fired, four AAA reactions, 16 F-105s and 19 Navy aircraft. One F-105 was downed by a SAM (PURPLE 3) and 3 Navy aircraft were hit by SAMs. The F-105s were reported egressing at between 15-16,000 ft, MIGs were reported at 6,000 ft, 9,000 ft, and 18,000 ft.

SAMs were sighted before and during MIG activity by BLUE, GREEN, and YELLOW flights.

BLUE, GREEN, YELLOW and ORANGE Flights were flying in a group formation proceeding to the assigned target (JCS 19.00 Yen Vien Railroad Classification Yard). BLUE Flight was the lead flight followed by GREEN and YELLOW with ORANGE Flight being the trailing flight. YELLOW Flight was to the left of GREEN Flight. In case of MIG attack, ORANGE Flight was to drop ordnance and screen the rear of the strike force.

Part 1: While inbound to the target BLUE Flight spotted two MIGs approximately 10,000 ft below them flying in opposite heading to the flight. They were seen at 3 o'clock and were then observed to turn behind the last flight (ORANGE Flight). The strike force had already jettisoned their tanks prior to going into the target.

Part 2: GREEN Flight was about halfway down Thud Ridge, inbound to the target, when GREEN 4 sighted 4 MIG-21s at 11 o'clock on a reciprocal heading and offset about 6 n mi. GREEN 2 sighted 4 MIG-17s at 1 o'clock very low. Identification was readily made due to the delta wings and silver color of the airplane. The MIG-17s pressed on without attacking anyone. The MIG-21s started on a left turn to attack the trailing flight behind GREEN. GREEN Flight was not engaged by MIGs and struck the target as briefed.

Part 3: YELLOW Flight sighted 2 MIG-21s at 1 o'clock on a westerly heading. At the time, YELLOW Flight was on a heading of a 135°, and approximately 15 miles from the target area. As the MIGs passed YELLOW's 3 o'clock position they started to turn in. YELLOW Flight did not take any evasive action and shortly thereafter YELLOW 4 called out the MIGs approximately six miles in trail. The MIGs were positively identified by their silver color. YELLOW Flight then rolled into the target in almost a split-S maneuver heading almost west. In the pullout from the target, YELLOW 4 had become separated from the rest of the flight, and shortly thereafter, he (YELLOW 4) called out that he had two MIG-21s on him and that he was cleaning off the racks and accelerating out. YELLOW 4 exited to the west at Mach 1.3 at about 5,000 ft and successfully outran the MIGs. Meanwhile the remainder of YELLOW Flight climbed out together at Mach 1.15 also exiting to the west. On the way out they saw numerous SAMs in the area as well as numerous MIG-17s orbiting low, none of which pursued YELLOW Flight. They also saw the MIGs that were chasing YELLOW 4 give up and turn back towards their home base. Number 4 rejoined the flight over Laos.

Part 4: ORANGE Flight was about halfway down Thud Ridge when 2 MIG-21s approached on a reciprocal heading, displaced approximately three miles to the right of the flight. The MIGs executed a right 180° turn to fall in trail approximately three miles behind ORANGE Flight. The MIGs closed rapidly in loose formation and at a range of about a half-mile, one MIG (the one on the right) lined up between ORANGE 1 and 3, and launched an air-to-air missile. At the time, ORANGE Flight was in pod formation with the second element on the left. ORANGE 4 saw the missile being launched and called for a right break. All aircraft in ORANGE Flight jettisoned their tanks and ordnance before and during the break which was down and to the right. ORANGE 4 observed the enemy missile explode approximately 300 to 400 ft behind #3. The second MIG, which was on the left wing of the first one, pressed in on ORANGE 4 and fired his cannon as ORANGE 4 forced him to overshoot. MIG 1 followed up his missile attack by firing his cannon at ORANGE 4. ORANGE 4 in maximum power executed a 180° turn down to the cloud tops. MIG 1 started to follow and then stopped about two-thirds of the way around the 180° break as ORANGE Flight was moving back into defensive formation. At this point ORANGE 3 called out a MIG crossing from left to right in his 6 o'clock position. All members of the flight then lost sight of this MIG. In the meantime, another MIG closed in on ORANGE 4 in his 7 o'clock position, snapped off a burst and then broke away. This MIG was seen by ORANGE 3 before it fired at ORANGE 4; however, it was originally misidentified as a friendly aircraft. When ORANGE 3 realized that it was a MIG it was too late to call a break. Two MIGs continued to shadow the flight until egress from Route Package VI.

Part 5: After pulling off the target BLUE Flight saw 2 MIG-21s on a reciprocal heading below them at 5,000 ft. They were sighted in BLUE's 10 o'clock position at a range of about 3 miles. As the MIGs passed abeam of BLUE Flight they attempted to chandelie up to them. However, they were too far away and too low to be able to complete the attack so the MIGs broke off and headed back towards Hanoi. BLUE Flight recovered without engaging any MIG aircraft.

¹Source: DIO 31005, December 1966 (see Item 11) SECRET/NOFORN.

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Event II-99

Aircraft Involved: Four F-105D vs at least six
MIG-21s

Result: One F-105D lost

Vicinity of Encounter: 21°05'N/105°55'E.

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 December 1966/1625H

Four F-105D (BLUE Flight) aircraft were on a strike mission. The flight was part of a total force attacking JCS 19.00 (21°05'25"N/105°55'15"E). Flights originating from Takhli were to strike the target first followed by those from Korat. The IRON HAND Flights (Events II-103 and II-104) preceded the strike forces. The Takhli forces (in order of striking the target) were composed of the aircraft in Events II-105 (TOT 0816Z), II-100 (TOT 0817Z), II-99 (TOT 0819Z) and II-102. The Korat forces were composed of the aircraft in Event II-106 and Event II-101, which was the last strike flight on the target. Also in the area were EC-121 aircraft waiting in the vicinity of 20/107 and 20/103 and EB-66B's and C's orbiting in the vicinity of 22°10'N/105°20'E and 21°15'N/104°25'E. The USN was also conducting studies in the same general area.

2. MISSION ROUTE

From Takhli AB direct to Green Anchor for refueling direct to 21°55'N/104°38'E, direct to 21°54'N/105°12'E, direct to 21°38'N/105°29'E direct to 21°26'N/105°42'E direct to 21°16'N/105°56'E direct to the target (JCS 19.00) and egress to 20°57'N/105°27'E then direct to 20°46'N/105°05'E direct to Green Anchor for post strike refuel. BLUE 1 and 2 recovered at Takhli but due to fuel BLUE 4 recovered at UDORN.

3. AIRCRAFT CONFIGURATION

F-105D BLUE 1,2,4

6 750 lb bombs
2 450 gal. tanks
1 QRC-160 POD

F-105D BLUE 3

6 500 lb bombs
2 450 gal. tanks
1 QRC-160 POD

MIG-21 MIG 1,2,3,4,5,6

All Aircraft Silver
Missiles carried by at least one MIG.

No other information available. Those MIGs identified as having the large radome (FISHBED D) are so specified in the narrative.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Low broken to overcast deck, bases 3-4,000 feet, tops 8,000-10,000 feet ~ 5 miles visibility with haze.

BLUE (1,2,3,4) on ingress to target

<u>Altitude:</u>	2,000 feet AGL
<u>Heading:</u>	135°
<u>Speed:</u>	550 kts
<u>Fuel State:</u>	10,000 lbs
<u>Formation:</u>	Pod Formation

5. INITIAL DETECTION

After crossing the RED RIVER, while on their ingress to the target, BLUE Flight continuously observed MIG-21 aircraft in the area. However, the first MIGs to threaten the flight were seen by BLUE 2 prior to pop-up. Two MIG-21s were seen at 2 o'clock, co-altitude, 3,000-4,000 feet range. BLUE Flight was at the MIGs 2 o'clock, as the MIGs, in a hard turn, attempted to turn in behind the flight.

6. ACTION INITIATED

BLUE Flight continued on the mission as the two MIGs overshot.

7. SITUATION DEVELOPMENT

BLUE Flight made their bomb run and popped up and during the dive to the target two more MIG-21s passed through the flight, but no firing was observed. After climbing through the clouds, BLUE 2 saw a single MIG-21 at 9 o'clock, then two more, silver MIG-21s

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at 6 o'clock to the flight. The flight lost the two MIGs at 6 o'clock by diving below the clouds, but flak forced them back on top.

Shortly after coming back on top, a MIG-21 was seen at BLUE 4's 9 o'clock, which he escaped by diving through the clouds. On BLUE 4's return, BLUE 4 called 2 MIG-21s at 6 o'clock. These last two MIG-21s were FISHBED D's and one attacked BLUE 3 and shot him down with a missile, and he broke off. The other attacked BLUE 1 and was subsequently attacked by BLUE 2 who fired at the MIG-21 but missed. BLUE 2 saw BLUE 3 crash and then joined the rest of the flight for egress.

8. ORDNANCE

(No. Fired/No. Hits)

	<u>Cannon</u>	<u>AA Missile</u>	
BLUE 2	1/0	-----	350 rounds - no sight.
MIG		1/1	Hit and destroyed BLUE 3

None of the other members of BLUE Flight expended any air-to-air ordnance. None of the other MIG-21s were observed firing.

10. AIRCREW COMMENTS

Comments on this Encounter

Never attack a MIG, unless 3 to 9 o'clock low - so you can make one pass and escape.

11. DATA SOURCES

Project Interviews: BLUE 2 (5 Feb 1967)

Messages, Reports:

7AF DOCO 30384 OPREP-3 141532Z Dec 66
7AF DOCO 151 211905Z Dec 66
7AF DOCO 30371 OPREP-4 141312Z Dec 66
7AF DOCO 31359 OPREP-3 140952Z Dec 66
7AF DOCO 30354 OPREP-3 140911Z Dec 66
Source Unknown 150557Z Dec 66
Tape of communications made during the mission
AF Combat Loss Report XOX562-2567

12. NARRATIVE

BLUE Flight was on a strike mission as part of a larger force attacking JCS 19.00. As soon as the flight crossed the Red River, above the clouds, at about 14,000 feet altitude, numerous SAMs were fired at the flight, in barrage-type volleys, but they did not track very accurately. Just after crossing the Red River, BLUE Flight heard calls of MIGs from the flak suppression flight - (Event II-105) and expecting an engagement they jettisoned tanks and pylons retaining only the MER (loaded with 6 bombs) and the QRC-160 POD. The tanks, when jettisoned, had 500 to 600 pounds of fuel in each.

The flight proceeded down the southeast side of Thud Ridge and descended through the cloud layer. BLUE Flight heard the flight of Event II-100 transmit that they were being jumped by MIGs. After breaking through the cloud layer, and descending to 2,000-3,000 ft. AGL and 550 kts, the flight passed by Phuc Yen Airfield and observed 30-40 MIG-17s, MIG-19s and MIG-21s in revetments. Numerous MIG-21s were seen flying around in the area and two were seen just taking off. As the target came in sight, BLUE Flight started to receive heavy flak.

At this point, two MIG-21s (MIG 1,2) tried to make a pass at the flight. BLUE 2 saw and called the MIGs who were 3,000-4,000 feet away, at 2 o'clock co-altitude. The MIGs were silver and immediately recognized. BLUE Flight was at the MIGs' 2 o'clock as the MIGs attempted a hard turn to intercept the flight. BLUE 2 called the MIGs as passing from 3 o'clock to 4 o'clock, and specifically warned BLUE 4 who was carrying the camera pod and was having trouble maintaining position with the rest of BLUE Flight. The MIGs were in a position that enhanced their attack on BLUE 4 but due to the speed of BLUE Flight, the MIGs could not attain a firing position, and they were lost from view.

As the flight proceeded toward the target, they heard the flight of Event II-102 call that they had been jumped by MIGs. BLUE Flight proceeded through the pop-up and as they rolled in, on the bomb run two more MIG-21s (MIG 3,4) passed through the flight disregarding their own flak, but were not observed to fire at BLUE Flight. BLUE Flight was under heavy ground fire at the same time as the MIGs passed through.

After dropping on the target, BLUE Flight headed out in a southwesterly direction toward the hills and the Black River at 600 kts in afterburner. At this time, BLUE 2 saw a single MIG-21 (MIG-5) at 9 o'clock 2 miles range, co-altitude. BLUE 2 was at the MIG's 10 o'clock, as the MIG approached straight and level at high speed. At this time BLUE 1 was out in front, BLUE 2 and 3 were line abreast 2,000 feet above BLUE 1. Although BLUE 2 called the MIG, the call was delayed due to other radio traffic. The MIG was lost from view.

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BLUE Flight came out of afterburner and climbed on top of the clouds. BLUE 1, 2, and 3 were approximately line abreast extending about 4,000 feet across the front. BLUE 4 was back and to the right about 1 mile and lower. BLUE 3 saw 2 MIG-21s (MIG 6,7) at 3 o'clock with other MIGs and a SAM to the South. BLUE 3 called the MIGs. BLUE 2 also saw the two MIG-21s as well as the others in the area. Due to his position, BLUE 2 observed the two MIGs to be at 6 o'clock high and diving into position behind about 8,000 feet away. The MIGs were silver.

BLUE 1 called "burner" and the flight descended into the clouds to evade the MIGs. On descending through the clouds the flight began to receive intense flak. After jinking for several seconds (no more than 20) and reaching the mountains Southwest of Hanoi, the flight again climbed on top of the clouds and although no MIGs were immediately seen, the flight had some SAMs fired at them.

A short time later (estimated 40 seconds) another MIG-21 (MIG-8) was seen by BLUE 2. This MIG was close to BLUE 4. The MIG was at BLUE 4's 9 o'clock, about 1,500 to 2,000 feet away from BLUE 4 and turning into BLUE 4 from a line abreast position. BLUE 2 saw the MIG-21 outlined against a cloud, as both the MIG and BLUE 4 acknowledged and broke down into the clouds with the MIG after him. Just before BLUE 4 dived into the clouds, he called "BLUE 4 you have two MIGs at your 6 o'clock." [What was meant to be transmitted was "BLUE 1 and 2 there are MIGs at your 6 o'clock."] The two MIGs approaching the flight were unseen by BLUE 1, 2, and 3. A short time later, BLUE 4 popped back through the clouds without the MIG.

The flight began to climb, and a target report was given, BLUE 3 called BLUE 4 to "pull it up" and then BLUE 1 called for a shift in frequency from channel 2 to channel 1 to give the code words that the target had been hit. At this point the SAM activity (as indicated by vector strobes) had subsided and little flak was present.

The flight at this time was spread out with BLUE 1 in the lead and BLUE 2 on the left. BLUE 3 was about even with BLUE 2 to the right of BLUE 1 and out a bit farther than BLUE 2. BLUE 4 was very far out to the right and behind the flight. As they climbed through¹ 10,000-11,000 feet and at a speed in the category of 400 KIAS, heading between 230° to 260° degrees in the vicinity of 20°47'N/105°08'E, time 1625H, BLUE 2 in looking back to clear the other flight members, saw 2 MIG-21s (MIG 9, 10)² (FISHBED D) BLUE 2's wing and another MIG-21 off to the right of closest MIG-21. One MIG-21 was in the 6 o'clock position of BLUE 1 and the other was in the 6 o'clock position of BLUE 3. The MIG on BLUE 1 appeared to be inside missile range.

As BLUE 2 noticed the MIG-21D behind BLUE 3, that MIG launched an air-to-air missile (BLUE 2 saw the missile leave the MIG) which hit BLUE 3, blowing the aft end off of the F-105 before a warning could be given. Immediately after missile launch the MIG-21 broke off and was not seen again. This was the first U.S. aircraft to be shot down by an air-to-air missile over North Vietnam.

BLUE 2 broke into the MIG that was on the tail of BLUE 1. BLUE 2 simultaneously called for BLUE 3 to eject, which he did in the area of 20°46'N/105°05'E. BLUE 2 was canopy to canopy with the MIG but the MIG broke away and BLUE 2 dived with the MIG down to the ground.

BLUE 2 still had his sight set up for the air-to-ground mode with a depressed piper for bombing. He fired 350 rounds of 20 mm in a single burst at a few hundred feet range, diving, but observed no hits. BLUE 2, in afterburner, broke off from the MIG as they neared the ground.

BLUE 2 saw the chute of BLUE 3 and another parachute about 3 miles apart (suspected to be the drag chute of BLUE 3s aircraft)³. He reversed to go back after the other parachute and while in a left bank 500 to 550 knots, BLUE 2 saw another silver MIG-21 (either MIG-9, or 10) in a right bank, turning toward him 2,000-3,000 feet range, canopy to canopy. BLUE 2 rolled back to the right and split-S'ed down to the deck and barrel-rolled in afterburner and went down into the Black River Valley and lost the MIG.

After BLUE 1 and 3 were jumped, another MIG-21 (MIG-11) maneuvered behind BLUE 4 at his 7 o'clock but BLUE 4 escaped by going to afterburner and diving through the cloud deck. BLUE 1 reversed and saw BLUE 3's aircraft going down in flames. He then picked up a MIG-21 at his 7 o'clock so he disengaged and egressed.

BLUE 1 and 2 and 4 egressed. BLUE 2 had 1,800 lbs of fuel when he reached the tanker. Search and rescue forces picked up BLUE 3 at about 1743H (location was 251° magnetic heading, 43 n mi from Hanoi), despite ground fire. At 1745H all aircraft had departed the area.

The only MIG warnings that the flight received were communication from other flights that these other flights had been jumped by MIGs and one broadcast from the picket ships of "MIGS AIRBORNE."

¹OPREP quotes 6,000-8,000 feet but this is low considering the weather. However, in both cases, the MIGs jumped the F-105s shortly after the 105s emerged from the cloud layer.

²It was surmized by BLUE 2 that MIGs 6 and 7 were the same as MIG 9 and 10, with the MIGs executing a Yo-Yo to get back on top of the clouds.

³BLUE 2 thought he saw a man in the other chute.

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RED BARON EVENT II-99 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T0	BLUE Flight in Pod Form. at 2-3000 ft and 550 kts.	BLUE Flight sees M1 at 3 o'clock attempting to attack. BLUE presses on, popping up and striking the target.		B2 warned B4 of M1	RED 1 and 2 attempted to attack BLUE Flight but could not catch them and when BLUE came into the flak at the target they broke off.	MIGs silver - immediately identified by delta wing.
T1	600 kts in afterburner.	BLUE pressing out from target - comes out of burner. B2 sights M5 at 9 o'clock 2 miles out at co-altitude straight and level at high speed.		B2 calls "MIG at 9 o'clock" but call delayed due to traffic on the radio.	M5 does not attempt to attack BLUE.	
T2	550-600 kts level 8000 lb fuel.	B1, 2, and 3 line abreast with B4 back and right 1 mile. B2 and 3 see M6 and 7 coming in from 6 o'clock high closing rapidly. BLUE selects afterburner and drops through clouds.		B3 calls "MIGs at 6 o'clock";	M6 and 7 attacking from 6 o'clock high - about 8000 ft out when BLUE went into clouds.	BLUE drops out under clouds but due to flak and lowering ceiling they climb back on top.
T3	BLUE back	B2 sees M8 on B4 and warns 4. B4 goes into clouds with M8 chasing. About a minute later he climbs back up without M8. B4 sees M9 and 10 at 6 o'clock to B1, 2, 3 and warns them. B1, 2, 3 do not see M9 and 10.		B2 calls MIG at 9 o'clock on BLUE. B4 calls "BLUE 4 you have 2 MIG-21s at 6 o'clock" - meaning B1 and 2 instead of B4.	B8 was 2000 ft at 9 o'clock to B4 turning in. He chased B4 into clouds and then broke away. M6 and 7 possibly yo-yo'ed up when BLUE Flight went into clouds and are now coming back in.	B2 saw the MIG from about 2 miles away against the clouds. BLUE Flight has several SAMS fired at them - none hitting.

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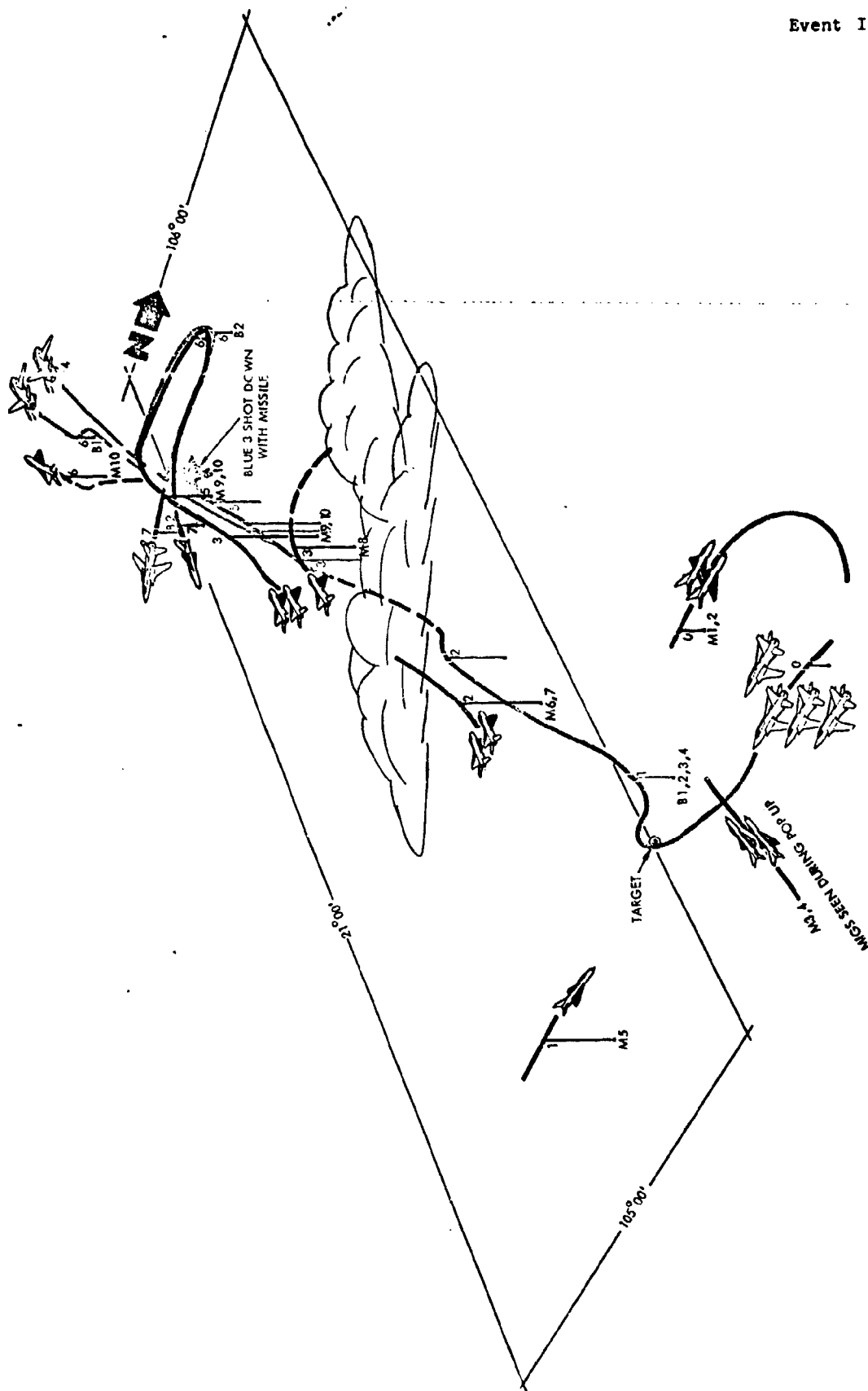
RED BARON EVENT II-99 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T4	BLUE on top of cloud deck.					BLUE Lead not getting any more SAM activity and feeling safe from MIGs due to distance away slows to climb speed - in a climb - and goes to different frequency to make strike report.
T5	BLUE Flight climbing at 400 kt fuel - 5000 ft	B2 sees M9 and 10 at 3 o'clock and sees M10 shoot down B3 with missile. B2 breaks into M9. B1 on different frequency is unaware of MIG activity.		B2 switches over to guard and tells B3 to eject.	M3 fires a missile into B3, then breaks away. M9 breaks down to evade B2.	
T6	B3 shot at. B2 chasing M9. B1 reversing.	B2 chases M9 to the deck firing but missing. B2 pulls up and reverses back toward B3. B1 reverses to see B3 in flames and M10 attacking. He runs to evade M10.			M10 attacking B1. M9 running from B2.	B2 fires 350 rounds at close range but misses - no gunsight. Did not have time to set switches - just pulled nose through M9 while firing.
T7	B1 and 4 departing area. B2 turning toward B3.	B2 sees two chutes coming down. As he reverses to check the second chute he sees M9 coming in. B4 makes a maximum speed dash south - loses M9 and then recovers Udorn.			M10 disengages and departs. M9 was at B2's 9 o'clock, 2-3,000 ft out when B2 started high speed escape.	BLUE 2 says "Never attack a MIG unless 9 to 3 o'clock low - so you can make one pass and escape."

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Event II-99



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Event II-100

Aircraft Involved: Four F-105Ds vs six MIG-21s,
six MIG-17s

Result: No damage

Vicinity of Encounter: 21°05'N/105°45'E and
21°30'N/105°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 December 1966/approx. 1630H

Four F-105Ds (BLUE Flight) strike on target in Route Package VI-A, JCS target 19.00. On the way into the target BLUE Flight dropped tanks but BLUE 3 had one 450-gal tank hang. BLUE 3 and 4 turned back to drop on a target of opportunity in the Red River area while BLUE 1 and 2 continued on to target JCS 19.00. The flight was part of a total force attacking JCS 19.00 (21°05'25"/105°55'15"). The flights originating from Takhlī were to strike the target first followed by those from Korat. The IRON HAND flights (Events II-103 and II-104) preceded the strike forces. The Takhlī forces (in order of striking the target) was composed of the aircraft in Events II-105 (TOT 0816Z), II-100 (TOT 0817Z), II-99 (TOT 0819Z) and II-102. The Korat force was composed of the aircraft in Event II-106 and Event II-101 which was the last strike flight on the target. Also in the area were EC-121 aircraft orbiting in the vicinity of 20/107 and 20/103 and EB-66B and CS orbiting in the vicinity of 22°10'N/105°20'E and 21°15'N/104°25'E. The USN also had a strike going at the same time.

2. MISSION ROUTE

Departed Takhlī Air Base, Thailand; refueled over Laos. They came in over the Red River, around Yen Bai, flew east to Thud Ridge and down the ridge to the target. BLUE 3 and 4 turned around at the south end of the ridge and egressed generally the same route. BLUE 1 and 2 flew west from the target to the Red River; then southwest to post strike refueling.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3 4

2 450-gal tanks
6 750 (M117)
1 QRC-160 pod
Camouflage paint
Radar standby, QRC-160 on, TACAN - Receive Only, Doppler silent, IFF standby
Pylon and adaptor but without AIM-9B (BLUE 1 and 3 only)

[The AIM-9B had been pulled off when it was thought that BLUE Flight would strike a secondary target, and insufficient time was available for reinstallation.]

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken clouds in the target area 3-5000 ft. Broken to overcast 4-8000 ft to the west of the target. Visibility 5 miles in haze.

	BLUE			
	1	2	3	4
<u>Altitude:</u>	6000 ft	6000 ft	7000 ft	7000 ft
<u>Heading:</u>	SE	SE	340	340
<u>Speed:</u>	550	550	475	475
<u>Fuel State:</u>	----Approximately 9000 lbs-----			

Flight Formation: BLUE Flight separated in two separate elements. The position of BLUE 4 in relation to BLUE 3 is unknown. However, BLUE 2 was flying above and behind BLUE 1 and at the time of their first sighting after BLUE 1 and 2 dropped on the target BLUE 2 came off first and during egress he was about 1/2 mi. in front of BLUE 1, at the time of their second sighting.

5. INITIAL DETECTION

On the way to the target received warning from BIG EYE about MIGs in the area. BLUE 2 observed six brown smoke trails going away about 11 o'clock. As BLUE 1 and 2 closed on them they were identified as MIG-17s. After bombing the target, BLUE 2 observed a second flight of four MIGs at 12 o'clock low, about 2-1/2 mi. flying toward BLUE 1 and 2.

BLUE 3 and 4 (had separated from the Lead element) were flying 340° at 6000 ft. BLUE 4 observed two MIG-21s at 11 o'clock; BLUE 3 looked up and saw two more at 1 o'clock. The exact time of these sightings is unknown, approximately 1630H local.

SECRET

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SECRET

Event II-100

6. ACTION INITIATED

BLUE 1 and 2 (first sighting). Selected max power. Made attempt to close behind the MIGs. On the second sighting BLUE Flight turned in to the approaching flight of four MIGs.

BLUE 3 and 4 turned into the MIGs, which they encountered.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 closed on the six MIGs, but prior to achieving range the MIGs broke up away to the left and BLUE 1 and 2 proceeded on to the target. On the second observation BLUE 1 and 2 turned in to the MIGs as they approached. The MIGs started to turn in behind BLUE 1 and 2 and then broke off.

BLUE 3 and 4, after making a head on pass broke to the left, the MIGs did a semi-chandelle to the right, but were unable to close on BLUE 3 and 4 as they continued westward at a high rate of speed.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

BLUE 3 was unable to jettison the right 450-gal fuel tank. The QRC-160 pod on BLUE 1 was reported not operational.

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 2	600	350	62	Graduated from flying school, Oct 1965, direct to F-105 school and then to SEA. Had fired 1 AIM-9 in training and fired gun on the dart.
BLUE 4	2290	400		First MIG engagement.

Comments on this Encounter:

BLUE 2. Thought they might have been able to get a kill with an AIM-9 on their first sighting. They were not loaded due to a last minute change in targets. All of BLUE Flight thinks the MIGs were GCI controlled. BLUE 2 thinks there is coordination between SAM activity and MIG.

BLUE 3 had trouble controlling aircraft with hung tank above 500 kt. Below 500 kt control was quite good.

BLUE 4. MIGCAP is no good for the strike flights most of the time. They are too far out of position.

Comments on Overall Experience:

BLUE 2. It is too difficult to go from bombing mode to air-to-air mode. It requires the pilot to look in the cockpit to do it. We have good intelligence available and our pilots have a good knowledge of enemy capabilities, but we need better target photography. BIG EYE is not much help. They clutter up the strike freq. with long MIG calls. Calls should be brief, i.e., "MIGs Thud Ridge" and get off the air.

BLUE 4. Never had recognition problems except for one time when four F-4s made a pass at the flight he was in.

11. DATA SOURCES

Project Interviews: BLUE 2 (4 Feb 67)
BLUE 3 (15 Mar 67)
BLUE 4 (3 Feb 67)

Messages, Reports: 7AF 142204 Dec 66 DIO 3100Z
7AF 141850 Dec 66 OPREP 3 DOCO 30393
7AF 141357 Dec 66 OPREP 4 DOCO 30375

SECRET

Event II-100

12. NARRATIVE DESCRIPTION

BLUE Flight ingressed to the target, and after starting down Thud Ridge, the flight prepared to jettison tanks, in an anticipation of potential MIG encounters. They had had a MIG warning from BIG EYE of MIGs in the area. The left tank of BLUE 3 would not jettison, so BLUE 3 and 4 separated from BLUE 1 and 2 at 21°30'N/105°30'E. BLUE 3 and 4 began to proceed outbound, hit a target of opportunity and return home. BLUE 1 and 2 proceeded on to the primary target.

BLUE 1 and 2 continued on toward the target encountering heavy flak but few SAMs. About 7 mi. from the IP BLUE 2 saw 6 black smoke trails and MIGs about 3000 ft above at 12 o'clock 4 mi. away. The aircraft were not immediately identified, and were not positively identified by BLUE 2 as MIG-17s until the MIGs turned. There were a group of four MIGs parallel to two others who were separated out several thousand feet. BLUE 2 called the MIGs, but BLUE 1 did not see them immediately. The MIGs were going away and since BLUE 1 and 2 were closing they tried to attack the MIGs. BLUE 1 and 2 accelerated in afterburner and approached to within 1 to 1-1/2 mi. when the MIGs broke up and to the left. The MIGs were lost from view in the haze as they passed off to 9 o'clock.

BLUE 1 and 2 continued on and hit the target. As they were egressing in the vicinity of 21°05'N/105°45'E BLUE 2 saw four bogeys at 12 o'clock and 2-1/2 miles range on an opposite heading. The bogeys in two elements and 1000 ft low. BLUE 2 turned to go after the MIGs, and notified BLUE 1 of his intent. BLUE 2 was set up at this time with a non-computing gunsight (fixed pipper at zero depression). The MIGs saw BLUE 2 and turned to climb, passing behind BLUE 2 in a YoYo, but broke away just prior to BLUE 1 and 2 being threatened by a SAM. BLUE 2 made no positive identification but tentatively classified the MIGs as 17s or 21s.

BLUE 1 and 2 were somewhat separated at this time and continued to egress. On egress BLUE 2 saw a four-ship flight of bogeys in a right turn at about 3 mi. range. BLUE 2 turned toward the bogeys and closed to about 2000 ft and started pulling lead on a bogey which was now at 11 o'clock. At this time BLUE 2 identified the aircraft as Navy F-8, so he made a hard right break to a heading of 340° and started to egress.

BLUE 2 continued on out when he saw two unidentified aircraft at 10,000 ft altitude 5 mi. away at his 6 o'clock. The aircraft were in close formation. BLUE 2 called that if they came at him he was going to turn into them despite his fuel state, but the bogeys turned away and were lost from view.

BLUE 1 and 2 noted SAMs during ingress and egress. On egress BLUE 2 noted a SAM detonate 1/4 to 1/2 mi. behind the element at 21°10'N/105°25'E, three other SAMs were seen to explode at 20,000 ft altitude above the east side of Thud Ridge, but these and four SAMs the flight saw detonating on the east side of Thud Ridge during ingress were not bursting near any aircraft that BLUE Flight could see.

BLUE 3 and 4 after leaving BLUE 1 and 2 proceeded to egress back up Thud Ridge. BLUE 3 and 4 reached the northwest end of Thud Ridge, and by this time had climbed through the overcast and were about 2000 ft above it in the vicinity of 21°38'N/105°25'E heading 340° at 7000 ft and climbing at approximately 475 KIAS. BLUE 4 was almost line abreast to BLUE 3's right when he saw two MIG-21s at 2 o'clock low, right on the top of the overcast at a range of 2-3 mi. Due to the cloud background the MIGs shape was easily discerned and identification was immediate. BLUE 4 called BLUE 3 and alerted him to the MIGs. BLUE 3 looked up and saw two MIG-21s high and at 2 o'clock. Although initially BLUE 3 and 4 each saw only two MIGs, the MIGs were in a flight of four with the lead element high and the low element about one mile in trail. The MIGs were initially orbiting in the vicinity of 21°45'N/105°32'E and approached the flight on a heading of 195 degrees with the high element at 8-10,000 ft. altitude.

BLUE 3 called to jettison all ordnance and go to afterburner and turned left into the high element of MIG-21s in an attempt to make a gun attack. The high section of MIGs turned into BLUE 3 and 4 in a descending pass. Due to the closing velocity, the lead (high) element of two MIG-21s passed BLUE 3 and 4 head-on about 50-100 yards away and a bit lower than the F-105s and were first seen by BLUE 4 at this time. The lower element climbed and crossed at about 6000 ft range. As the MIGs passed without firing they were identified as MIG-21D with the large radome. They were clean except for missile launchers on pylons, but no missiles were seen.

BLUE 4 broke right to keep track of the MIGs as the lead element passed by and attempted to get on the tail of BLUE 3 and 4. BLUE 3 and 4 then reversed by breaking down and to the left to a heading of about 240-260°. The two MIGs executed a barrel roll to the right (described as semi-chandelle) ending up about a mile behind BLUE 3 and 4.

The low element of MIGs were not seen after they passed the F-105s. BLUE 3 and 4 accelerated to Mach 1.2 at 4500 ft altitude. The high element of MIGs dived into the clouds and were lost from view. BLUE 3 and 4 came out of afterburner. One emerged again shortly with increased airspeed. However, the MIG was 2-3 miles in trail and BLUE 3 and 4 accelerated in afterburner to Mach 1.3 and the MIG fell behind (BLUE 3 and 4 were opening at about 100 kt). BLUE Flight continued on passing over the 6-7000 foot mountains and the MIG followed to the vicinity of 21°27'N/104°40'E when he broke off.

SECRET

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SECRET

Event II-100

BLUE 3 and 4 started the engagement with about 9000 lb of fuel. BLUE 4 got to the tanker with 2500 lb of fuel.

BLUE 1 and 2 got to the tanker with only about 1000 lb of fuel.

BLUE 4 never got his sight set up for air-to-air due to the rapidity of the action.

SECRET

SECRET

RED BARON EVENT II-100 SUMMARY

Time Mark	Action Aircraft (BLUE 1,2)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T0	6000 ft 550 kt Had jettisoned 450-gal tank 6 750 lb bombs 1 QRC-160 pod 9000 lb fuel	B2 above and behind B1. Clearing - B2 saw 6 MIGs at 11:30 -- went Max A.B. to close from the rear.	Lead did not see initially.	BLUE 2 called "Bogey" at 11:30 or 12 o'clock."	3000 ft above heading about 110° slower than F-105s	B2 first saw the smoke trails brown color, not like F-105 smoke. B2 spread out going after bogeys. BLUE Flight had jettisoned tanks prior to this time due to MIG alerts in the area and 3 SAM detonations observed.
T1	Climbing and accelerating to about 7000 ft NOTE: BLUE 1,2 proceeded to the target without anymore difficulty. They delivered the ordnance and were egressing at the time T2.	BLUE Flight closed on the MIGs, made positive identification -- didn't give chase but continued on into the target.	B1 acquired the MIGs.		MIGs broke up and away to the left.	When MIG got to 9 o'clock they were lost in the haze. B2 felt the MIG must have had GCI warning. When MIGs turned away BLUE Flight did not pursue them but continued on to target at high rate of speed.
T2	Conf. clean and QRC pods had dropped bombs on target. 550-575 kt	B2 turned toward MIGs constant 3g turn keeping MIGs in sight.	Lost sight of lead.	B2 called "9 bogeys 12 o'clock - I am going in on them."	First element broke into B2 and up. (MIG seemed a little slower than B2.)	B2 lost lead. Did not join until tanker.
T3	B2 started a reverse but lost MIGs -- continued egress on westerly heading.					SAM went off 1/4 to 1/2 mi. behind B2.

SECRET

RED BARON EVENT II-100 SUMMARY

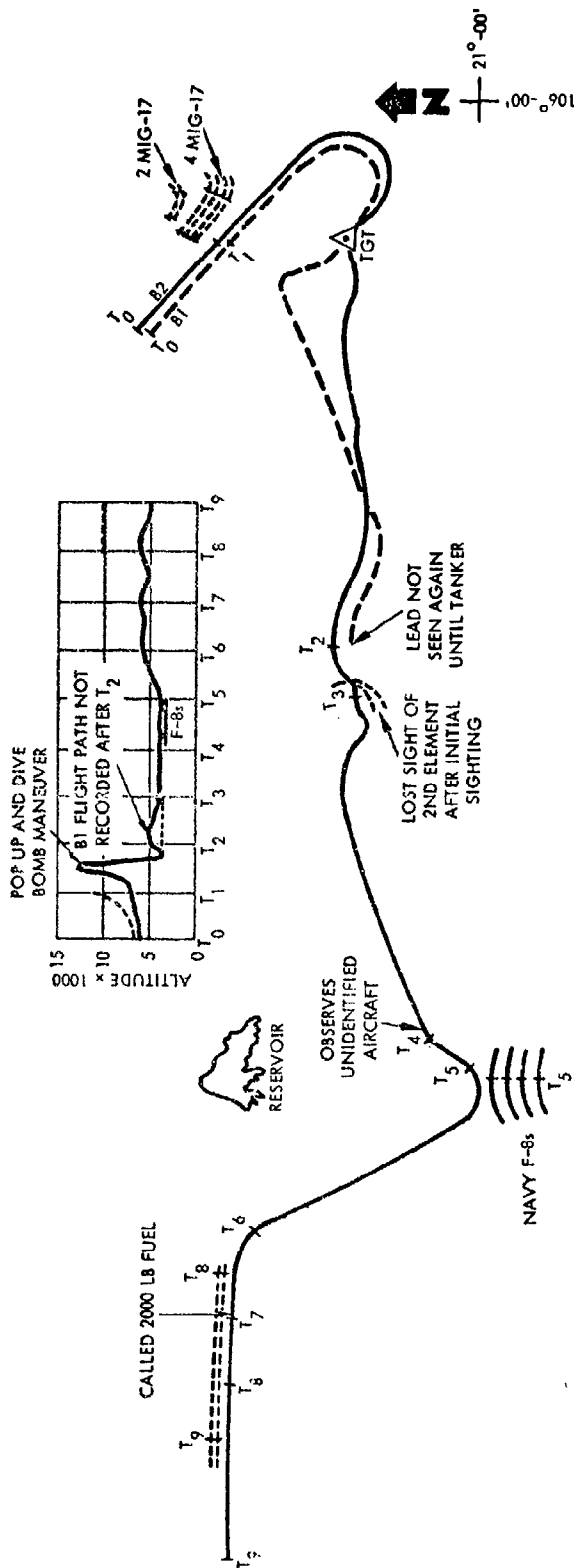
Time Mark	Action Aircraft (BLUE 1, 2)		Other Friendly	Communications	Enemy Actions (MiG 1,2)	Remarks
	Status	Action				
T4		Saw 4 unidentified aircraft. Turned right into bogeys.			Bogeys in right turn 3 mi. range.	
T5	550 kt	Recognizes bogeys as F-8s. Turns right to 340°.		None.	Identified bogeys to be 4 F-8s.	
T6	550 kt	In left hand turn toward the west.			SAM detonated at 5 o'clock 1/4 to 1/2 mi. CO-altitude.	
T7	550 kt	Flying west -- jinking.		B2 called 2000 lb fuel.		QRC-160 MOP Red and Green lights.
T8	550 kt	Flying west -- sees 2 aircraft flying west at 10,000 ft 6 o'clock in close formation.			2 unidentified aircraft heading west in close formation.	
T9	550 kt	Continued west -- jinking; lost sight of them.		B2 called "if they come at me I will turn into them."	Unknown.	

SECRET

RED BARON EVENT II-100 SUMMARY

Time Mark	Action Aircraft (BLUE 3,4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T0a	Alt. 7000 ft Heading: 340° A/S 475 kt 6 750 lb bombs 1 QRC-160 pod B3 had 1 450 gal tank.	Observe 4 MIG-21s B3 saw 2 at 1-2 o'clock BLUE Flight jettisoned their ordnance and turned right into MIG 1 2 in afterburner.		B4 called 2 MIGs at 11 o'clock. B3 called "Dump all ordnance." Go A.B.	Flying heading of 195°.	Still had ordnance, B4 dropped his tanks, but B3 had one 450-gal tank hung up on the aircraft. They had aborted the original target because of B3's hung tank and were looking for a target of opportunity.
T1a	B3 1 450-gal tank B4 clean Alt. 6000 ft A/S 550 kt	Passed MIG head on 50 yds separation then broke left 260°.		Called for left turn.	MIGs did semi-change to the right. After passing BLUE Flight MIG element was 1000 ft lower.	BLUE Flight unable to bring guns to bear on MIGs -- MIGs did not fire. B3 identified them to be MIG-21Ds. Clean aircraft except for missiles.
T2a	In A.B. Slight negative "g" accelerating to 1.3 Mach.	Flying west trying to outrun MIGs.			Roll'd out behind BLUE Flight trying to catch them.	B3 experienced difficulty in lateral control above Mach 1 with hung 450-gal tank.
T3a	In A.B. Approx. 700 kt	Flying min. alt. Gaining separation on MIGs. Crossed Red River 1000 ft alt. 1.3 Mach.			MIGs disengaged as they were losing distance on BLUE Flight.	The last MIG to break off kept trying to get his nose down to gain -- possibly to fire a missile but kept losing out and finally gave up the chase.

SECRET



SECRET

Event II-101

Aircraft Involved: Four F-105s vs two MIG-17s

Result: No damage

Vicinity of Encounter: 21°32'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 December 1966/1707H

BLUE Flight was scheduled to strike the Yen Vien RR classification yard. Upon reaching the target they found it obscured by weather. They were turning over the target to the egress heading when this event occurred. The flight was part of a total force attacking JCS 19.00 (21°05'25"N/105°55'15"E). The flights originating from Takhli were to strike the target first followed by those from Korat. The IRON HAND Flight Events II-103 and II-104 preceded the strike forces. The Takhli forces (in order of striking the target) was composed of the aircraft in Events II-105(TOT 0816Z), II-100(TOT 0817Z), II-99 (TOT 0819Z), and II-102. The Korat force was composed of the aircraft in Event II-106 and Event II-101 which was the last strike flight on the target.

2. MISSION ROUTE

See Event II-99. BLUE Flight, from Korat, was refueled inbound and outbound.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

6 - 750 lb bombs
2 - 450 gal tanks
1 - QRC-160 Pod
All avionics standby/off except doppler
Camouflage paint

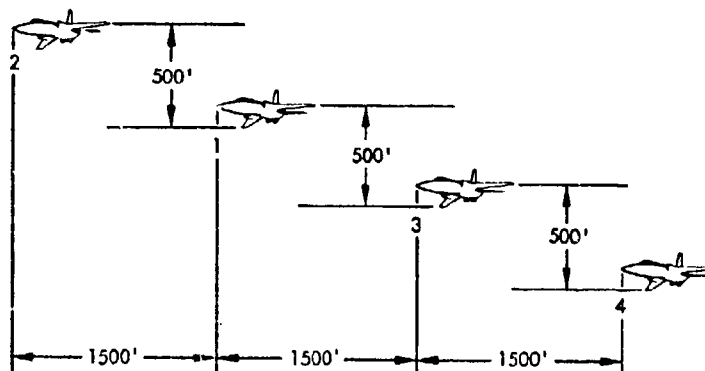
MIG-17 MIG 1, 2

Configuration unknown
Silver colored

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken clouds and haze at lower levels, clear above.

	BLUE			
	1	2	3	4
<u>Altitude:</u>	---16,000 ft---			
<u>Heading:</u>	135° inbound, about 250° outbound			
<u>Speed:</u>	--540 kt G.S.---			
<u>Fuel State:</u>	---10,000 lb---			
<u>Flight Formation</u>	Pod formation			



SECRET

5. INITIAL DETECTION

Event II-101

BLUE Flight on a heading of 135° was turning right to a westerly heading when they saw two MIG-17s¹ coming from the west, out of the sun, and turning in behind them. The MIGs were at 7 going to 5 o'clock about 6000 ft range and 500 ft higher than the flight. The flight had heard BIG EYE MIG warnings at the tanker but nothing specific.

6. ACTION INITIATED

BLUE Flight jettisoned their bombs, descended to 10,000 ft in maximum power, and at Mach 1.1, out ran the MIGs.

7. SITUATION DEVELOPMENT

See Item 12.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
<u>BLUE 1</u>	3600	1000	25	Highly qualified fighter pilot.

Comments on this Encounter

BLUE 1 felt that BIG EYE was useless.

Comments from Overall ExperienceBLUE 1:

1. Felt that the peace time operational outfits were negligent in air-to-air training.
2. Felt that the double canopy and accumulated scratches on the canopy caused a glare problem which restricted visibility.
3. Felt that too many switches were involved in changing weapon delivery modes.
4. Felt that a two pilot concept just wasted one pilot.

11. DATA SOURCES

Project Interviews: BLUE 1, 15 Feb 67

Messages, Reports:

7AF DIO 31002 142204 Dec 66

12. NARRATIVE DESCRIPTION

As BLUE Flight turned over the target, aborting the drop due to weather, they saw two MIG-17s at 6000 ft back at the 7 o'clock position, the flight was at the MIG's 10 o'clock. BLUE Flight jettisoned their ordnance and dived down to 10,000 ft at Mach 1.1 to evade the MIGs. The MIGs were in a fighting wing with No. 2 MIG on left. Shortly thereafter all members of BLUE Flight got launch lights on their vector gear so they disregarded the MIGs to prepare for the SAM attack. The SAMs were not seen nor were the MIGs seen again as BLUE Flight returned home. Flight egressed without further incident.

¹B-4 reportedly saw two more.

SECRET

Event II-101

Aircraft Involved: Four F-105s vs two MIG-17s

Result: No damage

Vicinity of Encounter: 21°32'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 December 1966/1707H

BLUE Flight was scheduled to strike the Yen Vien RR classification yard. Upon reaching the target they found it obscured by weather. They were turning over the target to the egress heading when this event occurred. The flight was part of a total force attacking JCS 19.00 (21°05'25"N/105°55'15"E). The flights originating from Takhli were to strike the target first followed by those from Korat. The IRON HAND Flight Events II-103 and II-104 preceded the strike forces. The Takhli forces (in order of striking the target) was composed of the aircraft in Events II-105(TOT 0816Z), II-100(TOT 0817Z), II-99 (TOT 0819Z), and II-102. The Korat force was composed of the aircraft in Event II-106 and Event II-101 which was the last strike flight on the target.

2. MISSION ROUTE

See Event II-99. BLUE Flight, from Korat, was refueled inbound and outbound.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

6 - 750 lb bombs
2 - 450 gal tanks
1 - QRC-160 Pod
All avionics standby/off except doppler
Camouflage paint

MIG-17 MIG 1, 2

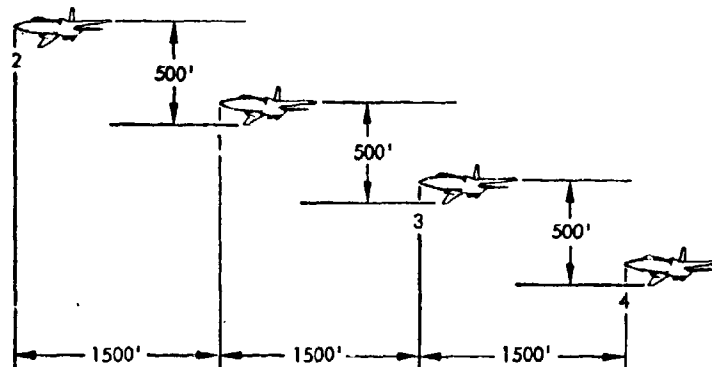
Configuration unknown
Silver colored

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken clouds and haze at lower levels, clear above.

BLUE
1 2 3 4

Altitude: ---16,000 ft---
Heading: 135° inbound, about 250° outbound
Speed: --540 kt G.S.---
Fuel State: ---10,000 lb---
Flight Formation Pod formation



SECRET

SECRET

5. INITIAL DETECTION

Event II-101

BLUE Flight on a heading of 135° was turning right to a westerly heading when they saw two MIG-17s¹ coming from the west, out of the sun, and turning in behind them. The MIGs were at 7 o'clock about 6000 ft range and 500 ft higher than the flight. The flight had heard BIG EYE MIG warnings at the tanker but nothing specific.

6. ACTION INITIATED

BLUE Flight jettisoned their bombs, descended to 10,000 ft in maximum power, and at Mach 1.1, out ran the MIGs.

7. SITUATION DEVELOPMENT

See Item 12.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	3600	1000	25	Highly qualified fighter pilot.

Comments on this Encounter

BLUE 1 felt that BIG EYE was useless.

Comments from Overall Experience

BLUE 1:

1. Felt that the peace time operational outfits were negligent in air-to-air training.
2. Felt that the double canopy and accumulated scratches on the canopy caused a glare problem which restricted visibility.
3. Felt that too many switches were involved in changing weapon delivery modes.
4. Felt that a two pilot concept just wasted one pilot.

11. DATA SOURCES

Project Interviews: BLUE 1, 15 Feb 67

Messages, Reports:

7AF DIO 31002 142204 Dec 66

12. NARRATIVE DESCRIPTION

As BLUE Flight turned over the target, aborting the drop due to weather, they saw two MIG-17s at 6000 ft back at the 7 o'clock position, the flight was at the MIG's 10 o'clock. BLUE Flight jettisoned their ordnance and dived down to 10,000 ft at Mach 1.1 to evade the MIGs. The MIGs were in a fighting wing with No. 2 MIG on left. Shortly thereafter all members of BLUE Flight got launch lights on their vector gear so they disregarded the MIGs to prepare for the SAM attack. The SAMs were not seen nor were the MIGs seen again as BLUE Flight returned home. Flight egressed without further incident.

¹B-4 reportedly saw two more.

SECRET

Event II-102

Aircraft Involved: Four F-105s vs two MIG-21s¹

Results: No Damage

Vicinity of Encounter: 21°28'N/104°48'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 December 1966/1615H

BLUE Flight (four F-105s) were enroute to JCS-19. The flight was part of a total force attacking JCS 19.00 (21°05'25N/105°55'15E). The flights originating from Takhli were to strike the target first followed by those from Korat. The IRON HAND flights Events II-103 and II-104 preceded the strike forces. The Takhli forces (in order of striking the target) was composed of the aircraft in Events II-105(TOT 0816Z), II-100 (TOT 0817Z), II-99(TOT 0817Z) and II-102. The Korat forces was composed of the aircraft in Event II-106 and Event II-101 which was the last strike flight on the target. There were BIG EYE EC-121 aircraft orbiting at 20°N/107°E and 20°N/103°E. EB 66Bs and Cs were orbiting at 22°10'N/105°20'E and 21°15'N/104°25'E. Also the Navy was conducting at strike in the immediate vicinity. The flights were about two minutes (18 mi) apart.

2. MISSION ROUTE

The exact route is unknown. However, it is known that the flight had refueled and was just approaching the Red River inbound to the target on a northeast heading.

3. AIRCRAFT CONFIGURATIONS

F-105s BLUE 1, 2, 3, 4

6 - 750 bombs on controlling
2 - 450 gal tanks on inboard stations
1 - QRC -160 POD
1 - AIM-9-B (BLUE 1 only)
Blue 4 had camera pod on LHOB.
Camouflage paint
BLUE 1 TACAN IFF doppler all on and radiating
BLUE 4 doppler was on; IFF standby; TACAN receive; radar standby
M-61 cannon

MIG-21 MIG 1, 2

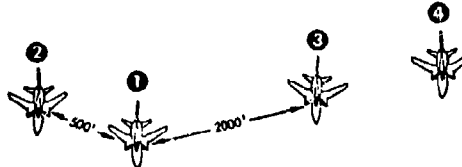
Air-to-air missiles
Silver paint - no markings
Cannons
One of the MIG-21s was identified as a Fishbed D.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: One check at 4000-8000 ft broken and another at 5000 ft overcast visibility unknown.

BLUE
1 2 3 4

Altitude: 11,000 ft (about halfway between closed layers)
Heading: 050°
Speed: 500
Fuel State: Full internal plus (about 11,000 lbs)
Flight Formation: Elements almost line abreast



5. INITIAL DETECTION

BLUE 2 called, "MIGs at 6 o'clock." The MIGs at that time were coming down from a cloud deck which was at 15,000 ft and the only reason they were seen was the vapor trails - water vapor coming off the wing tips. The MIGs were 1 1/2 miles away and closing. Although the flight had head MIG warnings, none was given for the area in which they were flying.

¹ The OPREP messages cite two MIG-17s, however, the aircraft described and identified in the interviews are MIG-21s. Also annotated mission tape Blue 2 of Event II-99 also indicated that the MIGs were 21s.

SECRET

SECRET

Event II-102

6. ACTION INITIATED

Because of other rapid chatter BLUE 1 asked for a repeat and BLUE 4 confirmed the MIGs. At this time, BLUE Flight jettisoned ordnance and tanks, went burner and started a left break.

7. SITUATION DEVELOPMENT

The MIGs fired singly (not in salvo) over a short period of time two missiles which detonated about 50 yards behind BLUE 3 and 4 - doing no damage. With BLUE 1 and 2 in an easy left turn and BLUE 3 and 4 in a hard break, MIG 1 and 2 closed in on BLUE 3 and 4, pulled up in a yo-yo, back in on BLUE 4 about 1000 ft back, and started firing the cannons. By this time BLUE Flight had jettisoned all stores except the QRC pods and had selected maximum power. BLUE 3 and 4 had accelerated to Mach 1.1 and were out running the MIGs. Meanwhile, BLUE 1 and 2 were able to position behind the MIGs. As BLUE 1 dropped back and reversed, the MIGs disengaged by dropping down into the lower cloud dock. During the hassle, BLUE 3 had dropped down into the lower cloud layer so, rather than join up, BLUE 1 sent BLUE 3 to orbit in Laos. BLUE 1, 2, and 4 joined up and set up a MIG patrol just north of the Red River. No other MIGs were sighted and at bingo fuel the flight went home.

8. ORDNANCE

(No. fired/No. hits)

BLUE Flight No ordnance expended

	<u>Cannon</u>	<u>Soviet AAM(ATOLL)</u>	<u>Remarks</u>
<u>MIG 1</u>	1/0	2/0	Detonated behind BLUE 3 and 4 No damage

10. AIRCREW COMMENTS

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	3600	1150	55	All TAC FTR background First MIG engagement
BLUE 4	1100	600	11	All TAC FTR background First MIG engagement

Comments on this Encounter

BLUE 1: -Would have liked radar to have been able to maintain contact with MIG
-Says pilots need more air to air training
-Would have liked capability to jam EW radar
-Would like a larger envelope for error at low altitude
-Would like more acceleration and turn capability
-Would like range readout on gunsight
-Says pilot has too many switches to change to go from ground attack to air to air
-Thought MIG pilots had good basic training, good flight discipline-but not too aggressive

BLUE 4: -Wants tighter turn capability
-Wants better air to air training
-Wants more acceleration
-Wants better visibility to 6 o'clock
-Says "Lucky to be alive."

11. DATA SOURCES

Project Interviews: BLUE 1 2 Feb 67, BLUE 4 14 Dec 66
Messages, Reports: 7AF DIO 31002 142204

12. NARRATIVE DESCRIPTION

BLUE Flight, inbound to a Package VI target, was at 11,000 ft between 9000 ft and 13,000 ft cloud layers when BLUE 2 spotted MIG Flight coming out of the upper cloud layer about one to one and a half miles back and at the 6 o'clock position. BLUE Flight jettisoned stores at 21°28'N/104°48'E and started a left break when MIG Flight launched two air-to-air missiles. Both missiles detonated behind BLUE 3 and 4 but caused no damage. MIGs then closed to 1000 ft on BLUE 3 and 4 and opened fire with his cannon. BLUE 3 and 4 accelerated to Mach 1.1 in the left break and escaped undamaged. Meanwhile, BLUE 1 and 2 were maneuvering to the 6 o'clock position on MIG flight. However, before BLUE 1 and 2 could position on MIG Flight, MIG Flight disengaged by dropping into the lower cloud dock. BLUE 1, 2, and 4 rejoined for MIG patrol. BLUE 3 had gone into the lower cloud layer during the hassle so rather than rejoin the flight he went to an orbit in Laos. It was felt that due to the attack position, the MIGs had been under GCI.

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RED BARON EVENT II-102 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 2, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	Alt 11,000 Hdg 043-050° about 500 KTAS 10,500 lb of fuel.	B2 saw 2 MIGs (M1, 2) closing on the flight.	BLUE Flight elements separated by about 2000 ft.	B2 called MIG at 6 o'clock 1-1/2 miles from B1. "Did you say BLUE Flight" B2 confirms.	MIGs in tight fighting wing, M2 about 40-60° back, 300-1000 ft out from M1. MIGs had good overtake.	B4 saw two silver aircraft and was able to identify by color only. MIGs seem to have contrails from the wing tips.
T ₁	Same as T ₀	BLUE Flight jettisons stores and tanks and goes to afterburner. B3 and 4 start a left break and nose over rapidly after missile launch. B1 and 2 start a left. B1 sets switches for AIM-98 and sights in air-to-air mode.		From B1 "Jettison bombs and stores."	M1 fired two AAMs at B3 and B4. The two Atoils miss.	Missiles explode at about 5 o'clock at about 50 yards range, somewhere beyond closest point of approach. B1 has no plan to use radar lock for radar ranging.
T ₂	B3 and 4 descending in a left turn 4-5 g. KTAS. B1 and B2 in 4g turn at higher altitude.				MIGs go after B3 and B4, start to cut inside of B3 and B4s turn. MIGs in tight formation to prevent overshoot, the MIGs execute a yo-yo.	Yo-yo is perfectly timed and executed.
T ₃	B3 and 4 at 600 KTAS. Still in hard turn to keep airspeed up. Altitude 6-7000 ft B1 and 2 at about 9500 ft.				MIG at 800-900 ft from B4, and fires cannon.	B4 saw white puffs of smoke from underside of aircraft. Intermittent puffs from lead MIG only.

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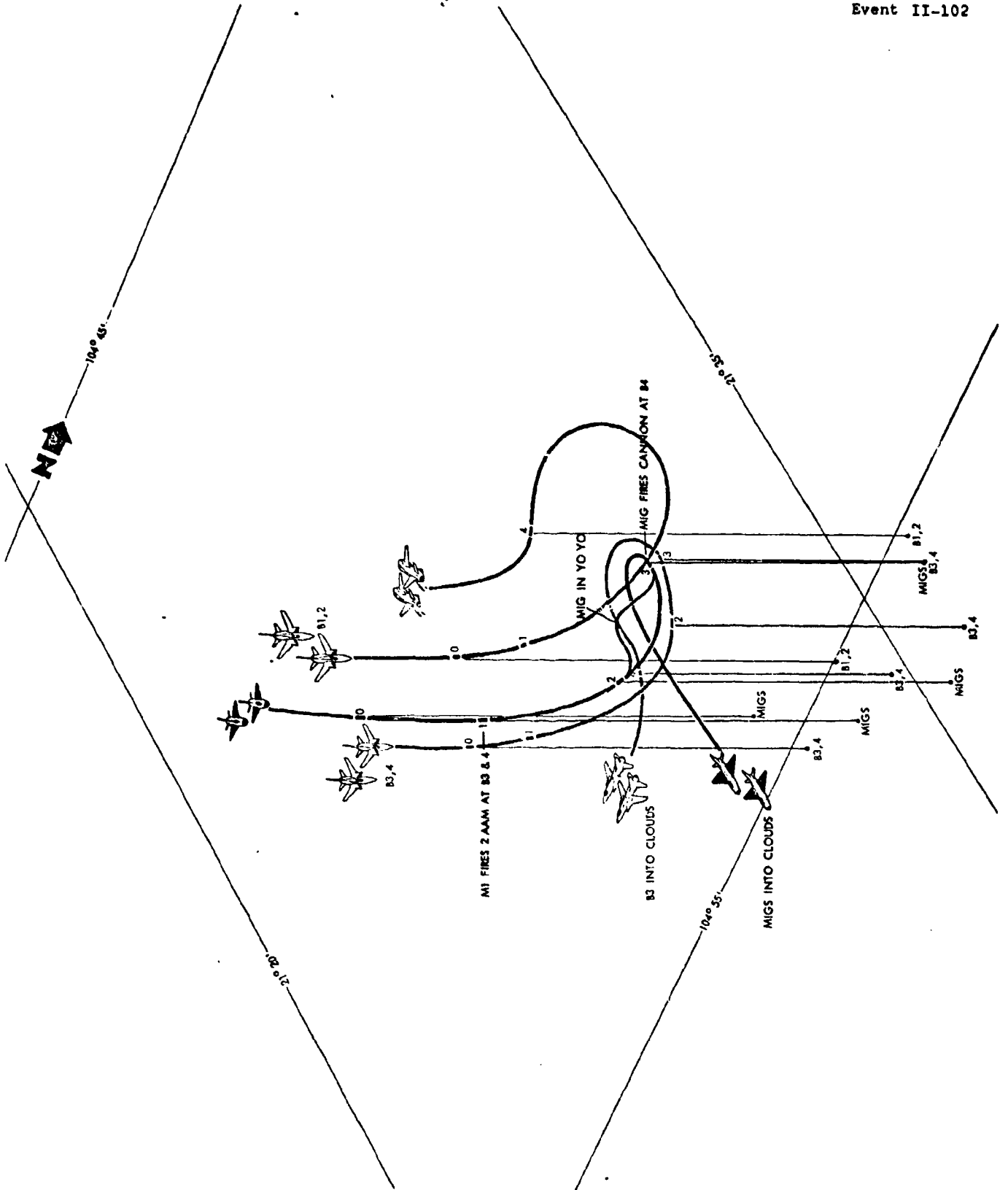
RED BARON EVENT II-102 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T 4	B1, 2 at 9500 ft 3-4 g turn	B1 and B2 start to reverse to the right. Come out of afterburner. B3 goes into clouds. B4 reverses to right and joins B1 and B2. B1, 2 and 4 set up an orbit at 10-11,000 ft.		B1 called "Where are MIGS" B4 answered that MIGS had gone into clouds. Lead tells B3 to go home.	MIGS reverse and dive into the clouds.	

SECRET

SECRET

Event II-102



SECRET

SECRET

Event II-103

Aircraft Involved: Two F-105s vs two possible
MIG-17s

Result: No damage

Vicinity of Encounter: 20°40'N/105°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 December 1966/1740Z

BLUE 1 and 2 (two F-105P WILD WEASEL aircraft) from Takhlil had completed their primary mission and were flying RESCAP for a downed F-105 (BLUE 3 from Event II-99). Two other F-105P were also on RESCAP but were not in the immediate vicinity. The flight was part of a total force attacking JCS 19.00 (21°05'25"N/105°55'15"E). The flights originating from Takhlil were to strike the target first followed by those from Korat. The IRON HAND flights (Events II-103 and II-104) preceded the strike forces. The Takhlil forces (in order of striking the target) were composed of the aircraft in Events II-105(TOT 0816Z), II-100 (TOT 0817Z), II-99(TOT 0819Z) and II-102. The Korat forces were composed of the aircraft in Event II-06 and Event II-101 which was the last strike flight on the target. There were 20-100 aircraft on station at 20°N/107°E and 20°N/103°E. Also A8-66Bs and Cs were in orbits in the vicinity of 22°10'N/105°20'E and 21°15'N/104°25'E. The Navy had a strike in the immediate vicinity of JCS 19.00. These other aircraft had left the area by the time of this event.

3. AIRCRAFT CONFIGURATIONS

No information except that BLUE 1 and 2 carried tanks.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Specifics unknown -- however, it was overcast in the target area such that the strike flights aborted. In the RESCAP area it must have been VFR since the RESCAP was effected.

BLUE Flight was in a left orbit at 12,000 ft when the MIG attack started. Other flight condition information unknown.

5. INITIAL DETECTION

BLUE Flight was in a left orbit at 12,000 ft flying RESCAP for a downed F-105 pilot. About the time the pick-up was being completed, BLUE 2 called out bogeys at 7:30 o'clock.

6. ACTION INITIATED

BLUE 1 didn't see the bogeys. BLUE 2 called that the bogey was shiny and from that BLUE 1 assumed that the bogey was a MIG. BLUE 2 jettisoned his tanks; BLUE 1 attempted to jettison his tanks but one would not come off. BLUE Flight broke down and into the MIGs. The MIGs got no closer than 3000 feet to BLUE Flight when they did a hard climbing turn to disengage.

7. SITUATION DEVELOPMENT

This event terminated when the MIGs disengaged and disappeared.

9. EQUIPMENT PROBLEMS

BLUE 1 had one 450-gal tank that he could not jettison.

10. AIRCREW COMMENTS

Experience: Unknown

Comments on This Encounter

BLUE 1 felt that the MIGs would have been short on fuel since they were so far from the airfield (?).

11. DATA SOURCES

Project Interview: BLUE 1, 14 Mar 1967.

Messages:

7AF DIO 31002 142204Z Dec 66
7AF 141850Z Dec 66 OPREP-3 DOCO 30393

12. NARRATIVE DESCRIPTION

BLUE Flight had completed their mission and had egressed to the tanker for post-strike refueling. On receiving communication that an F-105 had been shot down (see Event II-99), BLUE 1 and 2 returned to set up a RESCAP orbit about 1700H. There were two other F-105s in the area and were seen by BLUE Flight several times. The other two F-105s departed the area due to low fuel state, and about at this time (about 1740H) BLUE Flight heard that the pick-up of the pilot was being completed.

SECRET

SECRET

Event II-103

12. NARRATIVE DESCRIPTION (Continued)

At this time BLUE 2 called bogeys at 7:30 o'clock. BLUE 1 never saw the bogeys but when BLUE 2 called that they were shiny, BLUE Flight punched tanks and broke left and down. BLUE 2's tanks came off but only one of BLUE 1's jettisoned.

The MIGs were coming from the 8 o'clock position sliding into the 6 o'clock and were 2-3 miles out when first detected.

As BLUE Flight broke into the MIGs, they executed a hard climbing turn and headed back towards Hanoi. No firing was observed and the MIGs never closed to less than 3000 ft.

SECRET

SECRET

Event II-104

Aircraft Involved: Four F-105s vs two MIG-21s
Result: Sighting
Vicinity of Encounter: 21°55'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 December 1966/1650H

BLUE Flight (one F-105F and 3 F-105Ds) from Korat was on an IRON HAND mission. The flight was part of a total force attacking JCS 19.00 (21°05'25"N/105°55'15"E). The flights originating from Takhlī were to strike the target first followed by those from Korat. The IRON HAND Flights (Events II-103 and II-104) preceded the strike forces. The Takhlī forces (in order of striking the target) were composed of the aircraft in Events II-105 (TOT 0816Z), II-100 (TOT 0817Z), II-99 (TOT 0819Z) and II-102. The Korat forces were composed of the aircraft in Event II-106 and Event II-101 which was the last strike flight on the target. There were EC-121 aircraft orbiting at 20°N/107°E and 20°N/103°E as well as EB-66Bs and Cs orbiting at 22°10'N/105°20'E and 21°15'N/104°25'E. The Navy was also conducting strikes in the immediate vicinity of JCS 19.00.

2. MISSION ROUTE

Generally followed the other flight routes (see Event II-99)

3. AIRCRAFT CONFIGURATION

Unknown - ordnance on BLUE 4 was bombs.

BLUE Flight had no AIM-9Bs.

MIGs were silver.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Unknown, but in this case not a factor.

BLUE Flight

Altitude: 14,000 ft

Heading: 092°

Speed: 480 kt

Fuel State: Unknown

Formation: Unknown

5. INITIAL DETECTION

BLUE 4 looked overhead and saw two possible MIG-21s passing over the formation at 6 o'clock high. BIG EYE had called out MIGs in the area ahead of BLUE Flight. The MIGs were on the same heading as BLUE Flight and were at 23,000 ft altitude.

6. ACTION INITIATED

The MIGs were about 0.2 Mach faster. As they passed overhead and for about three minutes after, BLUE watched the MIGs press away.

7. SITUATION DEVELOPMENT

BLUE did not attack and the MIGs soon disappeared in the distance.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	2800	Unknown	Unknown	Mostly ADC experience.
BLUE 4	4300	100	15	

Comments on This Encounter

BLUE 4 felt that if he had a SIDEWINDER he could have killed these MIGs.

Comments from Overall Experience

11. DATA SOURCES

Project Interviews: BLUE 2, 2 Feb 67; BLUE 4, 4 Feb 67

Messages:

7AF DIO 31002 142204Z Dec 66

12. NARRATIVE DESCRIPTION

See as Item 7.

SECRET

SECRET

Event II-105

Aircraft Involved: Four F-105s vs numerous MIGs

Result: No damage

Vicinity of Encounter: 21°15'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 December 1966/1613H

BLUE Flight (four F-105s) was the lead flight with flak suppression responsibilities for JCS target 19.00. BLUE 1 was the force commander for this strike. The flight was part of a total force attacking JCS 19.00 (21°05'25"N/105°55'15"E). The flights originating from Takhli were to strike the target first followed by those from Korat. The IRON HAND flights (Events II-103 and II-104) preceded the strike forces. The Takhli forces (in order of striking the target) were composed of the aircraft in Events II-105 (TOT 0816Z), II-100 (TOT 0817Z), II-99 (TOT 0819Z) and II-102. The Korat force was composed of the aircraft in Event II-106 and Event II-101 which was the last strike flight on the target.

On station were EC-121 aircraft orbiting in the vicinity of 20°N/103°E and 20°N/107°E also in the area were EB-66Bs and Cs in the vicinity of 52°10'N/105°20'E and 21°15'N/105°25'E. The Navy was also conducting strikes in the vicinity of JCS-19.00.

2. MISSION ROUTE

BLUE Flight departed Takhli, refueled, flew to the north tip of Thud Ridge, and then down the west side of the ridge to the target. (See Event II-99).

3. AIRCRAFT CONFIGURATIONS

BLUE 1, 2, 3, 4

5 - 750 lb bombs
2 - 450-gal tanks
M-61 cannon/1029 rounds
All aircraft had QRC-160 pods

MIGs

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Overcast - Bases 1,500 ft and tops 5,000 ft, heavy rain and bad visibility underneath. These conditions prevailed except right over the target where the sky condition was clear.

BLUE 1, 2, 3, 4

Altitude: 3,000 ft (approx)
Heading: Approximately 138°
Speed: 580 kt
Fuel State: Full internal plus

Flight Formation:

Unknown

5. INITIAL DETECTION

BLUE 1 had just descended through the cloud layer when he got a MIG call putting MIGs at his 3 o'clock. The flight was in the vicinity of 21°15'N/105°40'E.

6. ACTION INITIATED

As the MIG (type unknown) passed to 5 o'clock, BLUE Flight lit afterburner and climbed back on top of the cloud layer.

7. SITUATION DEVELOPMENT

As BLUE Flight came up above the clouds, a SAM was fired at them. MIGs were also seen, so BLUE went back down under the clouds. And as they passed Phuc Yen they saw several MIGs taking off to the north. MIG-21 followed BLUE 1 until he pulled up for bomb delivery. BLUE Flight popped up into a left, approximately 270° turn, delivered their bombs on the target, and departed for home. Outbound at 1617H two unidentified aircraft were observed in formation at 20°55'N/105°40'E, heading 090°.

8. ORDNANCE

BLUE Flight expended no air-to-air ordnance (bombs only).

9. EQUIPMENT PROBLEMS

BLUE 2 had one tank that would not jettison.

SECRET

365

10. AIRCREW COMMENTS

Experience:

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 1	5500	200	30

Comments on this Encounter:

BLUE 1 felt that flak suppression was tremendously effective -- that CBUs were good but they got only the crews and that 3,000 VT bombs would get the crews and the guns.

11. DATA SOURCES

Project Interview:

BLUE 1 - 6 Feb 67

Messages, Reports:

7AF OPREP-4 DOCO 30373 141312Z Dec 66
7AF 142204Z Dec 66 DIO 31002
7AF 141850Z Dec 66 OPREP-3 DOCO 30393

12. NARRATIVE DESCRIPTION

See Items 5, 6, and 7 above.

SECRET

Event II-106

Aircraft Involved: One F-105D vs two MIG-21s

Result: Sighting

Vicinity of Encounter: 21°00'N/105°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 14 December 1966/unknown

BLUE Flight of four F-105Ds were egressing from a strike mission. The flight was part of a total force attacking JCS 19.00 (21°05'25"N/105°55'15"E). The flights, originating from Takhl1, were to strike the target first, followed by those from Korat. The IRON HAND Flights (Events II-105 and II-104) preceded the strike forces. The Takhl1 forces (in order of striking the target) were composed of the aircraft in Events II-105 (TOT 0816Z), II-100 (TOT 0817Z), II-99 (TOT 0819Z) and II-102. The Korat forces were composed of the aircraft in Event II-106 and Event II-101 which was the last strike flight on the target. There were EC-121 aircraft orbiting in the vicinity of 20°N/107°E and 20°N/103°E. Also in the area were EB-66B and C aircraft orbiting in the vicinity of 22°10'N/105°20'E/21°15'N/104°25'E. Navy aircraft also had a strike in the vicinity of JCS 19.00.

2. MISSION ROUTE

BLUE flight departed Korat and proceeded along a route similar to that described in Event II-99.

10. AIRCREW COMMENTS

Experience

<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
2500	150	About 20

11. DATA SOURCES

Project Interview: BLUE 4, 15 February 1967

Messages: None

12. NARRATIVE DESCRIPTION

BLUE Flight was egressing at 24,000 ft altitude 510 KTAS. BLUE 4 sighted two MIG-21s (recognized because of their silver color and delta wing) at 7 o'clock high. The MIGs were 5 miles away and about 10,000 ft above BLUE Flight at location 21°N/105°E. The MIGs closed on the flight until they were at a range of about one mile at location 20°30'N/104°35'E, at which time the MIGs broke off and were lost from view.

SECRET

SECRET

Event II-107

Aircraft Involved: Four F-105Ds vs two MIG-17s
and two MIG-21s

Result: No damage

Vicinity of Encounter: 21°25'N/105°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 December 1966/1557H

Four F-105Ds (BLUE flight) were on a strike mission against JCS 51.10 (21°16'00"N/105°50'24"E). The first part of the strike force was from Korat and preceded the force from Takhli to the target in a "gaggle" with the five strike flights in a diamond formation. (Events II-107, -113, -114, -115, -116) The force from Takhli followed in a trail formation with the flights about two minutes apart. This force was led by a flak suppression flight, Event II-108 (TOT 0800Z), followed by the flights in Event II-112, Event II-110 (dropped at 0805Z), Event II-111 (TOT 0806Z) and Event II-109 (TOT 0808Z).

There were two IRON HAND flights (one each for Korat and Takhli) in the area, but no CAP flights. The IRON HAND flights did not encounter MIGs. (It is assumed that the supporting B-66 and B1G EYE aircraft were on station although specific OPREP reference was not available.)

2. MISSION ROUTE

Departed Korat refueling en route to "Y" in the Red River then down Thud Ridge to the target. Return by reverse route. The mission route was similar to the Takhli flight route. Refueling was on Green Anchor.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

6 750-lb bombs

1 SIDEWINDER (AIM-9B) on B-1, 2 and 3

1 QRC-160

2 450-gal droptanks

MIG-17 and 21 MIG 1, 2, 3, 4

Silver color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered clouds with tops estimated 8,000 ft. Visibility 3 to 5 miles in low altitude haze with good visibility at altitude.

Altitude: 14,000 ft

Heading: 135°

Speed: 540 kts G.S.

Fuel State: Unknown

Flight Formation: Finger tip with element on left side 1,000 to 1,500 feet out. BLUE flight trailing one mile and to the left of lead flight (Event II-113).

5. INITIAL DETECTION

Had received warnings of MIGs in the area. BLUE flight was in straight and level flight when BLUE 3 called MIGs at 1 o'clock, low. BLUE 3 estimated them to be 5,000 feet low, climbing and starting to turn in behind BLUE flight. When first seen, the MIGs were at a range of 4 to 5 miles. The four MIGs were in two elements.

6. ACTION INITIATED

BLUE 1 looked and saw MIGs at 3 o'clock low, range 6,000-7,000 feet starting to turn in behind and called BLUE flight to jettison external stores and break.¹ BLUE 1, 2, and 4 jettisoned while BLUE 3 elected to retain all stores. BLUE 1 broke down right and monitored MIG 1 and 2 (MIG-17s).² BLUE 3 broke down right and probably monitored MIG 3 and 4 (MIG-21s). BLUE 2 trailed BLUE 1 as BLUE 4 trailed BLUE 3.

¹Bombs dropped at 1557H.

²The OPREP sources identify these as MIG-21s. B-3 was only certain that 2 (MIG 3, 4) were 21's, while B-1 was certain that MIG-17s and 2 were MIG-17s due to high tail.

SECRET

7. SITUATION DEVELOPMENT

BLUE flight continued the hard diving turn 5 1/2 to 6g and continued it for about 180°-200°. During the turn BLUE 1 and 2 forced MIG 1 and 2 to overshoot from 3 o'clock to the 10 o'clock high position. BLUE 3 and 4 forced MIG 3 and 4 to overshoot behind them from 5 o'clock to the 6 o'clock position, but lost sight of the MIGs as they passed to 6 o'clock at 4,000 ft range. BLUE 1 and 2 turned left to position behind MIG 1 and 2 when BLUE 1 spotted two Bogies 6 o'clock low and then BLUE 1 broke left into the Bogies, dropping the speed to 420 knots. The Bogies were identified as F-105s then BLUE 1 and 2 turned back to the right on a northwestern heading to egress up Thud Ridge, after unloading to regain speed. BLUE 3, while in the break, observed "grey streaks" (similar to 2.75 rocket smokes) pass between BLUE flight elements. BLUE 3 and 4 started to turn back up Thud Ridge after breaking for 180° when BLUE 4 on the inside of the turn observed what he thought to be a missile, pass off the right wing and explode 100 yards in front of BLUE 4. BLUE flight rejoined while egressing, and BLUE 3 expended on a secondary target, at location 21°14'N/104°21'E, and at the same time inadvertently expended his AIM-9B.

8. ORDNANCE

BLUE flight	None
MIG 1, 2	Unknown
MIG 3, 4	(Possibly missiles, rockets, guns)

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	3300	450	25	18 months as I.P. in the F-105
BLUE 2	Unknown		Est. 65	
BLUE 3	3500	1100	70	
BLUE 4	Unknown			

Comments on this Encounter

BLUE 1 MIG pilots not highly skilled. MIGs should not have overshoot.

BLUE 3 None

Comments from Overall Experience

BLUE 1 MIG warnings clutter Guard Channel and are useless. Having the AIM-9B allows more aggressiveness. Size of the sight pipper should be exact (1 or 2 mils). Switchology needs improvement. Visibility in the F-105 to the 6 o'clock area is poor. Fighter crew should be one person, pilot. Missions were stereotyped. Would like to have identified the F-105s earlier.

11. DATA SOURCES

Project Interviews: BLUE 1 (15 February 1967), BLUE 3 (16 February 1967).Messages, Reports: 7AF DAI-014 0192248Z December 1966 DIO 31041 December 1966
388 TFW KORAT OPREP 3 191411Z December 1966 DOI 04720
December 1966

12. NARRATIVE DESCRIPTION

(See items 5, 6, 7)

SECRET

Event II-108

Aircraft Involved: Four F-105s vs one MIG-21C
and four MIG-?

Result: Sightings only

Vicinity of Encounter: 21°16'N/105°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 December 1966/1600H

Four F-105Ds (BLUE Flight) were on a strike mission against JCS 51.10 (21°16'00"N/105°50'24"E). The first part of the strike force was from Korat and preceded the force from Takhli to the target in a "gaggle" with the five strike flights in a diamond formation. (Events II-113, -107, -116, -115, -114). The force from Takhli followed in a trail formation with the flights about two minutes apart. The force was led by a flak suppression flight, Event II-108 (TOT 0800Z) followed by the flights in Event II-112, Event II-108, (dropped at 0805Z) Event II-111 (TOT 0806Z) and Event II-109 (TOT 0808Z).

There were two IRON HAND flights (one each for Korat and Takhli) in the area, but no CAP flights. The IRON HAND flights did not encounter MIGs. (It is assumed that the supporting B-66 and BIG EYE aircraft were on station although specific OPREP reference was not available.)

2. MISSION ROUTE

The mission route for all aircraft was Takhli direct to Red Anchor extended, direct to 20°28'N/103°43'E, at 15,000 ft; direct to 21°30'N/105°40'E at 15,000 ft; direct to 21°32'N/105°27'E at 6,500 ft; direct to the target at 4,000 to 8,000 ft. Egress was the reverse route, at 6,000 to the Red River then at 30,000 to White Anchor post-strike refueling.

A total of 18 MIGs were sighted by all flights.

Ingress was on the SW side of Thud Ridge and roll in was on a generally northerly direction.

3. AIRCRAFT CONFIGURATION

F-105 BLUE 1, 3

2 - 450-gal wing tanks
4 - CBU-24s
1 - M-61 gun (1,029 rounds 20mm)
1 - QRC 160 POD
1 - AIM-9B
1 MIG-21C Unknown
4 MIG-? Unknown

BLUE 2, 4

2 - 450-gal tank
CBU-24s
M-61 gun 20mm
1 - QRC 160 POD

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken cloud layer at about 3,500 ft.

Altitude, head, airspeed, and flight formation unknown.

5. INITIAL DETECTION

Two sightings were reported. One was a single MIG-21C below the flight and the other was a flight of four MIGs above the clouds at 8,000 to 10,000 ft.

6. ACTION INITIATED

No action was initiated to attack any of the MIGs sighted.

7. SITUATION DEVELOPED

The MIG-21 turned into the flight but did not engage.

8. ORDNANCE

None

9. EQUIPMENT PROBLEMS

Unknown.

10. AIRCREW COMMENTS

Comments of overall Experience:

BLUE 2 says weather helps SAMs since if you are close to clouds and cannot move fast enough, MIGs can also pop through deck and pop right back under GCI control.

11. DATA SOURCE

SECRET

SECRET

Event II-108

11. DATA SOURCE

Project Interviews:

BLUE 2 (16 Mar 67)

Messages, Reports:

7AF OPREP-3 191113Z Dec 66 DOCC 28235
7AF 192248Z Dec 66 DIO 31041

12. NARRATIVE DESCRIPTION

BLUE Flight dropped their CBUs on the target (areas C, A, 3, 2 and surrounding) at 1600H which was defended by very light, inaccurate AAA. During the popup at the target, BLUE Flight saw MIG-17s on the ground at Phuc Yen. Also during popup to the target one MIG-21C was seen below. The MIG-21 turned into BLUE Flight but did not engage. On egress from the area, the flight saw four MIGs of unknown type above clouds at 8 to 10,000 ft. The flight was below the clouds and egressed the area. No engagements, only MIG sightings.

SECRET

SECRET

Event II-109

Aircraft Involved: Four F-105Ds vs four MIG-?
Results: Sighting only
Vicinity: 21°32'N/105°23'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 December 1966/1605H

Four F-105Ds (BLUE Flight) were on a strike mission against JCS 51.10 (21°16'00"N/105°50'24"E). The first part of the strike force was from Korat and preceded the force from Takhlī to the target in a "gaggle" with the five strike flights in diamond formation. (Events II-113, -107, -116, -115, -114) The force from Takhlī followed in a trail formation with the flights about two minutes apart. The force was led by a flak suppression flight, Event II-108, (TOT 0800Z) followed by the flights in Event II-112, Event II-110, (dropped at 0805Z), Event II-111 (TOT 0806Z), and Event II-109 (TOT 0808Z).

There were two IRON HAND flights (one each for Korat and Takhlī) in the area, but no CAP flights. The IRON HAND flights did not encounter MIGs. (It is assumed that the supporting E-66 and Big Eye aircraft were on station although specific OPREP reference was not available).

2. MISSION ROUTE

The mission route was from Takhlī (take off 1415H direct to Red Anchor extended, direct to 20°28'N/103°43'E at 15,000 feet; direct to 21°30'N/105°40'E at 15,000 feet; direct to 21°32'N/105°27'E at 6,500 feet; direct to the target at 4,000 to 8,000 feet. Ingress was on the SW side of Thud Ridge and roll-in was on a generally northerly heading. Egress was the reverse route at 6,000 ft altitude to the Red River then at 30,000 ft to White Anchor post-strike refueling.

3. AIRCRAFT CONFIGURATION

F-105 BLUE 1, 3

6 - 750-lb bombs
2 - 450-gal tanks
1 - gun (M-61)
1 - QRC-160 pod
1 - AIM-9B

BLUE 2, 4

6 - 750-lb bombs
2 - 450-gal tanks
1 - M-61 cannon
1 - QRC-160 pod

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken clouds at 3,500 feet, haze,
Altitude: Unknown
Heading: Unknown
Speed: Unknown
Fuel: Unknown
Formation: Unknown

5. INITIAL DETECTION

On ingress BLUE Flight saw four MIGs in two elements of two. The MIGs in the vicinity of 21°42'N/105°32'E were at 16,000 feet heading 320°. Type identification was not made due to distance.

6. ACTION INITIATED

BLUE Flight pressed on and dropped on the target, at 1680Z. The MIGs made no move toward the flight.

7. SITUATION DEVELOPED

The flight saw no flak, and egressed without further incident.

11. DATA SOURCE

Messages, Reports:

355TPW 191113Z Dec 66 OPREP-3 DOCC 28235
7AF 192248Z Dec 66 DIO 31041

**COPY AVAILABLE TO DBC DOES NOT
PERMIT FULLY LEGIBLE PRODUCTION**

SECRET

SECRET

Event II-109

12. DESCRIPTIVE NARRATIVE

BLUE Flight was egressing area at 21°32'N/105°23'E where they saw four MIGs in two elements at 16,000 ft heading 320° and climbing. MIGs were at 21°32'N/105°23'E and were at such a distance that model type was undetermined. No engagement attempted.

SECRET

SECRET

Event II-110

Aircraft Involved: Four F-105Ds vs six MIG-17s

Results: No damage

Vicinity: 21°25'00"N/105°41'10"E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 December 1966/1603H

Four F-105Ds (BLUE Flight) were on a strike mission against JCS 51.10 (21°16'00"N/105°50'24"E). The first part of the strike force was from Korat and preceded the force from Takhlī to the target in a "gaggle" with the five strike flights in a diamond formation. (Events II-113, -107, -116, -115, -114.) The force from Takhlī followed in a trail formation with the flights about two minutes apart. The force was led by a flak suppression flight, Event II-108 (TOT 0800Z) followed by the flights in Event II-112, Event II-110 (dropped at 0805Z), Event II-111 (TOT 0806Z), and Event II-109 (TOT 0808Z).

There were two IRON HAND flights (one each for Korat and Takhlī) in the area, but no CAP flights. The IRON HAND flights did not encounter MIGs. (It is assumed that the supporting B-66 and BIG EYE aircraft were on station although specific OPREP reference was not available.)

2. MISSION ROUTE

The mission route was from Takhlī direct to Red Anchor extended, direct to 20°28'N/103°43'E at 15,000 feet; direct to 21°32'N/105°27'E at 6500 feet; direct to the target at 4,000 to 8,000 feet. Ingress was on the southwest side of Thud Ridge and roll-in was on a generally northerly heading. Egress was the reverse route at 6,000 feet altitude to the Red River then at 3,000 feet to White Anchor Post-strike refueling.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 3

6 - 750 lb bombs
2 - 450 gal tanks
1 gun (20mm)
1 QRC-160 pod
1 AIM-9B
TACAN in rec only, radar off

F-105D BLUE 2, 4

6 - 500 lb bombs
2 - 450 gal tanks
1 - M-61 (20mm)
1 - QRC-160 pod
1 - Camera pod (BLUE 2 only)

MIGs

Silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clouds at 800 feet, scattered 4,000 to 6,000, broken 5 miles in haze.

BLUE Flight

Altitude: 1500 feet AGL (approx. 3500 feet indicated)
Heading: southerly
Speed: 550 kt
Fuel State: 9000 lb approx., external tanks empty

5. INITIAL DETECTION

Initial detection was made by BLUE 4 at his 11 o'clock position, level two miles out. Warnings by BIG EYE of MIGs being all over the area were given throughout the flight. MIGs were heading northerly approximately 180° to BLUE Flight. They were identified as MIGs initially by the silver color. Positive ID as MIG-17 occurred as the MIGs rolled up to turn in behind BLUE Flight.

6. ACTION INITIATED

BLUE Flight had already dropped its tanks earlier. When MIGs turned into flight at 1 1/2 miles from BLUE 4 at BLUE 4's 8:30 o'clock position, BLUE Flight engaged afterburner and accelerated away.

7. SITUATION DEVELOPMENT

None.

8. ORDNANCE

None.

9. EQUIPMENT PROBLEMS

None.

SECRET

375

10. AIRCREW COMMENTS

<u>Experience</u>	<u>Total Hours</u>	<u>Total F-105</u>	<u>Missions</u>
BLUE 2	3000	270	61
BLUE 4	4000	375	17

Comments on this Encounter

BLUE 2: Never saw them turn into flight. Would have seen them even if they had been camouflaged. Didn't see any external stores. Just noticed a plain Red Star on the aircraft. Didn't notice any afterburner.

BLUE 4: When they went afterburner, he didn't worry about IR missiles because MIGs were too far back. No MIGCAP in area. Only saw two MIGs coming after flight. Even if MIGs camouflaged, he still would have seen them as soon as we did, maybe sooner. No indication of GCI control. MIGs move in without wingman falling out. Didn't see any markings on MIGs.

Comments from Overall Experience

BLUE 2: Rather than split the flight and jettison their bombs and get into a turning contest, they just kept right on going. Training was not adequate for the engagement. Never had the opportunity to do visual laydown or radar deliveries. With more training could get better at dive bombing. Enough information displayed to use guns. Believe in less automation in jettisoning equipment because there are times when one wishes to keep things on the aircraft. Feels he doesn't have to throw very many switches. Had no prior knowledge of enemy weapon system capability and learned most of it from older heads. Assesses enemy pilot's capabilities by saying they are undertrained. Are getting more aggressive though. Once we jettison our ordnance, the mission is shot and MIG accomplishes his objective.

BLUE 4: Generally with a MIG there won't be a SAM day; not a hard and fast rule though. It is possible that tanks could hit slab and cause control problems. Good idea to put charges in tanks, so when they come off, they would explode and give an enemy something to think about. Sufficient information available to use gun. Usually cages his sight when he uses gun. Would rather use a depressed sight. When carrying a GAR-8 (AIM-9) bombs come first, then after leaving target he sets up for air-to-air. At low altitude radar is not the answer to firing the gun. Can't see in a 30° cone behind aircraft - mirrors help some. The only answer to the 6 o'clock coverage is you cover the other element, the other element covers you.

11. DATA SOURCES

Project Interviews: BLUE 2, 4 Feb 67; BLUE 4, 8 Feb 67

Messages, Reports:

7AF OPREP-3 19111BZ Dec 66 DOCC 28235
355TFW OPREP-4 191022Z Dec 66 DOI 5421
7AF 192248Z Dec 66 DIO 31041

12. NARRATIVE DESCRIPTION

While inbound to target, BLUE 4 observed a flight of four shiny silver MIGs at 11 o'clock two miles low altitude with the flight. One more MIG 2000 feet higher was ahead of this flight of MIGs, all of which were in trail with an outbound flight of F-105s. The MIGs were falling behind as the F-105s were doing about 600 knots. BLUE 4 observed two MIG-17s out of the flight of four turn into flight as the MIGs passed his 8:30 o'clock position approximately 1 1/2 miles out. The MIGs were co-altitude. The MIGs were lost from view as they passed to 6 o'clock. BLUE 2 got a glimpse of two MIGs before they passed out of his vision. BLUE Flight had already jettisoned their tanks so all they did was light afterburner and head straight to the target at 1500 feet. They dropped their ordnance on the target in area B-2 at 0805Z and jettisoned. BLUE Flight saw no MIGs while outbound.

SECRET

Event II-111

Aircraft Involved: Four F-105Ds vs four MIG-21s

Result: Sighting only

Vicinity of Encounter: 21°30'N/105°15'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 December 1966/1600H

Four F-105Ds (BLUE flight) were on a strike mission against JCS 51.10 (21°16'00"N/105°50'24"E). The first part of the strike force was from Korat and proceeded the force from Takhl1 to the target in a "gaggle" with the five strike flights in a diamond formation. (Events II-113, -107, -116, -115, -114). The force from Takhl1 followed in a trail formation with the flights about two minutes apart. The force was led by a flak suppression flight, Event II-108 (TOT 0800Z) followed by the flights in Event II-112, Event II-110 (dropped at 0805Z), Event II-111 (TOT 0806Z), and Event II-109 (TOT 0808Z).

There were two IRON HAND flights (one each for Korat and Takhl1) in the area, but no CAP flights. The IRON HAND flights did not encounter MIGs. (It is assumed that the supporting B-66 and BIG EYE aircraft were on station although specific OPREP reference was not available.)

2. MISSION ROUTE

The mission route was from Takhl1 (take off 0615Z) direct to Red Anchor extended, direct to 20°28'N/103°43'E at 15,000 feet; direct to 21°30'N/105°40'E at 15,000 feet; direct to 21°32'N/105°27'E at 6,500 feet; direct to the target at 4,000 to 8,000 feet. Ingress was on the SW side of Thud Ridge and roll in was on a generally northerly heading. Egress was the reverse route at 6,000 feet altitude to the Red River then at 30,000 feet to White Anchor post strike refueling.

3. AIRCRAFT CONFIGURATION

BLUE (1, 3)	BLUE (2, 4)
6 750-lb bombs	6 750-lb bombs
2 450-gal tanks	2 450-gal tanks
1 QRC-160 pod	1 QRC-160 pod
1 AIM-9B	TACAN receive only standby on radar and IFF
MIG-21	
Silver	

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken clouds at about 3,500 feet haze.

BLUE 1, 2, 3, 4

Altitude: 3,000 ft AGL (6,000-7,000 ft indicated)
Heading: 135°
Speed: 500 kts
Fuel State: 500-700 lbs in external tanks
Formation: Unknown -- probably in pod formation

5. INITIAL DETECTION

BLUE flight heard calls from BIG EYE and from the preceding flights who saw MIGs. BLUE 4 and another flight member saw four silver aircraft at 11 to 10 o'clock, range 5 miles or less. The MIGs were at 10,000 ft altitude and were on an opposite heading to the flight. The MIGs were spotted by the silver color shining in the sun. BLUE 1 identified them as MIG-21s. The MIGs were in two elements with the second about one mile in trail, and 2,000 feet higher than the lead.

6. ACTION INITIATED

BLUE flight continued on past the MIGs.

7. SITUATION DEVELOPMENT

As the MIGs passed to 9 o'clock 4 to 5 miles out, the first, and then the second, MIG started to turn in towards the flight. BLUE 1 then called to jettison bombs and engage the afterburner. BLUE flight accelerated to 550-575 knots and went down into the haze at 1,500-1,800 feet AGL, the MIGs were lost from view. As the flight popped up over Phuc Yen, BLUE 3 called that MIGs were taking off under BLUE flight. Although one was 1,500 feet under BLUE 4 the MIG turned away and was not seen again.

8. ORDNANCE

None.

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9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

BLUE 2	Total unknown	F-105	Mission
BLUE 4	1,200	675	13

Comments on this encounter: Did not like rear visibility since MIGs were lost from view easily when they went behind.

11. DATA SOURCES

Interview: BLUE 4 (4 February 1967), BLUE 2 (4 February 1967).

Messages: 355TFW 191113Z December 1966 OPREP-3 DOCC 28235
7th AF 192248Z December 1966 DIO 31941

12. NARRATIVE

See Items 5, 6, and 7.

SECRET

Event II-112

Aircraft Involved: Four F-105s vs two MIG-17s
and two MIGs (type unknown)

Results: No damage

Vicinity: 21°24'N/105°39'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 December 1966/1603H

Four F-105Ds (BLUE flight) were on a strike mission against JCS 51.10 (21°16'00"N/105°50'24"E). The first part of the strike force was from Korat and proceeded the force from Takhli to the target in a "gaggle" with the five strike flights in a diamond formation. (Events II-113, -107, -116, -115, -114). The force from Takhli followed in a trail formation with the flights about two minutes apart. The force was led by a flak suppression flight, Event II-108 (TOT 0800Z) followed by the flights in Event II-112, Event II-110 (dropped at 0805Z), Event II-111 (TOT 0806Z) and Event II-109 (TOT 0808Z).

There were two IRON HAND flights (one each for Korat and Takhli) in the area, but no CAP flights. The IRON HAND flights did not encounter MIGs. (It is assumed that the supporting B-66 and BIG EYE aircraft were on station although specific OPREP reference was not available.)

2. MISSION ROUTE

The mission route was from Takhli direct to Red Anchor extended, direct to 20°28'N/103°43'E at 15,000 feet; direct to 21°30'N/105°E at 15,000 feet; direct to 21°32'N/105°27'E at 6,500 feet; direct to the target at 4,000 to 8,000 feet. Egress was the reverse route, at 6,000 feet to Red River then at 30,000 feet to White Anchor post strike refueling. Ingress was on the southwest side of Thud Ridge and roll in to the target was made on a northerly heading.

3. AIRCRAFT CONFIGURATIONS

BLUE 1 and 3	BLUE 2 and 4
6 750-lb bombs	6 750-lb bombs
2 450-gal tanks	2 450-gal tanks
1 QRC-160	1 QRC-160
1 AM 9B	
camouflage	
MIGs	
Silver color	

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered to clear, haze up to 5000 ft; visibility 3 to 5 miles.

	BLUE	MIGs
Altitude:	8,000 ft	about 5,000 ft
Heading:	145°	about 325°
Speed:	540 kts	Unknown

5. INITIAL DETECTION

At approximately 1603H, when BLUE flight was at 21°24'N/105°39'E, inbound BLUE 2 saw two MIGs (type not known) at 12:30 o'clock low pass under BLUE flight as BLUE flight proceeded down Thud Ridge toward the target. The MIGs were 2,000 feet under the flight, and were following a flight of F-105s.

6. ACTION INITIATED

BLUE 2 called MIGs and received a reply from the flight, and BLUE flight continued to the target.

7. SITUATION DEVELOPMENT

The flight proceeded on the bomb run. Within 2 miles of the target, as BLUE flight started a pop-up, two MIG-17s (BLUE 4 identified them as MIG-19s) were seen orbiting the target. The MIGs were about 4,000 feet above and 2,000-3,000 feet out. BLUE 4 recognized it first as a MIG due to the silver color. The tentative identification was made later by referring to photographs.

The MIGs made a feint toward BLUE flight but did not follow. BLUE flight continued on the bomb run and was near supersonic speed as they left the target and exited up the NE side of Thud Ridge. During roll in on the target one SAM was seen one mile south on an apparent ballistic trajectory, heading west.

SECRET

8. ORDNANCE

None.

9. EQUIPMENT PROBLEMS

None mentioned.

10. AIRCREW COMMENTS

BLUE 3, 70th mission, 300 hours, F-105.

11. DATA SOURCES

Project interviews: BLUE 3 (6 February 1967) and BLUE 4 (5 February 1967).

Messages, Reports: 7AF 192248Z December 1966 DIO 31041

12. NARRATIVE DESCRIPTION

None.

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Event II-113

Aircraft Involved: Four F-105Ds vs Two MIG-21s

Result: No damage

Vicinity of Encounter: 21°25'N/105°49'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 December 1966/1549H

Four F-105Ds (BLUE Flight) were on a strike mission against JCS 51.10 (21°16'00"N/105°50'24"E). The first part of the strike force was from Korat and preceded the force from Takhli to the target in a "gaggle" with the five strike flights in a diamond formation. (Events II-113, -107, -116, -115, -114). The force from Takhli followed in a trail formation with the flights about two minutes apart. The force was led by a flak suppression flight, Event II-108 (TOT 0800Z) followed by the flights in Event II-112, Event II-110, (dropped at 0805Z) Event II-111 (TOT 0806Z) and Event II-109 (TOT 0808Z).

There were two IRON HAND flights (one each for Korat and Takhli) in the area, but no CAP flights. The IRON HAND flights did not encounter MIGs. (It is assumed that the supporting B-66 and Big Eye aircraft were on station although specific OPREP reference was not available).

2. MISSION ROUTE

Departed Korat, refueling enroute to "Y" in the Red River, then down "Thud Ridge" to the target. Return by reverse route. The route was approximately the same as that of the Takhli flights.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

4 - CBU-24s
1 - SIDEWINDER (AIM-9B)
1 - QRC-160 pod
2 - 450-gal wing tanks
IFF and radar standby
TACAN - Receive only
Doppler - on

MIG-21 MIG 1, 2

Silver (no markings observed)

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Estimated 2/10 coverage with tops up to 8000 ft. Visibility 5 to 7 miles above 8000 ft.

	BLUE			
	1	2	3	4
Altitude:	-- 17,000 ft-----			
Heading:	----- 140°-----			
Speed:	----- 520 kt---			
Fuel State:	Unknown			
Flight Formation:	element on left side - almost line abreast			

5. INITIAL DETECTION

Had received warnings of MIGs in the area. Flight was in straight and level flight when BLUE 1 spotted two MIG-21s at 1 o'clock level, about 1549H. MIGs were at 17,000 ft, heading 320° and were about 5 miles away and offset 4-5 miles away. MIGs were in element with wingman, approximately 1000 feet to the outside. The MIGs were immediately identified due to color and then by the wing planform.

6. ACTION INITIATED

BLUE Flight observed MIGs jettison tanks and turn right when passing 3 o'clock position. MIGs turned thru 5 into 6 o'clock position as BLUE Flight started a right turn, then broke hard right, descending as BLUE 1 called to jettison everything and break.

7. SITUATION DEVELOPMENT

After approximately 180° of turn MIGs were met head-on and observed to be reversing to the left. BLUE Flight had selected afterburner and descended to 6000 ft altitude for separation as contact was lost. At 21°55'N/104°50'E during egress, BLUE Flight was climbing thru 17,000 feet heading 272°, and 520 kt when BLUE 4 spotted what he thought to be a MIG-19¹ at 21°55'N/104°38'E, altitude 3 to 4000 AGL, (5000 to 8000 ft true altitude)

¹MSG 192248Z and 191413Z cites it as MIG-17.

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Event II-113

heading approximately 210° making gentle left and right turns. No other flight members could confirm this sighting.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 3	6200	120	Approx. 20	Interceptor background
BLUE 4	2800	Est. 150	Approx. 35	Bomber background

Comments on this Encounter

BLUE 3 - MIGs appeared to be from Phuc Yen and under GCI control

BLUE 4 - Did not think a MIG-21 could turn so rapidly. Felt that the MIGs he saw were MIG 3 and 4.

11. DATA SOURCES

Project Interviews: BLUE 3, 16 Feb 67; BLUE 4, 18 Feb 67.

Messages, Reports: 7AF DAI-014 192248Z Dec 66 DIO 31041 Dec 66
388TFW Korat OPREP-3 191413 Dec 66 DOI 04721

12. NARRATIVE DESCRIPTION

BLUE Flight was one of five strike flights ingressing down Thud Ridge to the target at the end of the ridge line. MIG 1 and 2 were spotted by BLUE 1 at his 1 o'clock position, level heading opposite to BLUE Flight. BLUE 1 called out the MIGs and had his flight watch them as MIG 1 and 2 passed to the right then started turning in behind BLUE Flight. BLUE 3 called the MIGs passing 5 o'clock turning to 6 o'clock as BLUE 1 directed his flight to jettison external stores and break right. Ordnance was jettisoned, armed, at 1549H in the vicinity of 21°20'N/105°48'E. BLUE Flight started in a level right hand turn then descended to meet MIG 1 and 2 head on, about 500 feet away. The break was terminated at 6000 ft as BLUE Flight egressed up Thud Ridge in afterburner, losing sight of MIG 1 and 2.

In the turn BLUE 4 attempted to set up his sight but was unable to do so while jettisoning his stores at the same time. The first MIG-21 went past in an almost head-on pass, with the MIG attempting to pull lead. BLUE 3 then started to pull away. At this time the second MIG-21 came by 500 to 600 feet away from BLUE 4, canopy to canopy. BLUE 4, at this time, was in a turn at 500 knots. Although the second MIG passed head-on, the MIG turned as BLUE 4 watched over his right shoulder, and saw the intake lip as the MIG turned very tightly behind BLUE 4. BLUE 4 accelerated away and lost the MIG.

At 21°55'N/104°50'E climbing thru 17,000 ft heading 272°, 520 kt, BLUE 4 saw what he thought to be a MIG-19 10,000 ft low at 12 o'clock making gentle turns in a southwesterly direction then turn southeast down the Red River. No other flight members could confirm this sighting.

BLUE 4 stated that during egress some flight called that a flight of four MIG-17s were about 5 miles to the north of BLUE Flight, tracking BLUE Flight and at the same altitude as BLUE Flight. These MIGs made no pass at BLUE Flight nor were they seen by any member of BLUE Flight.

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RED BARON EVENT II-113 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	Heading SE 520 kt See 2 MIG-21s at about 4 mi Alt 17,000 ft	Tried to maintain integrity. Just watched MIGs while pressing in	Two friendly flights of 4 each close to MIGs There were two other strike flights astern	B3 and others called out MIGs	Opposite course, 2 o'clock, low; climbing at high rate of speed about 2000 ft lower than F-105s	One of the first big formation gaggles. (5 flights)
T ₁	" Continued		B3 called turn. Lead said keep your eyes on them. B3 called MIGs in B3s 3 o'clock position	MIGs turned 180° to right and ended up on BLUE's 5 o'clock Co-altitude		
T ₂	Same altitude	Started turn right and dropped tanks and bombs. Went to afterburners. Made hard right 4 g descending turn. Lost sight of MIGs for a while. Attempted to pull up	Lead called break fight. Jettison bombs and tanks.	Closing at 5 o'clock in trail formation. Remain co-altitude		
T ₃	B3 and B4 sighted MIGs again "canopy-to-canopy". Both still turning right BLUE elements split diving. B3 and B4 about 14,000 ft			Garbage on the radio	Climbing attitude. MIGs apparently reverse course after passing canopy-to-canopy. Climbing and turned in vertical.	Only one MIG seen 3-5 ft on opposite heading. Lost sight of him again when MIG went up over B3.

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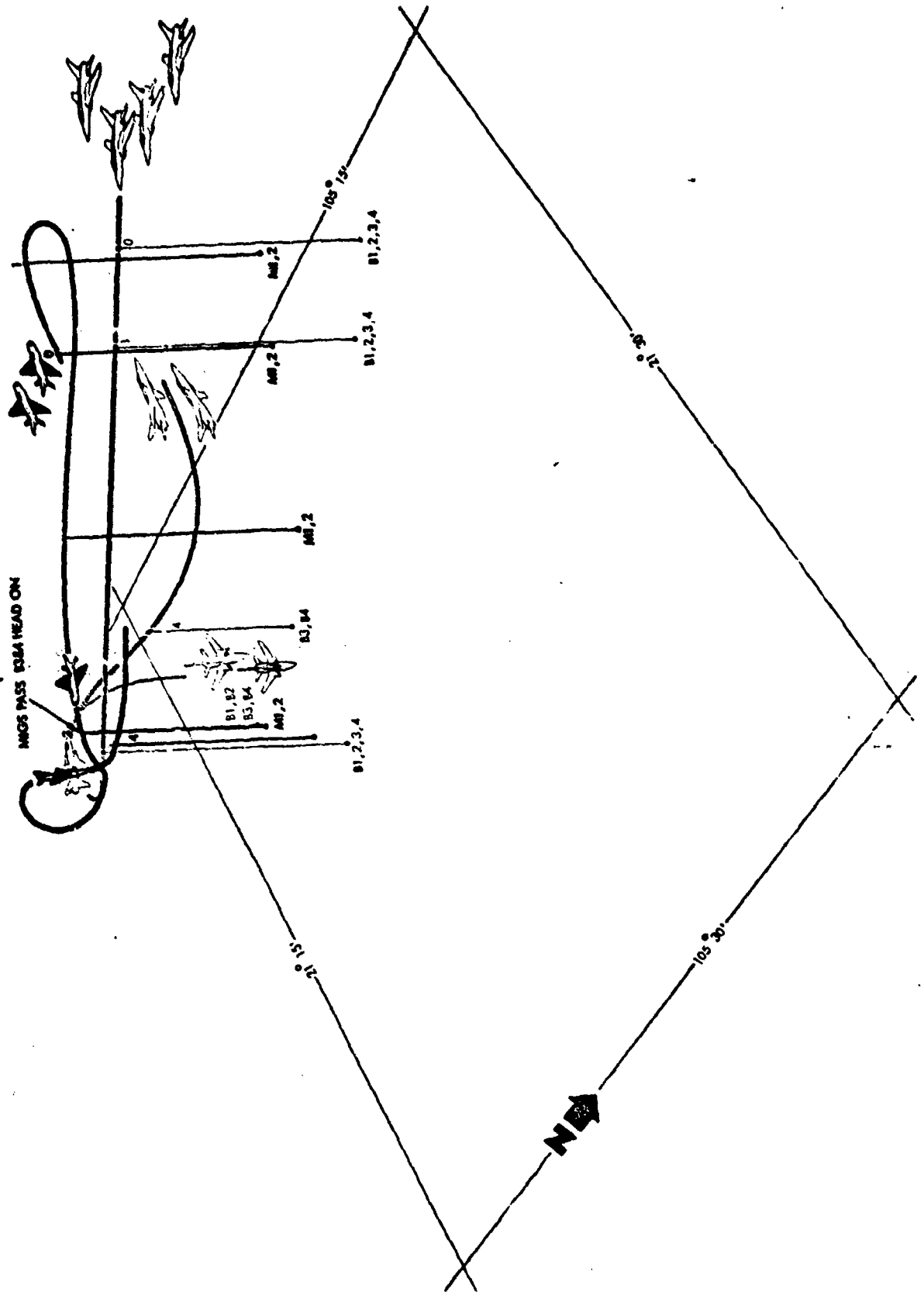
RED BARON EVENT II-113 SUMMARY

Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T 4	Pulling up. Pick up MIG 4 o'clock high, 5000 ft, 2 miles away in good position. B3 and B4 at 10,000 ft.	Tightening turn and pulling up, then he saw MIGs higher and getting good position. F-105 lost air speed. Broke hard left and down. Stayed in afterburner accelerating rapidly. Disengaged with speed.		This flight did not communicate until trying to reform on way out.	Had speed advantage getting in good position.	Objective seemed to break up formation and cause jettison. Then they were just harassing. QAC worked through out.
						Lead three flights all jettisoned. No F4 CAP this day. Last two flights got to target.

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Event II-113



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Event II-114

Aircraft Involved: Four F-105s vs 14 MIG-17s

Result: No damage

Vicinity of Encounter: 21°47'N/105°18'E to
21°25'N/105°48'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 December 1966/1545H

Four F-105Ds (BLUE Flight) were on a strike mission against JCS 51.10 (21°16'00"N/105°50'24"E). The first part of the strike force was from Korat and preceded the force from Takhlī to the target in a "gaggle" with the five strike flights in a diamond formation (Events II-113, -107, -116, -115, -114). The force from Takhlī followed in a trail formation with the flights about two minutes apart. The force was led by a flak suppression flight, Event II-108 (TOT 0800Z) followed by the flights in Event II-112, Event II-110 (dropped at 0805Z), Event II-111 (TOT 0806Z) and Event II-109 (TOT 0808Z).

There were two IRON HAND flights (one for Korat and Takhlī) in the area, but no CAP flights. The IRON HAND flights did not encounter MIGs. (It is assumed that the supporting B-66 and BIG EYE aircraft were on station although specific OPREP reference was not available.)

2. MISSION ROUTE

Korat, Thailand direct to Red Anchor extended, direct to North Station, direct to the Red River, direct to 21°54'N/105°12'E, southeast down Thud Ridge to target. Return route reverse. The flight followed the same general path as those from Takhlī.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3

6 - 750 lb bombs¹
1 - SIDEWINDER (AIM-9B)
1 - QRC-160 ECM pod
2 - 450 gal wing tanks
1029 rd 20mm ammo

BLUE 1 - Doppler operating, IFF standby, TACAN receive only

BLUE 2 - Radar and doppler off, IFF standby, and TACAN receive only

F-105 BLUE 4

6 - 750 lb bombs
1 - QRC-160 ECM pod
2 - 450 gal wing tanks
1029 rd 20mm ammo

MIG-17² MIG 1-14

Unknown
Silver color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Tops at 11,000 feet

BLUE 1, 2, 3, 4

Altitude: 12,000 feet
Heading: 130°
Speed: 540 KTAS
Fuel State: 9,000 lb

Flight Formation: Modified Fluid-Four due to QRC-160 ECM pod coverage.

5. INITIAL DETECTION

MIG warnings for the area had been called by BIG EYE on Guard Channel. Radio calls from preceding flights also confirmed that MIGs were in the area. BLUE Flight at 21°30'N/105°30'E just north of Thud Ridge sighted 2 MIG-17s at 9 o'clock low.

6. ACTION INITIATED

BLUE Flight continued on toward target.

7. SITUATION DEVELOPMENT

BLUE Flight had sufficient speed and the MIGs that attacked from 9 o'clock were too far back to present a threat, so BLUE Flight continued on course. About one-half way down the ridge, four more MIG-17s attacked from 4 o'clock, causing BLUE Flight to jettison bombs.

¹In the 24 750-lb bombs carried, 23 were general purpose and one was VT.

²Although the OPREP 191410Z states that all four members of BLUE Flight validate the number sighted, BLUE 2's interview indicates that he thought the first and last groups seen were MIG-21s.

SECRET

SECRET

Event II-114

Near the south end of Thud Ridge BLUE Flight made a 180° turn back up the ridge and egressed the target area. Another flight of four MIG-17s attacked BLUE Flight in the turn but were unable to get within gun range.

8. ORDNANCE

None expended

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

Experience:

Not available

Comments on this Encounter:

BLUE 2: The MIG warning by BIG EYE are of limited value. All BIG EYE can tell you is that the MIGs are up and in what general area, after you hear the first call, subsequent MIG calls accomplish nothing more than clutter on the radio. The F-105 high speed capability at low altitude is the greatest asset we have in the area. It gives you the option of attacking or egressing the area pretty much at will. The F-105 is not maneuverable enough to hassle with either the MIG-17 or the MIG-21. If you do not have a definite advantage in the attack you had better not attack a MIG. The M-16 gun is the best piece of equipment available for close-in air-to-air. Radar has a limited value in the operation up north, in that you have to get close enough to make a visual identification before firing.

Shortcomings: The F-105 is not maneuverable enough in a MIG encounter, also it has very poor acceleration at low speeds and will not maintain speed in a high g turn. The present AIM-9 pylon and the QRC-160 pod are high drag items at high speed-low altitude. Switch setting changes when changing from a ground to air mode are too complicated and the air-to-air radar is unreliable in a fast-moving hassle.

11. DATA SOURCES

Project Interviews: BLUE 2, 15 Feb 67

Messages, Reports:

7AF OPREP-3 DOI 04718 19140Z Dec 66
7AF DAI-DIO 31041 192248Z Dec 66

12. NARRATIVE DESCRIPTION

BLUE Flight was the last flight in the force and was trailing the preceding flights (Events II-113, 107, 116, 115) with instructions to jettison ordnance and turn into MIGs if the MIGs threatened the strike force.

BLUE Flight had just made their turn at 21°45'N/105°12'E heading 130° when two MIG-17s came from their 9 o'clock position at 3,000 ft altitude, and after a left climbing turn, rolled into their 6 o'clock. The MIGs stayed about 2-3 nmi behind and no firing was observed. BLUE Flight continued on down the ridge and lost sight of the MIGs.

Approximately one minute later, at 0746Z, BLUE 1 observed four MIG-17s at 2:30 o'clock, 5-6 nmi out heading 300°, 10,000 ft, but lost sight of them after just a few seconds. The MIGs were in the vicinity of 21°30'N/105°30'E. Approximately 30 seconds later there were four MIG-17s flying parallel to the flight at their 4 o'clock position 2-3 nmi out. The MIGs flew in finger tip formation for about two minutes and then turned into the flight; although the MIGs had good speed they were not closing rapidly. BLUE Flight jettisoned their bombs, in the vicinity of 21°30'N/105°35'E at 0749Z and turned into the MIGs. The MIGs overshot and then broke off. No firing was observed.

BLUE Flight followed the rest of the strike force down the ridge and proceeded to make a left descending 180° turn, when BLUE 4 observed four MIG-17s coming head-on, from 1 o'clock high and to the right, pass over and slide into BLUE Flight's 6 o'clock position. The MIGs were at 11,000 feet altitude, heading 300°. No firing was observed and the flight completed the turn and egressed back up the ridge. The MIGs were not seen again.

SECRET

Event II-115

Aircraft Involved: Four F-105Ds vs nine MIG-17s

Result: Sightings only

Vicinity of Encounter: 21°31'N/105°35'E
and as noted

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 December 1966/1547H and as noted

Four F-105Ds (BLUE Flight) were on a strike mission against JCS 51.10 (21°16'00"N/105°50'24"E). The first part of the strike force was from Korat and preceded the force from Takhli to the target in a "gaggle" with the five strike flights in a diamond formation. (Events II-113, -107, -116, -115, -114). The force from Takhli followed in a trail formation with the flights about two minutes apart. The force was led by a flak suppression flight, Event II-108 (TOT 0800Z) followed by the flights in Event II-112, Event II-110, (dropped at 0805Z) Event II-111 (TOT 0806Z) and Event II-109 (TOT 0808Z).

There were two IRON HAND flights (one each for Korat and Takhli) in the area, but no CAP flights. The IRON HAND Flights did not encounter MIGs. (It is assumed that the supporting B-66 and Big Eye aircraft were on station although specific OPREP reference was not available).

2. MISSION ROUTE

The flight departed Korat and took what is referred to as the mandatory route. This route followed the Takhli force route which was described in Event II-99.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

- 4 - 750-lb bombs--
- 1 - SIDEWINDER (AIM-9B)
- 1 - QRC-160 ECM pod
- 2 - 450 gal external tanks

MIG-17s

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clouds 3-4,000 ft, 5/8 coverage; visibility 5 miles in haze.

<u>BLUE 1, 2, 3, 4</u>	<u>1st sighting</u>	<u>2nd sighting</u>	<u>3rd sighting</u>
<u>Altitude:</u>	16,500 ft	unknown	12,000 ft
<u>Heading:</u>	135°	285°	325°
<u>Speed:</u>	520 KTAS	unknown	440 KTAS
<u>Fuel State:</u>	unknown	unknown	unknown
<u>Flight Formation:</u>	unknown	unknown	unknown

5. INITIAL DETECTION

Three separate sightings occurred, which are described as follows:

a. (1st sighting) BLUE Flight was inbound to the target area at 21°31'N/105°35'E. BLUE 4 spotted four MIG-17s at 3 o'clock, 14,000 ft, heading NW 1-2 mile range. Two MIGs continued NW, and the other two rolled into BLUE Flight's 6 o'clock position at 1-1/2 n mi. BLUE Flight jettisoned their tanks and made a right turn into the MIGs doing 550 kt (no afterburner). As the MIGs got in trail, BLUE reversed back to the left and observed the MIGs breaking off towards the NNW. The MIGs made no attempt to fire on BLUE Flight. BLUE Flight continued on to the target.

b. (Second sighting) At 1550H BLUE Flight was starting their roll-in on their target, heading 285° when BLUE 1 sighted two MIG-17s 1-1/4 n mi to the SE. BLUE continued the strike and lost the MIGs as they passed through a cloud layer on the dive bomb run. The MIGs were not seen again.

c. (Third sighting) During BLUE Flight's egress at 21°40'N/105°27'E, time 1555H, they observed three MIG-17s at their 9 o'clock position, 3-4 n mi away, at 3 to 4,000 ft AGL. The MIGs were on approximately the same heading as BLUE Flight, and paralleled BLUE Flight's path for 1 to 1-1/2 min. until they disappeared in the weather. No markings were seen on the MIG aircraft.

6. ACTION INITIATED

See Item No. 5.

7. SITUATION DEVELOPMENT

See Item No. 5.

SECRET

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

BLUE 4 stated that when operating the QRC-160 ECM pod, the only feature of the vector gear that remained reliable was the launch light.

10. AIRCREW COMMENTS

Experience: unknown

Comments on this Encounter: BLUE 3 commented that their flight was the last of approximately five to go into the target. Only the last two flights actually hit the target, because MIG-21s making head-on passes had forced the first flights to jettison their ordnance and abort the strike.

Comments from Overall Experience: BLUE 3 mentioned the following shortcomings on the F-105:

- a. No need for an internal bomb bay as all ordnance could be carried on an external station.
- b. If bomb bay is retained, then the several thousand pound plunger should be removed. This would either reduce weight, or space could be used to enlarge the internal fuel tanks.
- c. He feels that all aircraft should carry an AIM-9 type missile.
- d. Effective range of the guns should be increased.
- e. He feels the aircraft control system is too stiff and heavy, and also that aircraft is difficult to trim.
- f. Feels that "toss bomb computer" is an excellent piece of equipment, but that it should be designed for greater accuracy.
- g. He would like to see a combination doppler and inertial avionics system installed in the aircraft.

BLUE 4 stated that most people fly with the X-band pickup of the vector gear turned off, because radar from our own aircraft causes excessive chatter and blocks out other returns.

11. DATA SOURCES

Project Interviews: BLUE 3, 15 Feb 67 and BLUE 4, 16 Feb 67
Messages, Reports: 388TFW, OPREP-3, 191411Z Dec 66 DOI 04719
 7AF, MSG 192248Z Dec 66 DIO 31041

12. NARRATIVE DESCRIPTION

See Item No. 5 for details. Of the nine MIG-17s sighted, there were no repeats. Of the first flight of MIGs, one pilot saw only one, two pilots saw two, and one pilot saw all four. The second and third flights were seen by all members.

SECRET

Event II-116

Aircraft Involved: Four F-105Ds vs four Mig-21s

Result: No damage

Vicinity of Encounter: 21°31'N/105°41'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 19 December 1966/1545H

Four F-105Ds (BLUE Flight) were on a strike mission against JCS 51.10 (21°16'00"N/105°50'24"E). The first part of the strike force was from Korat and preceded the force from Takhli to the target in a "gaggle" with the five strike flights in a diamond formation. (Events II-113, -107, -116, -115, -114). The force from Takhli followed in a trail formation with the flights about two minutes apart. The force was led by a flak suppression flight, Event II-108 (TOT 0800Z) followed by the flights in Event II-112, Event II-110, (dropped at 0805Z) Event II-111 (TOT 0806Z) and Event II-109 (TOT 0808Z).

There were two IRON HAND flights (one each for Korat and Takhli) in the area, but no CAP flights. The IRON HAND flights did not encounter MIGs. (It is assumed that the supporting B-66 and BIG EYE aircraft were on station although specific OPREP reference was not available).

2. MISSION ROUTE

Departed Korat refueling enroute to "Y" in the Red River then down Thud Ridge to target. Return by reverse route. The route was about the same as that of the Takhli force.

3. AIRCRAFT CONFIGURATIONS

F-105D, BLUE 1, 2, 3, 4

- 6 - 750 lb bombs
- 1 - SIDEWINDER (AIM-9B)
- 1 - QRC-160
- 2 - 450 gal ECM pod drop tanks

MIG-21 MIG 1, 2, 3, 4

Silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Scattered to broken with tops of cumulus type clouds at 8,000 feet MSL.

Altitude: 10-12,000 feet MSL.

Heading: 140°

Speed: Estimated 520 kt

Flight Formation: Fourth of five flights, in a pod formation.

5. INITIAL DETECTION

Had received MIG and SAM warnings from BIG EYE and previous flights. BLUE 1 spotted 4 MIG-21s at 10 o'clock on a reciprocal heading, 4 to 5,000 ft high at approximately 1545H. The MIGs were 2 to 3 miles out. BLUE 2 did not see the MIGs until they were abreast of BLUE flight. They were identified by their silver color.

6. ACTION INITIATED

BLUE flight observed MIGs starting a descending turn behind them well out of range. The closest approach was estimated to be no closer than 2 miles.

7. SITUATION DEVELOPMENT

BLUE 1 kept his formation intact while descending and weaving through the cumulus clouds into the target area. MIGs were no longer observed to be a threat. The flight hit the target (areas C and B-1) and egressed. After leaving the target BLUE 2 at 7,000-8,000 feet and 600 kt, saw a single MIG-21 at 12 o'clock high. The MIG was in the vicinity of 21°30'N/105°40'E heading 170° at an altitude of 9-10,000 feet. The MIG made a descending Split-S and was lost from view as he moved to 6 o'clock on BLUE Flight.

8. ORDNANCE

None expended

9. EQUIPMENT PROBLEMS

None

SECRET

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	2950	1100	70	Fighter weapons school grad. SAC and ATC - 6 yr each
BLUE 2	3100	Est. 90	Est. 10	

Comments on this encounter

BLUE 1 using the cumulus clouds to lose the MIGs allowed BLUE Flight to hit the target

BLUE 2 first mission in Route Package VI-A and first MIG encounter.

Comments from Overall Experience

BLUE 1 thinks MIGs are trying to make strike flights jettison ordnance prior to the target. Utilizing the same UHF frequencies for all missions into North Vietnam allows easy interception of strike force communications. MIG and SAM warnings block out the radio frequently.

Some F-105s had trouble with the AIM-9B installation such that when the station selector was turned on to check the IR tone, the missile would fire.

BLUE 2; F-4Cs and MIG-21s look very much alike. Likes the low altitude speed capability of the F-105.

11. DATA SOURCES

Project Interviews: BLUE 1, (17 Feb 1967), BLUE 2 (17 Feb 1967)

Messages, Reports:

7AF DAI-014 192248Z Dec 66 DIO 31041 Dec 66
388TFW OPREP-3 191120Z Dec 66 DIO 04416

12. NARRATIVE DESCRIPTION

(See Items 5, 6, and 7).

SECRET

Event II-117

Aircraft Involved: Four F-105Ds vs two MIG-21s
Result: No damage
Vicinity: Unknown

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: December 1966/Unknown
Strike mission in North Vietnam

3. AIRCRAFT CONFIGURATION

BLUE 1, 2, 3 and 4
1 M-61 (full - 1,029 rounds)
1 QRC-160

MIGs

Silver in color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear BLUE 1, 2, 3, 4
Altitude: 18,000 and climbing
Heading: 240°
Speed: Unknown
Fuel State: Unknown

5. INITIAL DETECTION

BLUE flight was at 18,000 ft heading 240° after dropping their ordnance on target when BLUE 2 observed two MIG-21s at 2 o'clock position, 10 miles out, at 18,000 feet. BLUE flight had no MIG warning.

6. ACTION INITIATED

When MIGs turned and rolled out at the flight 8:30 o'clock position, BLUE flight turned into them in a left shallow turn just to keep them in sight and accelerated down and away from MIGs.

7. SITUATION DEVELOPMENT

None, no encounter.

8. ORDNANCE

None expected.

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

Experience

	<u>Total</u>	<u>F-105</u>	<u>Combat</u>
BLUE 2	1200	250	Unknown

Comments from Overall Experience

BLUE 2: Carrying just one SIDEWINDER is not really a waste of time but carrying two would increase a kill capability. Too many switches to throw when coming off a target to go to air-to-air from air-to-ground.

11. DATA SOURCE

Project Interview - BLUE 2 (16 February 1967)

12. NARRATIVE DESCRIPTION

BLUE flight en route after striking target heading 240° at 18,000 ft and climbing when BLUE 2 observed two MIGs at 2 o'clock, 10 miles distant. He called them out but BLUE 1 did not see them until they were at 4 o'clock, 4 miles. MIGs turned for a tail attack and at this point they were positively identified as MIG-21s. MIGs overshot tail attack and wound up at BLUE flights 8 to 8:30 o'clock position about 7 miles in trail. BLUE flight thus made a slight turn to the left to keep MIGs in sight and accelerated down and away. MIGs were not seen again. All aircraft returned safely to home station with no damage or engagement encountered.

SECRET

Aircraft Involved: Two F-105Ds and two F-105Fs vs two MIG-21s

Result: Sighting only

Vicinity of Encounter: 21°00'N/105°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 2 January 1967/1510H

Four F-105s were on an IRON HAND mission at an orbit between 20°00'N/105°00'E and 21°35'N/105°18'E, in support of Operation Bolo (Event I-68a,b,c).

2. MISSION ROUTE

Departed Takhli to Channel 97 then into Area V then establishing left-hand orbits in the vicinity cited above.

3. AIRCRAFT CONFIGURATIONS

F-105F, BLUE 1 and 3

- 2 - AGM-45
- 2 - AIM-9B
- 1 - 650 gal round centerline tank
- 1 - M-61 Gatling gun (1029 rounds)

F-105D, BLUE 2 and 4

- 4 - CBU-24s (centerline station)
- 2 - 450 gal wing tanks
- 2 - AGM-45s
- 1 - Gun

No QRC equipment

MIG-21s

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Overcast, 3 to 4,000 feet broken, tops at 9,000 feet.

	<u>BLUE 1, 2</u>	<u>BLUE 3, 4</u>
Altitude:	15,000 ft	18,000 ft
Heading:	270°	270°
Speed:	Unknown	Unknown
Fuel State:	Unknown	Unknown

Flight Formation:



5. INITIAL DETECTION

BLUE Flight was in a left turn passing through 330° for 270° at 15,000 ft and 18,000 ft when BLUE 3 and 4 observed two MIG-21s at 20,000 ft at 330° on a parallel course.

6. ACTION INITIATED

BLUE Flight continued to turn left, engaged afterburner and descended to 10,000 feet.

7. SITUATION DEVELOPMENT

Upon reaching 10,000 feet the flight searched for the MIGs but was unable to detect them. The flight then continued to orbit in the area without further sightings.

8. ORDNANCE

No air-to-air ordnance expended.

9. EQUIPMENT PROBLEMS

None.

SECRET

Event II-118

10. AIRCREW COMMENTS

<u>Experience</u>	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 3	Unknown	400	Approx. 21	
BLUE 2				Thought the flight could have attacked the MIGs if they had turned right instead of left.

11. DATA SOURCES

Project Interviews: BLUE 2 (16 June 67) and BLUE 3 (17 Feb 67)

Messages, Reports:

355TFW 021345Z Jan 67, PASTEL DOI 0028

12. NARRATIVE DESCRIPTION

BLUE Flight was in a racetrack orbit with BLUE 3 and 4 at 18,000 feet, 3,000 feet behind BLUE 1 and 2 who were at 15,000 feet. BLUE Flight was in a left hand turn, heading 330° to 270° when BLUE 3 and 4 observed two MIG-21s at 20,000 feet on a parallel heading. BLUE 3 called for a break to the left. The flight broke left and descended to 10,000 feet and completed two 360° turns but did not see the MIGs again. BLUE Flight continued their orbit, but did not sight any more MIGs.

SECRET

SECRET

Event II-119

Aircraft Involved: Four F-105s vs one MIG-21

Result: Sighting only

Vicinity of Encounter: 20°13'N/104°21'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 6 January 1967/1534H

Four F-105s (BLUE Flight) was on a strike mission north of Hanoi. Strike mission could not get to assigned target area due to weather.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Very bad. Actual conditions not known.

	<u>BLUE 1, 2, 3, 4</u>	<u>MIG 21</u>
<u>Altitude</u> :	16,000	22,000
<u>Heading</u> :	010°	010°
<u>Speed</u> :	450	450 (estimated)
<u>Fuel Status</u> :	Unknown	Unknown
<u>Flight Formation</u> :	Unknown	

10. AIRCREW COMMENTS

<u>Experience</u>	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 1	3600	Unknown	70

Comments on overall experience:

BLUE 1 - Considers the F-105 is the best airplane for the job of bombing N. Vietnam but not an air-to-air fighter. The F-105 can out-run anything at low altitude, which is excellent defense.

11. DATA SOURCES

Pilot Interview: BLUE 1, 17 Feb 67

Messages: 388TFW JOPREP OPREP-4 RT 022 SEA, 6 Jan 67

12. NARRATIVE DESCRIPTION

BLUE Flight was in a 360° turn. A MIG-21 was observed on left side of BLUE Flight and flew parallel to BLUE Flight at 1.5 miles distance for 3-4 minutes. MIG-21 then broke off and departed the area of BLUE Flight.

SECRET

Aircraft Involved: Four F-105s vs four MIG-21s

Result: No damage

Vicinity of Encounter: 21°44'N/104°52'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 7 January 1967/late afternoon

Four F-105s (BLUE Flight) was providing MIG cover for a strike force of F-105 aircraft operating out of Korat, T. Weather caused the strike force to divert to targets of opportunity along the Red River. BLUE Flight was heading west along with the strike force when the encounter occurred.

2. MISSION ROUTE

All aircraft in strike force departed Korat, T. Proceeded northeast to TACAN #97 and thence eastward (050° heading) to Red River, to primary target area (JCS 51.10), back to Red River (vicinity Yen Bai). Strike force egressed to post-strike refueling (Orange Anchor) and to home base.

3. AIRCRAFT CONFIGURATIONS

4 F-105s BLUE 1, 2, 3, 4

Not given, but bombs were carried by BLUE Flight.

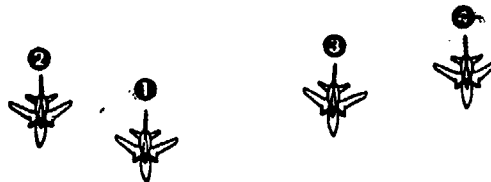
MIG-21s 1, 2, 3, 4

Not given.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken to overcast below 9,000 ft. Visibility good above clouds.

	BLUE			
	1	2	3	4
<u>Altitude:</u>	15,000 ft			
<u>Heading:</u>	in orbit vicinity Yen Bai			
<u>Speed:</u>	not given			
<u>Fuel State:</u>	not given			
<u>Flight Formation:</u>	QRC 160 formation			



1500/2000 ft horizontal separation
500 ft vertical separation

5. INITIAL DETECTION

No MIG warnings were called by ELINT aircraft. MIG-21s were first sighted by member of BLUE Flight (BLUE 3) 10 to 12 miles off to the right of BLUE Flight. MIG-21s were low approximately 10,000 ft (heading 020°, speed not given). MIGs were positively identified as they closed to within 5 miles.

6. ACTION INITIATED

BLUE Flight started a right turn to keep the MIGs in sight.

7. SITUATION DEVELOPMENT

As BLUE Flight started a right turn, the MIG-21s broke off by pulling up and started down after the IRON HAND flight but broke off all together and left the area. The MIGs were not seen again by BLUE Flight.

8. ORDNANCE

None fired by either side.

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

<u>Experience:</u>	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Total Missions</u>
BLUE 1	4,300	100	20
BLUE 3	not given	not given	80

Comments on this Encounter**BLUE 1**

F-105 can't out-maneuver MIGs.

F-105 has switch difficulty in changing from one firing mode to another.

BLUE 3

F-105 is not a turning aircraft but will destroy anything in front of it.

F-105 pilots don't see the need for MIG and SAM warnings on Guard channel. All it does is clutter up the radio.

11. DATA SOURCES

Pilot interview BLUE 1, 19 February 1967

Pilot interview BLUE 3, 18 February 1967

Pilot interview BLUE 2, 3 October 1967

12. NARRATIVE DESCRIPTION

Four MIG-21s started to attack BLUE Flight but broke off as BLUE Flight started a right turn. The MIG-21s made a half-hearted attempt to go after another flight of four F-105s that were in the same area as BLUE Flight but broke off before closing and left the area completely.

SECRET

Event II-121

Aircraft Involved: Four F-105s vs four MIG-21s

Result: No damage

Vicinity of Encounter: 21°44'N/104°52'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 7 January 1967/late afternoon.

Four F-105Ds (BLUE Flight) were the lead flight of a strike force of five flights, which had been diverted from the primary target (near Thai Nguyen) and looking for targets of opportunity along the Red River after diverting from acquired target due to weather in Route Package VI-A. BLUE Flight was the flak suppression flight. The flights had executed an in-place turn so that BLUE Flight was now at the rear of the formation.

2. MISSION ROUTE

Departed Korat, headed north to tankers for refueling, then north to TACAN #97, thence east to Thai Nguyen, back to the Red River (vicinity Yen Bai) then 210° outbound to tankers for post-strike refueling.

3. AIRCRAFT CONFIGURATIONS

F-105D BLUE 1, 2, 3, 4

4 - CBU-124 bombs (returned to base)

1 - QRC-160 pod operating

1 - SIDEWINDER AIM-9B (returned to base)

BLUE 4 IFF standby, radar in ground map, TACAN in receive only

MIG-21 1, 2

Not given

Silver in color

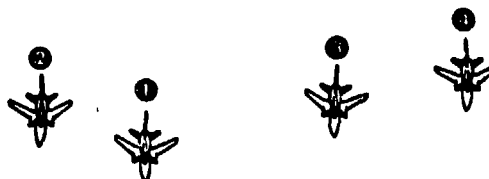
4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken undercast, top up to 9,000 ft - visibility not given.

	<u>BLUE Flight</u>	<u>MIG-21s</u>
<u>Altitude:</u>	16,000 ft	10,000 ft
<u>Heading:</u>	West	West
<u>Speed:</u>	480 kt	500 kt est.
<u>Fuel State:</u>	Not given	

Flight Formation

BLUE Flight QRC-160 formation distance between aircraft 1500 to 2000 ft apart. 500 ft vertical separation.



5. INITIAL DETECTION

BLUE 3 saw four MIG-21s (two flights of two each) coming in on BLUE Flight's 5 o'clock position and BLUE 3 called "MIGs at 5 o'clock." The MIGs were coming about 90° to BLUE Flight about 7 miles out. The MIGs were easy to see against the cloud background. BLUE 4 saw them at 7:30 o'clock.

6. ACTION INITIATED

BLUE 1 call for an in-place turn to the right.

7. SITUATION DEVELOPMENT

MIG-21s closed to 3-1/2 miles behind BLUE Flight. As BLUE Flight continued its in-place turn the MIG-21s broke off and headed north.

8. ORDNANCE

None fired by either side.

9. EQUIPMENT PROBLEMS

None reported.

SECRET

401

10. AIRCREW COMMENTSExperience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	Not given	600	80	Switchology is bad in F-105 for switching to air-to-air.
BLUE 4	Not given	150 est.	50	

11. DATA SOURCES

Interviews: BLUE 1, 14 March 1967
 BLUE 4, 7 January 1967

12. NARRATIVE DESCRIPTION

BLUE Flight (four F-105s) operating with a strike force (20 F-105s from Korat) had diverted from primary target and was orbiting in the vicinity of Yen Bai along the Red River. BLUE Flight was flying over broken to overcast clouds. BLUE 2, 3 saw four MIG-21s approaching BLUE Flight from the 7:30 o'clock position. The MIG-21s were coming in low (approx. 10,000 ft) to BLUE Flight. The MIG-21s were in elements of two in trail with the 2d element approximately one mile behind the lead element. The MIG-21s closed to 3-1/2 miles of BLUE Flight but broke off and left the area just as BLUE Flight started to turn into the MIG-21s.

BLUE 1 did not see the MIGs until they started to exit and then could not positively identify them.

SECRET

Event II-122

Aircraft Involved: Twenty F-105s vs two MIG-21s
Result: No damage
Vicinity of Encounter: 21°33'N/105°00'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 7 January 1967/0830Z

BLUE Flight was part of a 20-ship F-105 strike force operating in Package VI-A North Vietnam. BLUE Flight was the IRON HAND flight for this mission.

2. MISSION ROUTE

Departed Korat headed north to tankers for refueling continued north to TACAN station #97 then east to Red River and on to target, north of Hanoi.

3. AIRCRAFT CONFIGURATIONS

BLUE 1 and 2

2 AGM-129
2 CBU-24s
20mm ammo
1 630-gal centerline drop tank

BLUE 3 and 4

6 500-lb bombs MER plus/20mm ammo
1 SIDEWINDER AIM-9B
1 QRC-160 pod
2 450-gal drop tanks

All Aircraft

Camouflaged color
IFF, radar, TACAN (OFF in target area)

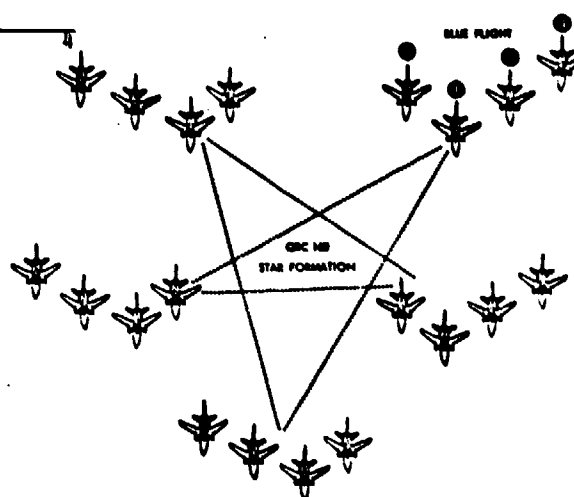
MIG-21s

Not given

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Not given, except there was a low undercast and a haze in the area of operation.

Altitude: 17,000 ft
Heading: East
Speed: Not given
Fuel State: Not given
Flight Formation
QRC-160 pod formation (star gaggle).



5. INITIAL DETECTION

BLUE Flight heard the lead flight call MIGs. Then BLUE 3 saw two MIG-21s coming in at 1:30 o'clock to formation, 3 to 4 miles away. The MIGs were at 12,000 ft. The MIGs were easily identified by their shape and shiny silver color.

6. ACTION INITIATED

BLUE Flight turned into the MIGs. The MIG-21s turned left and flew parallel to the formation then turned further left and flew away from the formation, going down into the clouds.

7. SITUATION DEVELOPMENT

BLUE Flight mistakenly made an attack pass on a flight of F-105 that was flying below the formation as the MIG-21s flew away. BLUE Flight broke off the attack after identification was made. BLUE Flight dodged a non-existent SA-2 missile then brought up

SECRET

SECRET

Event II-122

a tremendous amount of flak (37/57mm) by flying low (2,000 ft). It was a suspected "dry" launch since they got a launch light on the WILD WEASEL gear but never saw a SAM.

8. ORDNANCE

None fired by either side.

9. EQUIPMENT PROBLEMS

None given.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 2	2,000	800	10

All others not given.

11. DATA SOURCES

Project Interviews: BLUE 2, 15 February 1967
BLUE 3, 16 February 1967

SECRET

SECRET

Event II-123

Aircraft Involved: Four F-105Ds vs four MIG-21s

Results: Sighting only

Vicinity: 21°30'N/104°27'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 8 January 1967/0825H

Four F-105Ds (BLUE flight), part of a strike force operating out of Korat, Thailand, was to hit a prebriefed target in Route Package VI-A. Weather prevented entry into Route Package VI-A and BLUE flight was looking for a target of opportunity along the west side of the Red River.

2. MISSION ROUTE

BLUE flight departed Korat, proceeded north to the tanker, then NE to the Red River.

3. AIRCRAFT CONFIGURATIONS

BLUE 1, 2, 3, 4

6 - 500-lb bombs
1 - AIM-9B (SIDEWINDER)
1 - QRC-160 ECM Pod
2 - 450-gal wing tanks
1 - Mk-61 Gatling Gun (1026 rounds)

MIG-21 (1, 2, 3, 4)

Silver Color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Low overcast condition in primary target area. Clear, with unrestricted visibility above clouds.

	<u>BLUE Flight</u>	<u>MIGs</u>
<u>Altitude:</u>	13-14,000 ft	21-22,000 ft
<u>Heading:</u>	NW along Thud Ridge	Opposite heading
<u>Speed:</u>	480 Kt	Unknown
<u>Fuel State:</u>	Unknown	Unknown

10. AIRCREW COMMENTS

	<u>Number of Hours</u>	<u>Combat Missions</u>
	<u>Total</u> <u>F-105</u>	
BLUE 2	3100 150	approx. 30

General Comments

BLUE 2 - Unable to use X-band warning gear when using QRC-160 pods.
Turned off IFF and TACAN to minimize electronic emissions when over North Vietnam.
Would prefer better geographical reference when receiving MIG warnings.
F-105 doesn't have sufficient wing area to permit turning with MIGs.

11. DATA SOURCES

Project Interview: BLUE 2 (undated)

12. NARRATIVE DESCRIPTION

BLUE flight (vicinity of 21°30'N/104°27'E) was heading NW along Thud Ridge when they observed a flight of four MIGs at a range of 6-8 n mi heading in the opposite direction. When the MIGs passed abeam (BLUE's 3 o'clock) at 3-4 n mi, the MIGs turned left towards BLUE flight in an attempt to get into the 6 o'clock position. BLUE flight made a descending left turn in order to pick up airspeed; they did not jettison ordnance. As the flight went through 180° they looked to the left and noted that the MIGs had made a turn in the other direction and were departing the area. The MIGs were never any closer than approximately 2-1/2 n mi. Identification was easy even at 5 n mi because when the MIG pulled up, the top to bottom profile clearly showed the delta wing.

SECRET

Aircraft Involved: Eight F-105s vs four MIG-21s
 Result: No damage
 Vicinity of Encounter: 20°40'N/104°30'E and
 21°15'N/104°42'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 15 January 1967/1615H and 1617H

Four F-105s (BLUE Flight) and four F-105s (GREEN Flight) were part of a strike force bombing a railroad bridge S.E. of Thai Ngyen BLUE Flight and GREEN Flight had hit the target and were out-bound when the MIG sighting occurred.

2. MISSION ROUTE

Departed Korat headed north to rendezvous with tankers, then northeast to the Black River then east to the Red River and target (vicinity of Thai Ngyen). Egress by same route to post strike tankers.

4. FLIGHT CONDITIONS

Weather: Clear, 2-4 mile visibility in haze.

	<u>BLUE 1, 2, 3, 4</u>	<u>GREEN 1, 2, 3, 4</u>	<u>MIG 1, 2, 3, 4</u>	<u>MIG 5, 6, 7, 8</u>
<u>Altitude:</u>	14,000 ft	15,000 ft	20,000 ft	22,000 ft
<u>Heading:</u>	210°	195°	030°	030°
<u>Speed:</u>	500 Kts	540 Kts	Unknown	
<u>Position:</u>	20°40'N/104°30'E	21°15'N/104°42'E	20°40'N/104°30'E	21°15'N/104°42'E
<u>Flight Formation:</u>	Pod (QRC-160)	Pod (QRC-160)	Approx. finger tip elements in trail	

5. INITIAL DETECTION

BLUE Flight sighted a flight of four MIG-21s at 1615H. The MIG-21s were at 1 o'clock high on a reciprocal heading to BLUE Flight. GREEN Flight sighted a flight of four MIG-21s at 1617H. The MIG-21s were at 22,000 to 23,000 feet, 8 o'clock to GREEN Flight heading 030°.

6. ACTION INITIATED

BLUE Flight continued on course and lost sight of the MIG-21s. GREEN Flight observed MIG-21's move behind them to within 2 mi. GREEN Flight lit afterburners and descended to the mountain tops losing sight of the MIGs.

7. SITUATION DEVELOPMENT

No further action on either side no engagement resulted.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

BLUE Flight: None
 GREEN Flight: None

10. AIRCREW COMMENTS

	<u>Total Hours</u>	<u>F-105</u>	<u>Combat Missions</u>
BLUE 2	850	600	17
BLUE 1, 3, 4	Not Interviewed		
GREEN 1, 2, 3, 4	Not Interviewed		

11. DATA SOURCES

OPREP-4 RT 049 - 388TFW 151310Z Jan 67

12. NARRATIVE DESCRIPTION

BLUE Flight (four F-105s) sighted a flight of four MIG-21s at 1615H. BLUE Flight position 20°40'N/104°30'E heading 210°, altitude 14,000 feet, 500 kts. MIG-21s were at 1 o'clock high 20,000 to 22,000 ft. MIG-21s began turning toward BLUE Flight. BLUE Flight continued on course and lost sight of MIG-21s.

GREEN Flight sighted four MIG-21s at 1617H. GREEN position 21°15'N/104°42'E heading 195°, altitude 15,000 ft, 540 kts. MIG-21s were at 8 o'clock to GREEN Flight heading 030° at 22,000 to 23,000 feet. The MIG rolled in behind GREEN Flight and closed to 2 miles of GREEN Flight. GREEN Flight lit afterburners descended to the mountain tops and lost sight of MIG-21s.

SECRET

Event II-125

Aircraft Involved: Four F-105Ds vs one MIG-21

Result: Sighting only

Vicinity of Encounter: North Laos

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 15 January 1967/1645H

Four F-105s (BLUE Flight) outbound for the target.

11. DATA SOURCES

Project Interview: BLUE 3, 16 Feb 67

12. NARRATIVE DESCRIPTION

BLUE 2 sighted an aircraft believed to be a MIG-21. There is some doubt whether it was an F-4 or a MIG-21, since BLUE Flight was in North Laos and MIGs were not known to operate in that area.

BLUE 3 felt that the single SIDEWINDER armament in the F-105 is insufficient.

Event II-126

Aircraft Involved: Four F-105s vs probable four MIGs

Result: Sighting only

Vicinity of Encounter: 20°57'N/105°04'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 January 1967/0818H

Mission and tactical situation not contained in data available.

3. AIRCRAFT CONFIGURATIONS

MIGs

Silver color.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	<u>BLUE Flight</u>	<u>MIGs</u>
<u>Altitude:</u>	18,000 ft	35,000 ft (est.)
<u>Heading:</u>	069°	In a left turn
<u>Speed:</u>	500 kt	Unknown

5. INITIAL DETECTION

BLUE 2 sighted four silver airplanes at an estimated range of 25 mi to the northeast at approximately 35,000 ft. The contacts quickly faded out of sight.

7. SITUATION DEVELOPMENT

MIGs faded from sight.

11. DATA SOURCES

Project Interviews: BLUE 3, 17 Feb 1967

Messages, Reports:

Project RED BARON Event folder contains an extract from an OPREP-4 concerning this event.

12. NARRATIVE DESCRIPTION

Sighting only.

SECRET

SECRET

Event II-127

Aircraft Involved: Four F-105s vs two MIG-21s

Result: Sighting only

Vicinity of Encounter: 21°37'N/104°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 January 1967/0838H

Four F-105 aircraft, BLUE Flight, were part of a strike against a POL storage area south of Thud Ridge.

2. MISSION ROUTE

BLUE Flight had completed the attack and was egressing from the area to rendezvous with airborne tankers for refueling.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

1 SIDEWINDER (AIM-9B)
1 Mk-61 gun (20mm)

MIG-21 MIG 1, 2

Silver color.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear, 8 to 10-mile visibility with light haze.

	BLUE			
	1	2	3	4
<u>Altitude:</u>	20,000		17,000	15,000
<u>Heading:</u>	-----200°-----			
<u>Speed:</u>	-----490-540 kt-----			
<u>Fuel State:</u>	-----6-6500 lb-----			

Flight Formation: Loose finger-four.

5. INITIAL DETECTION

BLUE 4 sighted two MIGs at 11 o'clock almost directly over the flight about 2000 ft above them. The MIGs were heading in an opposite direction and were quickly out of sight.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 1	1100	900	50	Fighter background
BLUE 3	1200	150	20	
BLUE 4	3700	700	15	

Comments on this Encounter

BLUE 3 No opportunity to attack the MIGs developed from the head-on encounter.

BLUE 3 and 4 Both pilots were impressed with the turning ability of the MIG-21.

11. DATA SOURCES

Project Interviews: BLUE 1, 17 Feb 1967; BLUE 3, 15 Feb 1967; BLUE 4, 18 Feb 1967.

12. NARRATIVE DESCRIPTION

BLUE Flight was egressing from the target area in a loose formation when the MIG-21s were sighted. From the head-on encounter neither side maneuvered to attack. The MIG-21s quickly disappeared from sight.

Two MIG-17 fighters were sighted either shortly before or shortly after the sightings of the MIG-21s. The conditions were very similar with no attempt to engage made by either side. The MIGs were above the F-105s and passed on an opposite heading at a range of about three miles.

SECRET

Aircraft Involved: Four F-105s vs one MIG-21

Result: Sighting only

Vicinity of Encounter: 21°30'N/105°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 January 1967/0825H

Four F-105s were departing the target area as the third of four flights on the strike mission.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

- 1 - QRC 160 Pod
- 2 - 450-gal external fuel tanks
- 1 - SIDEWINDER (AIM-9B)
- 1 - M-61 Gun (20mm)

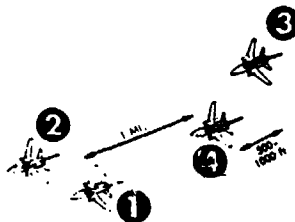
MIG-21

Silver color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

BLUE Flight

Altitude: 18,000 ft climbing
Heading: Southwest
Speed: 550 kt
Fuel: 3000 lb
Flight Formation:



5. INITIAL DETECTION

BLUE 4 first sighted the MIG at the 4 o'clock position in a 45° dive, approximately 5000 to 6000 ft above BLUE 4 at a range of approximately two miles.

6. ACTION INITIATED

BLUE 3 and 4 started a hard, descending turn to the right.

7. SITUATION DEVELOPMENT

The MIG was observed to break off from his attack and to depart the area.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 4	3,500	110	15

Comments from Overall Experience

BLUE 4, "I got 80 hrs in the RTU Program and most of that was just learning to fly the airplane with little emphasis on tactics. What little tactics we learned were not valid once we got over here because the tactics change so rapidly. The people in the RTU who were veterans of SEA...didn't even know anything about (QRC-160) pods."

11. DATA SOURCES

Project Interviews: BLUE 4 17 Feb 1967

SECRET

Event II-128

12. NARRATIVE DESCRIPTION

BLUE 3 and 4 were outbound from the target on a southwesterly heading approximately one mile behind BLUE 1 and 2. The flight was climbing through 18,000 ft at 550 kt when BLUE 4 sighted a MIG-21 in the 4 o'clock position in a 45° dive about 5,000 to 6,000 ft above his altitude. BLUE 4 called the bogey and BLUE 3 turned hard right descending as he engaged afterburner. BLUE 4 engaged afterburner and maneuvered to stay with BLUE 3. Visual contact with the MIG was lost but BLUE 1 reported the MIG broke off his attack and departed the area. BLUE Flight then jettisoned external fuel tanks and rendezvoused with an emergency tanker with 1000 lb of fuel remaining.

SECRET

SECRET

Event II-129

Aircraft Involved: Four F-105s vs two MIG-21s

Result: Sighting only

Vicinity of Encounter: 21°36'N/104°57'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 January 1967/0805H

Four F-105s departed Takhli AB on an IRON HAND mission in support of a strike mission.

2. MISSION ROUTE

Departed Takhli AB and refueled with GREEN ANCHOR before proceeding to TACAN Station 97. From the TACAN, the flight proceeded to 21°37'N/104°56'E then to 21°34'N/105°33'E. The MIG sighting occurred at 21°36'N/104°57'E. Return of the flight was by reverse route with air refueling prior to return to base.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

2 - 450-gal external fuel tanks
1 - M-61 Gun (1,029 rd 20mm ammo)

BLUE 1 and 3 (F-105F)

2 - SHRIKE (AGM-45)
4 - CBU-24

BLUE 2 (F-105F)

2 - SHRIKE (AGM-45)
6 - 500-lb bombs

BLUE 4 (F-105D)

6 - 500-lb bombs

BLUE 3, 4

TACAN/Off; Radar, IFF/Stby; Doppler/On

MIG-21 MIG 1, 2

Silver color

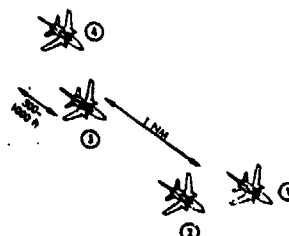
4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Low stratus of heavy haze which restricted visibility to the east to 1-2 miles and to the west to 3-4 miles.

BLUE 1, 2, 3, 4

Altitude: 16,000 ft
Heading: Southeasterly
Speed: 550 kt
Fuel: 12,000 lb

Flight Formation:



5. INITIAL DETECTION

BLUE 4 first sighted two MIGs at 7 o'clock at a range of approximately 1/2 mile diving toward the flight in a descending turn and approximately 2,000 ft above the flight. An area MIG warning had been heard by BLUE 4.

6. ACTION INITIATED

BLUE 4 jettisoned his wing tanks as he called a break. BLUE 3 broke hard right and down as he jettisoned external fuel tanks.

7. SITUATION DEVELOPMENT

BLUE 1 and 2 jettisoned external stores and maneuvered to counter the MIG attack. As BLUE 3 and 4 entered the haze, where visibility was approximately one mile, they lost sight of the MIG and of BLUE 1 and 2.

9. EQUIPMENT PROBLEMS

BLUE 4 was having difficulty with one of the bayonet fittings on his oxygen mask allowing the mask to fall away from his face with movements or from g forces.

SECRET

10. AIRCREW COMMENTS

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 3	1,700	1,000	50	TAC background
BLUE 4	2,290	400	75	B-47 background

Comments on this Encounter

BLUE 3 - The MIGs were not very aggressive. Generally the MIGs go after the Wild Weasel and know which airplane in the flight is the Wild Weasel.

BLUE 4 - Could not stay with BLUE 3 in the defensive maneuvering.

Comments from Overall Experience

BLUE 3 - The EWO in the F-105P is very helpful as a lookout because of the poor visibility to the rear. The MIGs can out-turn the F-105 so it is a difficult situation with a MIG at 6 o'clock.

BLUE 4 - BIG EYE area warnings just clutter the radio. Need coordination among the different types of aircraft and missions. When using QRC pods, the SAM doesn't appear to guide and AA doesn't follow a flight as effectively.

11. DATA SOURCES

Project Interviews:

BLUE 3 8 Feb 1967

BLUE 4 3 Feb 1967

Messages, Reports:

355TFW OPREP-3 160215Z Jan 67 DOI 0218

355TFW OPREP-3 160545Z Jan 67 DOTO-0 10178 Jan 67

12. NARRATIVE DESCRIPTION

BLUE Flight was flying down the south side of Thud Ridge at an altitude of 16,000 ft maintaining 550 kt. BLUE 3 and 4 were approximately one mile behind BLUE 1 and 2 with BLUE 4 trailing BLUE 3 by 500-1,000 ft. BLUE 4 sighted two MIGs at his 7 o'clock in an attack. The flight was alerted to the presence of MIGs by BLUE 4. The lead section, BLUE 1 and 2, jettisoned all external stores and dove into the haze layer in a descending right turn leveling out at 6,000 ft and egressing from the area. BLUE 3 broke right in a descending turn and jettisoned his external tanks. As he tried to follow, BLUE 4 jettisoned his tanks, engaged afterburner, and then jettisoned his bombs. When BLUE 3 entered the haze, while reversing his turn, BLUE 4 lost sight of BLUE 3 and the MIGs. BLUE 4 executed a modified Split-S and leveled out at 4,000 ft in the haze and departed the area. BLUE 3 continued into the target area but when he discovered he was alone he returned to base. BLUE 1, 2 and 4 rejoined in the refueling area and returned to base.

SECRET

Event II-130

Aircraft Involved: Four F-105s vs Four MIG-21s

Result: No damage

Vicinity of Encounter: 21°36'N/104°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 January 1967/0759H (or 2359Z on 16 Jan 1967)

Four F-105 aircraft (BLUE flight) from Korat on a strike mission.

11. DATA SOURCE

RED BARON MIG Incident Summary (Reference PACAF CP31).

12. NARRATIVE DESCRIPTION

BLUE flight was engaged with four MIG-21s, no damage.

Event II-131

Aircraft Involved: Four F-105s vs one MIG-21

Result: Sighting only

Vicinity of Encounter: 21°22'N/105°03'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 16 January 1967/1538H

Four F-105 aircraft on an IRON HAND mission.

11. DATA SOURCES

RED BARON MIG Incident Summary

12. NARRATIVE DESCRIPTION

This was a sighting only. No other data available.

SECRET

Aircraft Involved: Four F-105s vs two MIG-21s

Result: No damage

Vicinity of Encounter: Approx. 21°50'N/105°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 January 1967/0838H

BLUE Flight of four F-105s, operating on a strike mission out of Takhli, had bombed railroad yards target (JCS 21.11; 21°31'41"N/105°51'03"E) by Thai Nguyen and were proceeding outbound to home base.

2. MISSION ROUTE

Departed Takhli Air Base, headed north to tankers for pre-strike refueling, then northeast to Red River, to target, egressed back across Red River, then to tankers for post-strike refueling, to home base.

3. AIRCRAFT CONFIGURATION

F-105 BLUE 1, 2, 3, 4

- 1 - QRC-160 pod
1029 rounds 20mm
- 2 - 450 gal wing tanks
Centerline tank
IFF and TACAN receive only, radar off, doppler was on.
camouflaged color paint
- 6 - 750 lb bombs

F-105 BLUE 1 and 3

- 1 - AIM-9

MIG-21 MIG 1, 2

- 2 - AAM missiles
Silver color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear, visibility one to two miles in haze layer up to 6000 ft.

	BLUE				MIG-21	
	1	2	3	4	1	2
<u>Altitude:</u>	----7000 ft----				9-10,000 ft	
<u>Heading:</u>	Generally west-				--North--	
<u>Speed:</u>	----Mach 1----					
<u>Fuel State:</u>	----9000 lb----					

5. INITIAL DETECTION

BLUE Flight was egressing west from the target area at a speed of Mach .95 to 1.1 Mach and turning when BLUE 4 spotted two MIGs at their 9 o'clock position, one mile out at an altitude of 10,000 ft. They were identified as MIG-21s almost immediately, due to their shape as seen when they turned in.

6. ACTION INITIATED

BLUE Flight started a small turn into the MIG-21s. The MIGs fell in behind BLUE Flight at their 7 o'clock position.

7. SITUATION DEVELOPMENT

BLUE Flight lit afterburners and MIG-21s started to lag behind. BLUE Flight continued to out run MIG-21s and left the area, homeward bound.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	<u>Remarks</u>
BLUE 4	450	200	20	Very experienced pilot.

Comments on this Encounter

The MIGs, when seen, were smoking. The high speed at low altitude was the saving factor in this encounter. They cannot fight a MIG air-to-air due to the MIG's superior turn capability.

Comments from Overall Experience

Would like a heads-up display of range from the radar for gun ranging. It would also help establish closure rate. Would like one switch to go from ground to air-to-air.

SECRET

11. DATA SOURCES

Event II-132

Project Interview: BLUE 4, 6 Feb 1967.

12. NARRATIVE DESCRIPTION

BLUE Flight was the last one in from Takhli. It was about eight minutes late and came in almost due south on target before the second wave which was from Korat. Flight from Korat was scheduled to come in approximately 10 minutes after the flight from Takhli finished. There was a lot of congestion in the taxiway that morning and the airplanes were lined up all the way back to the tower. Due to the planned airspeed it was difficult to pick up a minute. The weather was clear with about two miles visibility through a haze layer up to an altitude of about 6000 ft. BLUE Flight sighted the target by the 85mm that was slightly to the west and had a barrage that was impossible to miss. Very little fire was encountered coming in. When moving out from the target, and making a turn at about .95 to 1.1 Mach, BLUE 4 spotted two MIGs at 9 o'clock and a range of one or possibly two miles. The MIGs started to turn in behind the BLUE Flight. BLUE 4 called two boys at 9 o'clock and turning in. At this point, BLUE 2 punched his tanks off. BLUE Flight started a very small turn into the MIGs, not losing any airspeed, and no break or heavy g's. BLUE Flight was in afterburner, and the MIGs fell in behind at 7 o'clock. The MIGs started falling behind. The MIGs were within missile range but they weren't within the angle off. The MIGs had a range problem and couldn't close in on BLUE Flight. The MIGs dropped back and BLUE Flight continued up the hill where a SAM was launched at them.

When BLUE Flight was at the top of Thud Ridge and turning they sighted two more MIGs, but too far out to tell whether they were 21s or 19s. Once beyond this point they had light AAA and a little flak.

SECRET

SECRET

Event II-133

Aircraft Involved: Four F-105s vs MIGs

Result: No damage

Vicinity of Encounter: Approx. 21°30'N/105°10'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 January 1967/25 minutes after sunrise (approx. 0815H)

Four F-105s were on a strike mission to JCS 21.11 (21°33'41"N/105°51'03"E) when they sighted MIGs. BLUE Flight was preceded by a flak-suppression flight and another strike flight.

2. MISSION ROUTE

Departed Takhli, refueled and headed northeast until reaching the Red River where it crosses the 105° longitude. Then proceeded southeast to target.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

MIGs - Silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Cloudy with an overcast over the mountains to the west and scattered into the valley leading into Hanoi with 1 mile visibility to the east and 3 miles to the west.

	BLUE			
	1	2	3	4
<u>Altitude:</u>	8,000 feet			
<u>Heading:</u>	Northeast			
<u>Airspeed:</u>	Not reported			
<u>Fuel State:</u>	Not reported			
<u>Flight Formation:</u>	Unknown			

5. INITIAL DETECTION

BLUE Flight initially acquired sun glints at his 10:30 o'clock position, a few miles probably from MIGs in an orbit.

6. ACTION INITIATED

MIGs started a turn toward, descended and paralleled BLUE Flight's course; then BLUE Flight descended into the haze.

7. SITUATION DEVELOPED

The MIGs followed BLUE Flight for 3 or 4 minutes. As BLUE Flight descended, BLUE 2 lost sight of the MIGs and they were no longer a threat.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 3	4000	375	17

Comments on Encounter

BLUE 3: MIGs seemed to be under GCI control and were directed on another flight.

11. DATA SOURCE

Project Interview: BLUE 3 (8 Feb 67)

SECRET

12. NARRATIVE DESCRIPTION

BLUE Flight was separated from the other flights since they were 2 miles to the right of course and the others were 2 miles to the left. BLUE Flight was inbound to the target at 8,000 when BLUE 3 saw some flashes of sunlight to the northwest at about his 10:30 o'clock position. The MIGs seemed to be in an orbit and then started to turn and descent into BLUE Flight at first but then continued on around to parallel BLUE Flight's course. BLUE 2 kept them in sight and the MIGs stayed with the flight for about 3 minutes, 3 to 4 miles outside of BLUE Flight's position. During this time BLUE 1 was in a descent into the haze layer which when reached all sight of the MIGs vanished. BLUE Flight continued on to the target and then home. The MIGs were never identified as to type.

SECRET

Event II-134

Aircraft Involved: Three F-105s vs one MIG

Result: Sighting only

Vicinity of Encounter: 21°35'N/104°46'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 January 1967/1609H

IRON HAND mission for strike on railroad yard at 21°33'N/105°51'E.

2. MISSION ROUTE

BLUE Flight from Korat flew over Red River and egressed with strike force from target, Thai Nguyen.

3. AIRCRAFT CONFIGURATIONS

F-105F BLUE 1

2 SHRIKE missiles
650-gal centerline
2 CBUs on wing

F-105D BLUE 2, 4

6 500-lb bombs
2 450-gal tanks
SIDEWINDER
QRC-160

MIG

Silver in color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Not reported

Altitude: 9000 ft

Heading: Not reported

Air Speed: 580-600 kts

Fuel State: Not reported

Flight Formation: Not reported

5. INITIAL DETECTION

Made by unknown member of BLUE flight at the same altitude, 2 or 4 o'clock from flight's position at a distance of 5 n ml. Unidentified aircraft thought to be a MIG.

6. ACTION INITIATED

MIG trailed BLUE flight for a short distance and then BLUE flight lost sight of it.

7. SITUATION DEVELOPMENT

The aircraft took no aggressive action and disappeared into the clouds.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

Electronic warfare operator's vector gear. (BLUE 1)
BLUE 3 aborted on tanker.
BLUE 1's heading indicator.

10. AIRCREW COMMENTS

Experience: Unknown

Comments on this Encounter:

This particular day we had a WEASEL and two wingmen due to the fact that Number 3 had aborted, so we were just more or less staying back in a fighting wing position.

11. DATA SOURCES

Project Interviews: BLUE 2, 15 February 1967

Message: OPREP-; 0-171659Z, 17 January 1967 from 388 TFW for DOCO

SECRET

SECRET

Event II-135

Aircraft Involved: Four F-105s vs two MIG-17s
Result: Sighting only
Vicinity of Encounter: 21°37'N/104°55'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 17 January 1967/0820H

A strike mission of four F-105s. (BLUE Flight) from Korat.

2. MISSION ROUTE

Not reported.

3. AIRCRAFT CONFIGURATIONS

Not reported.

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Not reported.

	BLUE			
	1	2	3	4
<u>Altitude</u> :		15,000 ft		
<u>Heading</u> :		Not reported		
<u>Speed</u> :		540 kts		
<u>Fuel State</u> :		Not reported		
<u>Flight Formation</u> :		Not reported		

5. INITIAL DETECTION

Made by BLUE 2 at his 10 o'clock position, 4 miles distant.

6. ACTION INITIATED

None

7. SITUATION DEVELOPED

Sighting only.

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 2	1200	200	20

Comments from Overall Experience

BLUE 2 would not want to give up speed for turning capability. If he fought would want to be low, never high, and in the 6 o'clock position. Would never turn with any MIG. Training was not adequate in air-to-air tactics to cope with MIGs. The lights which operate off the pod are in the wrong place, and one has to look back and down to see them. The radio is in the wrong place. Would like to see the guns checked out with boresighting. High speed at low altitude is an advantage. If we pull 4 G's, we have defeated his weapon systems.

11. DATA SOURCE

Project Interview: BLUE 2, 15 February 1967

12. NARRATIVE DESCRIPTION

BLUE 2 saw a MIG at his 10 o'clock position, 4 miles distant and level with his flight just as they were about to roll in on the target. BLUE Flight was at 15,000 ft and about 540 kt ground speed. When sighted, the MIGs were turning. No action was initiated, flight dropped bombs on target and returned safely to home base.

BLUE 2 did not identify the aircraft. It was not until later that it was positively identified by other members of the flight and correlated by another flight in the gaggle.

SECRET

Aircraft Involved: Four F-105Ds vs four MIG-21s

Result: No damage

Vicinity of Encounter: 21°06'N/105°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 67/0844H

Strike mission by four F-105Ds (BLUE Flight) on the Viet Tri RR yard at 21°17'56"N/105°26'10"E. There was a MIGCAP on this mission. The strike flights which encountered the MIGs were those in Events II-136, II-137, II-139 and II-141. The aircraft in Event II-136 was the lead flight.

2. MISSION ROUTE

Departed Korat, Thailand to tanker (refueled on Red Anchor), direct to Channel 97, direct to target (21°18'N/105°26'E) and returned the same route.

3. AIRCRAFT CONFIGURATION

F-105D BLUE 1, 2, 3, 4

4 - CBU-24s
 1 - QRC-160 (on B-4 for certain)
 1 - AIM-9B
 2 - 450-gal fuel tanks
 1 - gun (1,029 rounds)

MIG-21 MIG 1, 2, 3, 4

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 12,000 ft overcast tops at 16,000 ft with breaks in the overcast, visibility was 10 miles.

BLUE 1, 2, 3, 4

Altitude: 15,000 ft
 Heading: 062°
 Speed: 500 kt
 Fuel State: Unknown
 Formation: Pod formation

5. INITIAL DETECTION

Four MIG-21s were seen by all four flight members at their 8 o'clock position going to 6 o'clock, high, heading 240° at a distance of 3 miles. No prior MIG warnings were received.

6. ACTION INITIATED

BLUE Flight dropped ordnance and tanks, made a hard right turn then reversed it with a Split-S.

7. SITUATION DEVELOPMENT

MIGs fired, overshot BLUE Flight, and climbed out of sight. No encounter developed.

8. ORDNANCE

(No. fired/No. hits)

	<u>Cannon</u>	<u>Remarks</u>
BLUE	None	
MIG-21s	1/0	Used by one MIG as seen by B-4.

11. DATA SOURCES

Messages:

OPREP-3 Z 210527Z Jan 67 from 388th TFW Korat EOI 0208 Jan 67

OPREP-4 ROLLING THUNDER 034 21 Jan 67 388th TFW

12. NARRATIVE DESCRIPTION

The flights in Events II-136, II-137, II-139, and II-141 were proceeding to the target in a box formation, and the box formation had 2 flights in the lead, line abreast, followed by 2 more flights, line abreast, about one mile to the rear and about 1,000 ft higher. The flights flying line abreast were 1,500 to 2,000 ft apart, with the aircraft in Event II-136 (the mission commander) on the right front, and those of Event II-141 on the left front.

12. NARRATIVE DESCRIPTION (Continued)

Following were the aircraft in Events II-137 and II-139, with the aircraft of Event II-139 on the right. The placement of the elements within each flight is unknown.

At least two flights of MIG-21s (probably 3-4 aircraft each) made a pass on the formation, one descended from 9 o'clock and very high passing through the formation in a steep dive, between the lead and following flights. The other MIGs were able to attack the lead two flights closing to within 1/2 mile.

The action occurred at some time between 0840H and 0844H and lasted about 1.5 minutes. When first attacked, the formation was in the general vicinity of 21°07'N/105°05'E.¹

While the action was restricted in time and place, the accounts are such that correlation of sightings cannot be accomplished precisely. Moreover, the flights did not maintain continuous visual contact with each other; therefore, the reconstruction of the action of each flight has been documented separately.

BLUE Flight was inbound to the target at 15,000 ft altitude heading 062°, at 500 kt when they saw a flight of four MIG-21s at their 9 o'clock 3 miles range, high, heading 240°. The MIGs were in two ship elements, with 3,000 ft between elements and 500 to 1,000 ft between individual aircraft of the element. MIGs were then seen to roll in on BLUE Flight from the 9 o'clock position, to the 6 o'clock position with 150 kts overtake speed and closed the flight to within 3,000 ft level, at which time BLUE Flight jettisoned their ordnance and tanks (at 21°06'N/105°05'E) keeping their AIM-9Bs. BLUE Flight then executed a hard right turn, then reversed back with a Split-S. The MIGs were seen to overshoot BLUE Flight and climb sharply out of sight and BLUE 4 observed white smoke streaming from one of the MIGs, assumed to be cannon fire. BLUE Flight did a 180° and returned to base safely with no damage to any aircraft.

BLUE 4 received X-band signal on his vector gear immediately after the encounter. The signal was 2-1/2 to 3 rings at 6 o'clock, and could have come from either the MIGs or another friendly flight. The flight received no MIG warnings. There was no communication by BLUE Flight with the MIGCAP before the sighting or after.

¹There are minor differences in the OPREP sources as to time and place, depending on the particular flight.

SECRET

Event II-137

Aircraft Involved: Four F-105Ds vs three MIG-21s
Result: No damage
Vicinity of Encounter: 20 miles from target
(approx. 21°27'N/105°07'E)

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/0842H

Mission was a strike mission on the Viet Tri RR yard (21°17'56"N/105°26'10"E). The strike flights which encountered MIGs were those in Events II-136, II-141, II-139 and II-137. were MIOCAP aircraft in support of this mission.

2. MISSION ROUTE

Departed Korat Air Base, Thailand for Red Anchor to Channel 97, then direct to target.

3. AIRCRAFT CONFIGURATION

F-105Ds BLUE 1, 2, 3, 4

6 - 750-lb bombs
2 - 450-gal tanks
1 - SIDEWINDER (AIM-9B)
1 - Gun (1,029 rounds)

MIG-21

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 8000 ft undercast

BLUE 1, 2, 3, 4

Altitude: 14,000
Heading: 062°
Speed: Unknown
Fuel State: Unknown
Flight Formation: Pod Formation

5. INITIAL DETECTION

BLUE 4 saw three MIG-21s at his 9 o'clock position, in trail formation, high, with a positive overtake of approximately 1-1/2-2 miles out, heading 100°, flying straight and level.

6. ACTION INITIATED

BLUE Flight turned hard left into MIGs but MIGs did not follow or fire at BLUE Flight.

7. SITUATION DEVELOPMENT

MIGs were then seen at 11 o'clock and diving on the flight in front of BLUE Flight who went into a sharp right turn jettisoning their ordnance. [This flight was the flight of Event II-141.] BLUE flight also jettisoned ordnance and followed the turn.

8. ORDNANCE

None

9. EQUIPMENT PROBLEMS

None reported

10. AIRCREW COMMENTS

Experience: Unknown

Comments on this Encounter: None

Comments from Overall Experience

BLUE 1: It would be ideal if we had one switch that we could throw that would make us able to fire the AIM-9 after being in an air-to-ground mode.

11. DATA SOURCE

Project Interviews: BLUE 1, 10 Feb 67

Messages: OPREP-3 Z 210505Z Jan 67, from 388TFW Korat DOI 0211

SECRET

12. NARRATIVE DESCRIPTION

The flights in Events II-136, II-137, II-139, and II-141 were proceeding to the target in a box formation. Each flight was in a pod formation, and the box formation had two flights in the lead, line abreast, followed by two more flights, line abreast, about one mile to the rear and about 1,000 ft higher. The flights flying line abreast were 1,500 to 2,000 ft apart, with the aircraft in Event II-136 (the mission commander) on the right front, and those of Event II-141 on the left front. Following were the aircraft in Event II-137 and II-139, with the aircraft of Event II-139 on the right. The placement of the elements within each flight is unknown.

At least two flights of MIG-21s (probably 3-4 aircraft each) made a pass on the formation, one descended from 9 o'clock and very high, passing through the formation in a steep dive, between the leading and following flights. The other MIGs were able to attack the lead two flights closing within one-half mile.

The action occurred at sometime between 0840H and 0844H¹ and lasted about 1.5 minutes. When first attacked the formation was in the general vicinity of 21°07'N/105°05'E.¹

While the action was restricted in time and place, the accounts are such that correlation of sightings cannot be accomplished precisely. Moreover, the flights did not maintain continuous visual contact with each other; therefore, the reconstruction of the action of each flight has been documented separately.

The flight was in the pod formation with other flights, inbound to the target. At about 20 miles out from the target the flight saw three MIG-21s at their 9 o'clock position in a positive overtake, high, one and one-half miles out, heading 100°. BLUE Flight was at 14,000 ft, heading 062°. BLUE Flight then turned left into MIGs but they did not turn into BLUE Flight, attack, or fire their cannons. BLUE Flight rolled out 070°. At 14 miles out BLUE 2 called out MIGs at 11 o'clock at which time BLUE 1 looked up and saw what he thought was an afterburner igniting² from a diving aircraft. BLUE Flight then heard BLUE 2 and 4 of this flight call MIGs at 6 o'clock.

Shortly after the MIGs passed through the formation (these MIGs were not seen by BLUE Flight, only inferred from calls from other flights), BLUE Flight heard a call from an IRON HAND Flight that there were SAMs launched. Three SAMs were then observed to come out of the overcast. BLUE 1 estimated only 30 seconds elapsed between the MIGs and the SAM attack. The flight directly in front of BLUE Flight broke left, the flight on the right broke right and up, and the flight out in front broke right and down, jettisoning ordnance.

With the weather conditions compounded by SAMs and MIGs, the decision was made to abort, so the bombs and tanks were jettisoned at 21°09'N/105°15'E at 0845H, altitude 13,000 ft, speed 400 kt, heading 020 deg. The AIM-9Bs were retained. BLUE Flight then proceeded outbound to Channel 97. During egress BLUE 2 and 4 called out MIG-21s behind the flight and on a reciprocal heading. BLUE 1 did not see these, only the afterburner light as the MIGs engaged afterburner.

¹There are minor differences in the OPREP sources as to time and place, depending on the particular flight.

²BLUE 1 did not see any MIGs in this instance, only the afterburner light. All flight members saw the initial three MIG-21s.

SECRET

Event II-138

Aircraft Involved: Four F-105s vs eight
MIG-17s and two MIG-21s

Result: No damage

Vicinity of Encounter: 21°25'N/106°27'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/1605H

Four F-105s (BLUE Flight) was one of a group of flights on a strike mission on a railroad yard 15 miles north of Kep airfield.

2. MISSION ROUTE

The flight was from Korat but the route is unknown.

3. AIRCRAFT CONFIGURATIONS

BLUE 1, 2, 3, 4

(Drop ordnance unknown)

- 1 - AIM-9B
- 1 - QRC-160
- 1 - Gun (1,029 rounds)
- 2 - 450-gal fuel tanks

MIG-17 (MIGs 1 to 8)

Grey in color

MIG-21 (MIG 9, 10)

Silver

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 10,000 ft. overcast

BLUE 1, 2, 3, 4

Altitude: 9,000 ft
Heading: Passing through 135°
Speed: 450 kt
Fuel: Unknown
Flight formation: Unknown

5. INITIAL DETECTION

BLUE 1 saw the MIGs low while in a left turn at his 1 to 2 o'clock position, about 4,000 ft altitude chasing another flight of F-105s.

6. ACTION INITIATED

BLUE Flight jettisoned their ordnance and set up for air missiles. By this time, BLUE Flight had overtaken the MIGs so that the MIGs were at 5 o'clock and were lost from sight.

7. SITUATION DEVELOPED

The flight continued, and sighted more MIG-17s and MIG-21s, but no engagement evolved.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 1	3,300	450	15

Comments on this Encounter

BLUE 1: MIGs were lost visually partly because he had to set up missiles and take his eye off them. Takes too much time.

Comments from Overall Experience

BLUE 1: When carrying QRC-160, I have noticed the 85mm flak is quite inaccurate and obviously visually fired.

11. DATA SOURCE

Project Interviews: BLUE 1, 15 Feb 67
Messages: OPREP-4 ROLLING THUNDER 086, 21 Jan 67 from 388TFW

SECRET

SECRET

Event II-138

12. NARRATIVE DESCRIPTION

BLUE Flight was the lead flight of a four-flight gaggle (including GREEN Flight) attacking a railroad yard on the northeast railway about 15 miles north of Kep airfield. The strike force encountered very heavy and accurate 85mm flak from 21°30'N/106°27'E to the target (approximate location 21°37'N/106°34'E). The weather was restricting the operation since clouds were at 10,000-12,000 feet.

Two aircraft in the number two strike flight collided while dodging the flak, bursting at the flight's altitude, which was about 1,000 feet below the overcast.

When the flight got to the vicinity of the target an unidentified voice called "there are MIGs back there." BLUE Flight turned left to check, but no MIGs were observed. The distraction, combined with the flak, caused BLUE Flight to overfly the target and so the flight started a left turn.

In the left turn, when passing through a heading of 135-100 degrees BLUE 1 saw a flight of F-105s (GREEN Flight) paralleling BLUE Flight's course about a mile out and below. BLUE Flight was at 9-10,000 feet at the time, and GREEN Flight (one of the strike flights with BLUE Flights) was at about 6,000 feet. BLUE 1 also observed two gray MIG-17s at 1-2 o'clock, which were chasing the GREEN Flight. The MIGs were at about 4,000 ft altitude at GREEN's 4-5 o'clock position about 2 miles behind GREEN Flight.

Blue Flight was going faster than GREEN Flight and by the time BLUE Flight set up the switches for missiles air and jettisoned ordnance, the MIGs were at 5 o'clock. BLUE Flight turned to the left to come back on the MIGs but BLUE 4 turned right. By the time the remaining three members of BLUE Flight had joined, the MIGs and F-105s were lost from view.

BLUE Flight (BLUE 1, 2, 3) then returned to the target area to provide coverage for possible separated aircraft, while BLUE 4 exited. BLUE Flight made two 360 degree turns before exiting.

At approximately 1610H (it is not known whether BLUE Flight was orbiting or egressing at this time) when at 21°25'N/106°30'E, heading 075° at 8,000 ft altitude and 500 kt, BLUE 3 saw six gray MIG-17s immediately below the flight in a left hand race-track orbit at 3,000 ft altitude. At the same time, BLUE 2 saw two silver MIG-21s at 4,000 ft altitude heading 210 degrees. All of the flights with BLUE Flight jettisoned ordnance without striking the target. However, one other flight of another group did hit the target.

SECRET

SECRET

Event II-139

Aircraft Involved: Four F-105s vs one MIG-21

Result: Sighting only

Vicinity of Encounter: 20 miles from 21°18'N/
105°26'E (approximately
21°05'N/105°05'E)

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/0844H

Four F-105s (BLUE Flight) in a pod formation were to strike the Viet Tri RR yard (21°18'N/105°26'E). BLUE Flight was part of the strike force consisting of the aircraft in Events II-136, II-141, II-139, and II-137. There was a MIGCAP for this mission.

2. MISSION ROUTE

Departed Korat and refueled, then direct to Channel 97, and from there direct to the target.

3. AIRCRAFT CONFIGURATIONS

BLUE 1, 2, 3, 4

1 - 61mm gun (1,029 rounds)
2 - 450 gal tanks
1 - AIM-9B
Unknown bomb stores (probably six 750 lb)

MIG

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Overcast with minimal visibility.

BLUE 1, 2, 3, 4

Altitude: 15,000 ft
Heading: 062°
Speed: Unknown
Fuel State: Unknown
Flight Formation: Unknown

5. INITIAL DETECTION

The MIG was seen at 9 o'clock by BLUE Flight at 35,000 ft displaced out to the side a 1-2 miles. The MIG was seen only by BLUE 1 who saw a MIG-21 high, in a descending split S, but immediately lost the MIG against the sky background.

6. ACTION INITIATED

BLUE Flight continued on until MIGs rolled in and went below flight. Flight then jettisoned ordnance when the other members of the formation jettisoned and turned to south.

7. SITUATION DEVELOPED

Flight egressed without further incident.

8. ORDNANCE

None

9. EQUIPMENT PROBLEMS

None

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 1	Unknown	150	67
BLUE 3	2800	175	Unknown

Comments on This Encounter

BLUE 3: Apparently the MIGs knew we always seem to go up to the targets this way, and they were up there that day and waiting for us. I think they were so steep that they couldn't have fired at this point. The MIGs made a very aggressive attack.

SECRET

10. AIR CREW COMMENTS (Continued)

Comments from Overall Experience

BLUE 4: On break-up flights flew through each other, causing some confusion.

11. DATA SOURCES

Project Interviews: BLUE 1, 18 Feb 68; BLUE 3, 16 Feb 68

Messages:

388 TFW OPREP-4 ROLLING THUNDER 034 21 Jan 67

12. NARRATIVE DESCRIPTION

The flights in Events II-136, II-137, II-139, and II-141 were proceeding to the target in a box formation. Each flight was in a pod formation, and the box formation had two flights in the lead, line abreast, followed by two more flights, line abreast, about one mile to the rear and about 1000 feet higher. The flights flying line abreast were 1500 to 2000 feet apart, with the aircraft in Event II-136 (the mission commander) on the right front, and those of Event II-141 on the left front. Following were the aircraft in Events II-137 and II-139, with the aircraft of Event II-139 on the right. The placement of elements within each flight is unknown.

At least two flights of MIG-21s (probably 3 to 4 aircraft each) made a pass on the formation; one descended from 9 o'clock and very high, passing through the formation in a steep dive, between the lead and following flights. The other MIGs were able to attack the lead two flights closing to within 1/2 mile.

The action occurred at some time between 0840H and 0894H and lasted about 1.5 minutes. When first attacked the formation was in the general vicinity of 21°07'N/105°05'E. (There are minor differences in the OPREP sources as to time and place, depending on the flight.)

While the action was restricted in time and place, the accounts are such that correlation of sightings cannot be accomplished precisely. Moreover, the flights did not maintain continuous visual contact with each other; therefore, the reconstruction of the action of each flight has been documented separately.

Flight was inbound to the target when someone called out MIGs at 9 o'clock high to BLUE Flight who was heading 062°. BLUE 3 looked up and saw a flight of F-4s go by on a reciprocal heading, slightly high. BLUE 1 saw them also but looked up higher to see some MIG-21s in a split-S maneuver from 35,000 ft but then lost them in the blue. BLUE Flight never saw them but it is thought that the MIGs rolled out beneath BLUE Flight and pulled up in front of them and fired at the lead flight in front of BLUE Flight. BLUE Flight jettisoned its ordnance when it was called by the mission commander. The lead flight (who had made a 180° turn) flew through BLUE 1's formation. BLUE Flight then turned to the south, asking the lead flight for DF steer but could not see the MIGs though BLUE Flight was behind the flight being hounded by MIGs. BLUE Flight then made a few 360° turns, during the first of which BLUE 3 and 4, became separated from all BLUE 1 and 2.

SECRET

Event II-140

Aircraft Involved: Four F-105s vs two
MIG-17s

Result: No damage

Vicinity of Encounter: approximately
21°15'N/106°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/Approximately 1525H

Mission was a flak suppression by four F-105s (BLUE Flight) preceded by an IRON HAND Flight (Event II-144)

2. MISSION ROUTE

Departed Takhli for the Gulf of Tonkin for air refueling, then westward to target and returned same route. BLUE Flight was refueled both inbound and outbound.

3. AIRCRAFT CONFIGURATIONS

BLUE 1 and 3

1 - QRC-160
1 - AIM-9B
BLUE 4 had a QRC-160
pod radar standby,
TACON-on IFF-on
(lead only) Doppler-on
BLUE 1, 3, 4 had QRC-160
pods

BLUE 1, 2, 3, 4

5 - CBU-24s
2 - 450 gal tanks
1 - gun (1,029 rounds)

MIGs - unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather:

Undercast, scattered to broken above 20,000 ft; 5 miles visibility in haze.

BLUE 1, 2, 3, 4

Altitude: 6,000 ft
Heading: Westerly (270°)
A/S: 525 - 550 KCAS
Fuel: 10,000 lb
Flight Formation: Pod

5. INITIAL DETECTION

Flight was heading westerly when BLUE 2 observed 2 MIG-17s heading easterly, co-altitude, 1 to 1-1/2 miles out, 80° off the right wing (about 2-2:30 o'clock).

6. ACTION INITIATED

As MIGs were line abreast, they dropped their tanks and turned into BLUE Flight. BLUE Flight dropped their tanks and increased airspeed to 575 knots. The MIGs were positively identified when they jettisoned their tanks, and started to turn into BLUE Flight's 6 o'clock position.

7. SITUATION DEVELOPMENT

BLUE Flight continued on and the MIGs were lost from sight.

8. ORDNANCE

None.

9. EQUIPMENT PROBLEMS

None.

10. AIRCREW COMMENTS

<u>Experience</u>	<u>Total</u>	<u>F-105s</u>	<u>Combat</u>
BLUE 2	1,100	700	30

Comments on This Encounter

BLUE 2: It looked like they still had a lot of fuel in their tanks for they marked real well when they got rid of them. Didn't appear to be GCI controlled.

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Comments on Overall Experience

BLUE 2: If we see a MIG carrying an IR missile we drop it down and get out of his envelope in the ground noise. If we see him in time we can out run him. If you see the MIG first, press a high speed attack, hit him, and get out.

11. DATA SOURCE

Project Interview - BLUE 2 (3 Feb 67)

BLUE 3 and 4 interviewed on 4 Feb 67 but could not add to the data on this event.

12. NARRATIVE DESCRIPTION

BLUE Flight was inbound to the target at 6,000' on westerly heading at 525 to 550 kt. BLUE 2 then saw 2 MIGs (either 15 or 17s) 80° off his right wing heading easterly - 1-1/2 miles out, at approximately the same altitude. BLUE 2 called it to the other members of BLUE Flight, and saw the MIGs fly to the line abreast, when they then dropped their tanks and turned into BLUE Flight. BLUE Flight then dropped their tanks and increased their airspeed to 575 KCAS. MIGs dropped back at BLUE's 4:30 position and BLUE Flight just outran them. BLUE Flight then hit target and on egress from area never did see MIGs again. All aircraft returned safely to home base.

Shortly after crossing the coast line BLUE Flight heard the IRON HAND Flight (Event II-144) encounter MIGs and although the radio transmissions were monitored inbound and outbound the flight never saw the aircraft involved.

SECRET

Aircraft Involved: Four F-105Ds vs nine or ten MIG-21s

Result: No damage

Vicinity of Encounter: 21°07'N/105°05'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/0840H

This was a strike mission on the Viet Tri RR yard (21°17'56"N/105°26'10"E) by 4 F-105s (BLUE Flight). The flights in Events II-136, -141, -139, and -137 were also part of the strike force. There was MIGCAP for this mission.

2. MISSION ROUTE

Departed for air refueling on White Anchor, then to 20°28'N/103°43'E, then direct to target. Reverse route for egress.

3. AIRCRAFT CONFIGURATION

BLUE 1, 2, 3, 4

- 6 - 750-lb bombs
- 2 - 450-gal tanks
- 1 - QRC-160
- 1 - AIM-9B
- 1 - 20mm cannon (1,029 rounds)

MIG-21

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: 12,000 ft bases; tops 16,000 ft overcast with breaks in the overcast, visibility unlimited above clouds.

BLUE 1, 2, 3, 4

- Altitude: 16,000 ft
- Heading: 060°
- Airspeed: 480 KTAS
- Fuel: Unknown
- Flight formation: Pod formation with 1,000 ft vertical and horizontal separation.

5. INITIAL DETECTION

BLUE 2 and 3 simultaneously saw and called out three MIG-21s at the flight's 8 o'clock position. The MIGs were at approximately 35,000 feet, and 2 miles behind BLUE Flight, turning into the flight's 6 o'clock position. Simultaneously BLUE 3 and 4 also saw a flight of MIG-21s at 9-10 o'clock, 30-35,000 ft altitude, 1 mile away, making a diving right turn into the strike force formation. Both flights of MIGs were in fluid formations.

6. ACTION INITIATED

BLUE Flight waited until the MIGs were committed and then made a shallow turn to the left, concentrating on the flight at 8 o'clock, which had about 100-knot overtake.

7. SITUATION DEVELOPMENT

Someone then called MIGs at 3 o'clock and BLUE Flight went into a right turn. BLUE Flight then reversed the turn, and saw the MIGs which were at the 6 o'clock position to down below the flight. Tanks were jettisoned, and when someone called "they're coming up from below," BLUE Flight went into left turn and dropped ordnance.

9. EQUIPMENT PROBLEMS

BLUE 3 couldn't jettison bombs normally so had to jettison MER rack also to get rid of them.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 2	3,500	110 approx.	15

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Event II-141

Comments on this Encounter

BLUE 2: The MIG appeared unable to track during his attack and did not attempt to salvage his run by turning into BLUE Flight.

Comments on Overall Experience

BLUE 2: We have a good system (F-105) as it is right now if we had a better power-to-weight ratio.

11. DATA SOURCE

Project Interview: BLUE 2, 17 Jan 67

Messages: 388TFW OPREP-3 210525Z Jan 67 DQI 0206

12. NARRATIVE DESCRIPTION

The flights in Events II-136, II-137, II-139, and II-141 were proceeding to the target in a box formation. Each flight was in a pod formation, and the box formation had 2 flights in the lead, line abreast, followed by 2 more flights, line abreast, about one mile to the rear and about 1000 feet higher. The flights flying line abreast were 150 to 2000 feet apart, with the aircraft in Event II-136 (the mission commander) on the right front and those of Event II-141 on the left front. Following were the aircraft in Events II-137 and II-139 with the aircraft of Event II-139 on the right. The placement of the elements within each flight is unknown.

At least two flights of MIG-21s (probably 3-4 aircraft each) made a pass on the formation, one descended from 9 o'clock and very high, passing through the formation in a steep dive, between the lead and following flights. The other MIGs were able to attack the lead two flights closing to within 1/2 mile.

The action occurred at some time between 0840H and 0844H¹ and lasted about 1.5 minutes. When first attacked the formation was in the general vicinity of 21°07'N/105°05'E.

While the action was restricted in time and place, the accounts are such that correlation of sightings cannot be accomplished precisely. Moreover, the flights did not maintain continuous visual contact with each other, therefore, the reconstruction of the action of each flight had been documented separately.

BLUE Flight was inbound to the target at 16,000 ft heading 060° at 480 kt when BLUE 2 and 3 saw a flight of aircraft at their 8 o'clock position at 35,000 ft altitude 2 nmi out. At first, BLUE 2 thought they were F-4s but then they dove on the flight and someone called out "they're MIG-21s." Lead then went into a shallow left turn. BLUE 3 and 4 called out MIGs at 3 o'clock high and lead turned to the right. MIGs at 8 o'clock were now 1 nmi behind, however, the MIGs on the right appeared to be diving on another flight and lead reversed back to the left, descending in time for BLUE 2 to see MIGs dive below the flight's 6 o'clock position 1/2 nmi out and low. These MIGs were not seen again.

As BLUE Flight reversed, BLUE 2 heard other flights call MIGs at 6 o'clock and shooting. BLUE Flight then saw the other flights jettison their tanks and they did the same. Then someone from another flight called out "they're coming up from 6 o'clock low." At this point everyone started a hard turn to the left in afterburner at which time BLUE 1 called for jettisoning of the ordnance in the vicinity of 21°12'N/105°12'E.

BLUE Flight was now at 12,000 ft 420 KTAS, heading 010° at 21°12'N/105°12'E, 0841H, in a left turn and descending through a cloud layer. While descending BLUE 3 observed 3 more MIG-21s immediately below them at 3,000 ft altitude heading approximately 180°. BLUE Flight continued in left turn to the west and egressed the area. Flight returned safely home.

During ingress BLUE Flight experienced moderate flak exploding about 1,000 feet below them, starting about 30 miles out from the target. After the flight's 180° turn, and during egress, very little flak was seen, and it was not in their immediate vicinity.

¹There are minor differences in the OPREP sources as to time and place, depending on the particular flight.

²Of the 24 bombs in BLUE Flight 18 were dropped armed. BLUE 3 jettisoned safe due to failure of normal release.

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Aircraft Involved: Four F-105Ds vs five MIG-17s

Result: No damage

Vicinity of Encounter: 21°11'N/106°46'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/1522H

Four F-105s (BLUE Flight) were on a strike mission against target JCS 18.23. There were B-66 and IRON HAND support aircraft in the area.

2. MISSION ROUTE

Aircraft left Takhl1 for Gulf of Tonkin for refueling with Brown Anchor then direct to 21°07'N/107°38'E direct to 21°14'N/106°27'E direct to 21°14'N/106°12'E to target. Egress was the reverse of inbound route.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 3

- 2 - 3,000 lb bombs
- 1 - QRC-160
- 1 - 650 gal tanks
- 1 - gun (1,029 rounds)

F-105 BLUE 2, 4

- 6 - 750 lb bombs
- 1 - QRC-160
- 2 - 450 gal tanks
- 1 - gun (1,029 rounds)

MIG-17 MIG 1, 2, 3, 4, 5

Silver in color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clouds 1200 ft scattered to broken; visibility 3 miles in haze at 6000 ft.

	<u>BLUE</u>			
	1	2	3	4
<u>Altitude:</u>	---1500 ft AGL---			
<u>Heading:</u>	-----276°-----			
<u>Speed:</u>	----Unknown----			
<u>Fuel State:</u>	----Unknown----			

Flight Formation: Tactical

5. INITIAL DETECTION

BLUE Flight had been warned of airborne MIGs by BIG EYE. Contact was made visually by BLUE 4 at his 3 o'clock position. BLUE Flight was at 1500 ft altitude heading 276° and MIGs were low, on the deck.

6. ACTION INITIATED

When MIGs turned into 6 o'clock of BLUE 1, two and one-half miles back, BLUE Flight lit afterburner and accelerated away.

7. SITUATION DEVELOPMENT

BLUE Flight hit the target and on egress again saw MIGs, this time at 10 o'clock but again out ran them.

9. EQUIPMENT PROBLEMS

- BLUE 2, 3, 4 QRC Pod didn't work
- BLUE 4 Had a compressor stall and had to divert into Danang. Unable to refuel also.
- BLUE 1 Overload on battery -- had to shut it down.

10. AIRCREW PROBLEMS

Experience: BLUE 4 about his 52 mission.

Comments on this Encounter:

BLUE 4: I don't believe the MIGs saw BLUE 3 or 4. The MIGs must have been under GCI control because of the haze layer.

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Comments from Overall Experience

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BLUE 4: The QRC Pods are good. The MIGs are a lot less threat than the SAMs and the AAA.

11. DATA SOURCE

Project Interviews: BLUE 4, 4 Feb 1967.

Messages, Reports:

366 TFW DM3 PASTEL 552 OPREP-3 211244Z Jan 67

12. NARRATIVE DESCRIPTION

BLUE Flight inbound to the target at an altitude of 1500 ft AGL heading 276° where BLUE 4 sighted four MIG-17s at his 3 o'clock position. The MIGs were three miles out, and at about ground level (about 1000 ft below the flight). The MIGs turned into the flight and went around the back to BLUE 4's 8 o'clock position, 6 o'clock to BLUE 1 about two and one-half miles behind BLUE 1. BLUE 4 then called them out to Lead who went afterburner and accelerated away.

BLUE Flight then dropped ordnance on their assigned target. On egress about halfway out along the ridge, at 21°25'N/106°36'E, BLUE 4 saw one MIG-17 at his 10 o'clock position, low, 3 - 4 miles out, heading approximately 90° from BLUE Flight who were at 2500 ft, heading 096°. The MIG turned and paralleled BLUE Flight's path. The MIG turned to a reciprocal heading, about 1 mile north of BLUE Flight and went by, disappearing behind and below. BLUE Flight continued on and egressed the area for an air-to-air refueling.

BLUE 1, 2, and 3 returned home safely but BLUE 4 diverted into Danang because he was unable to refuel and because of an engine compressor stall. No aircraft received damage.

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Event II-143

Aircraft Involved: Four F-105Ds vs two MIG-19s

Result: No damage

Vicinity of Encounter: 21 14'N/106 18'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/1621H

Four F-105D aircraft (BLUE Flight) were the last strike flight attacking JCS 18.23. They were part of a larger strike force which included, as support, a flight of F-4Cs which was at an unknown location near BLUE Flight during the encounter.

2. MISSION ROUTE

BLUE Flight was from Takhli but the route is unknown.

3. AIRCRAFT CONFIGURATION

F-105D BLUE 1, 2, 3, 4

2 - 3,000 lb bombs

The other stores are unknown but probably included a QRC-160 pod and a centerline tank.

11. DATA SOURCES

355TPW 211400Z Jan 67 OPREP-3 DOTO-O 0265

12. NARRATIVE DESCRIPTION

At 0820Z while BLUE 4 was in the vicinity of 21°14'N/106°18'E at 6,000 feet he saw 2 MIG-19s under the flight approximately 2,000 feet below on a heading of 150 degrees.

As BLUE 4 continued on the MIGs rolled around behind BLUE 4 and made a left hand climbing turn under the flight.

As the flight rolled in on the target, (at 0821Z) BLUE 4 went into his divebomb pass with the MIGs now at 3 o'clock waiting for BLUE 4 to come out of his bomb run. BLUE 4 released his ordnance on the target and then started up and to the left, then turned to the right at which time the MIGs attacked at 1,000 feet. As BLUE 4 began to turn into the MIGs the MIGs attempted one pass. BLUE 4 then went to afterburner and left the MIGs in a right descending turn about 30 seconds after leaving the target.

BLUE 4 was the only flight member involved with the MIGs.

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Event II-144

Aircraft Involved: Four F-105s vs five to eight
MIG-17s

Results: One F-105 damaged

Vicinity of Encounter: 21°13'N/106°24'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 21 January 1967/approximately 1620H

Four F-105s on a SAM suppression mission in support of a strike in the Hanoi Delta region. The strike force was to hit the Bac Giang railroad and highway bridge (JCS 18.23).

2. MISSION ROUTE

Takhlil to air refueling over the Gulf of Tonkin, then north to the coast at 21°00'N/107°21'E. Direct to 21°13'N/106°24'E. The egress route was the reverse.

3. AIRCRAFT CONFIGURATIONS

F-105F BLUE 1 and 3

2 - AGM-45
2 - CBU-24
2 - 450-gal tanks
1029 rounds 20mm ammo

F-105D BLUE 2 and 4

6 - 500-lb bombs
2 - 450-gal wing tanks
1029 rounds 20mm ammo
All aircraft camouflaged

MIG-17

Dull silver with Red Star
Armament unknown
Had afterburners
Drop tanks were seen as they were jettisoned

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Clear 3 to 5 miles visibility below 7000 ft.

BLUE 1, 2, 3, 4

Altitude: 2500 ft
Heading: 090°
Speed: 500 KTAS
Fuel State: 10,000 lb

Flight Formation

The flight had just fired a SHRIKE at an altitude of 6000 ft on a heading of about 300 degrees and had completed a right diving turn to a heading of east. BLUE 1 in front and BLUE 3 and 4 off to his left 2-3000 ft out. BLUE 2 was inside the turn and 6-7000 ft back. BLUE 2's burner went out in the turn.

5. INITIAL DETECTION

MIG warnings had been received by the flight prior to entering the target area from BIG EYE. But none were received for this specific encounter.

BLUE Flight heading east, 2500 ft altitude, and 500 knots. BLUE 4 called two MIG-17s at 10 o'clock, 500 to 1500 ft high and parallel to the flight's direction, about 1 mile away. Three to four seconds later BLUE 2 called MIGs at 3 o'clock high. The MIGs at 3 o'clock were at close range, but opening on BLUE 2.

6. ACTION INITIATED

BLUE Flight jettisoned tanks and ordnance; lit afterburners and attempted to outrun the MIGs.

7. SITUATION DEVELOPMENT

The MIGs at 10 o'clock attacked BLUE 3 and 4 causing them to break left and separate from the rest of the flight. The MIGs inflicted two hits on BLUE 4 before BLUE 3 and 4 were able to accelerate away from them.

The MIGs called at 3 o'clock, dropped in on BLUE 1's 6 o'clock position and fired at BLUE 1. BLUE 2 called a break and fired at the MIGs. The MIGs broke left as BLUE 1 broke right. Then two other MIGs attacked BLUE 2 and chased him for several miles firing several rounds of ammo. BLUE 2's afterburner was inoperative consequently he was unable to outrun or maneuver away from the MIGs. Finally the MIGs broke off and BLUE 2 egressed the area.

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8. ORDNANCE

BLUE 1, 3, and 4 None
 BLUE 2 310 rounds 20mm in 3 bursts Damage unknown
 MIOs At least four MIOs fired at the flight
 MIO 2 (one of the about 4) 23mm hits in BLUE 4's aircraft

9. EQUIPMENT PROBLEMS

BLUE 2's afterburner went out and would not relight. His gun did not fire after the second burst for a few seconds. He pulled the trigger several times before it began to operate. The two mirrors in the F-105 do not offer real good coverage of the 6 o'clock position. There is also a lot of reflection with the double canopy and at some angles you can't see through the canopy at all. He was not able to change switch settings from ground to air attack in time, consequently did not have a sight.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>	
BLUE 2	400	200	20	BLUE 2, after completing flight school, attended F-105 gunnery at Nellis AFB direct to SEA.
BLUE 4	3800	1000	Unknown	Has flight experience in the F-84F, F-101, and F-105B/D.

BLUE 2 had problems switching from a ground attack mode to air-to-air; recommend a switch on the throttle to switch over. Also the mirror is inadequate due to the reflection of light through the double canopy. BLUE 2 felt the only reason he was not hit was because he was so close to the ground the MIGs could not track. He felt the speed capability of the F-105 was excellent under normal conditions but since his burner did not work he was not able to get any air speed.

BLUE 4 felt he was able to outrun the MIGs quite easily and this is the reason they broke off the attack.

11. DATA SOURCES

Project Interviews: BLUE 2, 17 March 1967; and BLUE 4, 8 February 1967
Messages, Reports: 355 TFW, 211410Z, Jan 67 OPREP 3 DOTO-0-10264

12. NARRATIVE DESCRIPTION

BLUE Flight had just rolled out on a heading of east, after launching a SHRIKE missile at a Fansong radar. Speed and altitude were 500 KTAS and 3000 ft. BLUE 2 was 6-7000 ft back and inside the turn, and his afterburner went out when he applied g's in the turn, as a consequence he was not able to keep up with the flight.

BLUE 4 called MIGs at 10 o'clock, BLUE 2 called MIGs at 3 o'clock. (Five to 8 MIGs were sighted, things happened too fast from this point on for the flight members to recall how many aircraft were involved.) BLUE 1, 3 and 4 went afterburner and BLUE 1 called for the flight to jettison stores. All members of the flight jettisoned tanks and ordnance (BLUE 2 still did not have an operational afterburner.)

The MIGs at the 10 o'clock position made a left diving pursuit curve on BLUE 3 and inflicting two 23mm hits on BLUE 4 one hit the left wing and the other the left flap. BLUE 3 and 4 broke left into the MIGs and becoming separated from BLUE 1 and 2, accelerated, outrunning the MIGs and egressed the area.

The MIGs that were called out at the 3 o'clock position made a pass on BLUE 1. BLUE 2 called for BLUE 1 to break right and fired at the MIG between him and BLUE 1. At this time BLUE 2 was at 400 knots and 3-4000 ft altitude and 6000 to 7000 feet behind BLUE 1. The MIG was pulling high, opening, and the angle off was high since BLUE 2 had a good platform view of the MIG. The MIG broke off left as BLUE 1 broke hard right. At firing BLUE 2 was approximately 3000 ft or better behind the MIG when he fired. He did not observe any hits. He did not have time to switch from ground to guns air and consequently still had a fixed 108 mil depression in the sight. He fired primarily to scare the MIG off realizing he did not stand much chance of hitting without a sight. He fired three bursts. On the third burst the gun wouldn't fire until after he had pulled the trigger several times.

BLUE 2 cut off BLUE 1 in the right turn so then they were almost abreast and heading south. BLUE 1's EWO in the backseat called, "break". BLUE 2 broke hard left and down as 37mm cannonshells went by the canopy. The MIG started shooting again and BLUE 2 reversed turn to the right descending to within 20-50 ft above the ground as the bullets went by the canopy. BLUE 2 could see the shells hitting the ground in front of the aircraft, BLUE 2 then lost track of BLUE 1 while at 370 knots heading south. He turned back to the east and BLUE 2's airspeed was now about 350 knots. He was right on the deck with two MIGs on his tail; one on each side about 3000 ft back and slightly high. The MIGs fired

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and BLUE 2 jinked left and right, attempting to turn into each attack as the MIG turned in to fire. The MIG's fire passed to either side of him. This situation lasted for 5 or 6 miles; the MIGs shooting and BLUE 2 dodging bullets, and staying low. Finally the MIGs either got too far from Kep or ran out of ammunition, since they quit firing and broke off to the right and BLUE 2 turned left toward the coast.

BLUE 1, on egress, heard the calls of BLUE 2 and started to turn back to help BLUE 2, but by then the MIGs had broken off so BLUE 1 turned to an exit heading.

While alone on egress, BLUE 4, at 5000 ft altitude and 600 knots saw one MIG-17 at 12 o'clock low, 1-1/2 to 2 miles away. The MIG was at 500 ft altitude on a reciprocal course. No action was taken by either the MIG or BLUE 4, and BLUE 4 continued to egress to the tanker.

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Event II-145

Aircraft Involved: Four F-105s vs four MIG-17s

Result: No damage

Vicinity of Encounter: 21°17'N/105°53'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 22 January 1967/0936H

Four F-105s were on a strike mission. The target was a group of railroad tracks at Thang Quang siding. The flight was one of four in a gaggle formation and was last flight in on target.

2. MISSION ROUTE

Departed Korat and refueled. Then proceeded NE to the upper end of Thud Ridge to pick up F-4 escort. Then down SE to target. Came off target in southerly heading and went into right turn to proceed up Thud Ridge.

3. AIRCRAFT CONFIGURATION

F-105 BLUE 1, 2, 3, 4

6 - 750 lb GP bombs
2 - 450 gal tanks
1 - QRC - 160 POD
1 - SIDEWINDER (AIM-9)
TACAN - Rec. only; Radar, Stby, IFF/Stby, Pod/On, Doppler/Off

MIG-17 MIG 1, 2, 3, 4

Armament unknown
Silver color

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Broken variable scatter, tops at 5,000 ft. Visibility 10 mi in haze.

	<u>BLUE 1 & 2</u>	<u>3 & 4</u>
Altitude:	7,000 ft	4,000 ft
Heading:	290°	Unknown
Speed:	550 kt	
Fuel State:	Unknown	

5. INITIAL DETECTION

MIGs first seen by BLUE 1 while in a left turn at his 8 o'clock position 5-6,000 ft out at 4,000 ft altitude at 0936H.

6. ACTION INITIATED

BLUE 1 stayed in his slight left turn and continued ahead. He was already in front of MIGs and his speed was up. BLUE 2 went high. BLUE 3 and 4 turned and closed on MIGs.

7. SITUATION DEVELOPED

BLUE 3 and 4 closed in on MIG 1 and 2. BLUE 3 went after MIG 1 who never got any closer than 3,000 ft on BLUE 1. BLUE 3 fired his missile which seemed to be at good range whereupon BLUE 1 broke hard right and downward and MIG 1 broke very hard left and descended very rapidly. Missile did not appear to guide due to high g load. All aircraft continued up Thud Ridge.

8. ORDNANCE

	<u>No. fired/No. hits</u>	<u>Remarks</u>
	<u>SIDEWINDER</u>	
	<u>AIM-9B</u>	
BLUE 1, 2, 4	None	
BLUE 3	1/0	Did not guide.
MIG 1, 2, 3, 4		Unknown

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9. EQUIPMENT PROBLEMS

BLUE 3 had two bombs hung up and also a missile that appeared not to guide during MIG high g turn.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
BLUE 3	2600	70	50

Comments on This Encounter:

BLUE 1 MIGs possibly just came out of Phuc Yen taking off to the SE and making a 180° turn to the left. They already had the speed advantage and didn't want to slow down. Didn't feel it was wise to chase them down to the middle of Hanoi.

BLUE 2 Missiles did not perform the g load required to take it.

BLUE 3 As he set up for the missile, he thought that he heard the missile tone and everything appeared perfect. The visibility was bad that day and so it could have been that because of the haze layer that the SIDEWINDER did not track properly. MIGs made no attempt to follow the BLUE Flight.

Comments from Overall Experience:

BLUE 1 The F-105 system is an air-to-ground weapon system. Therefore, it is not as agile as a pure fighter system. It should not be required to do so much maneuvering in order to defend itself in the air superiority role. The F-105 should have a weapon system that can work around the clock.

BLUE 2 This is probably the first firing of a missile from a Thud so it might have surprised the MIGs quite a bit.

BLUE 3 To go from a bombing mode to an air-to-air mode requires at least four steps in the fire control system. Need more SIDEWINDER firings in training.

11. DATA SOURCES

Project Interviews:

BLUE 1, 2 and 3, 16 Feb 67

Messages, Reports:

388TFW 220600 Jan 67, OPREP 3, DOI 1225

12. NARRATIVE DESCRIPTION

The flight came off the target in a right turn through a southerly heading. BLUE 2 was joining on BLUE 1 who had gone into a left shallow turn and was 2,000 ft back. BLUE 3 did some S-turns off so that he and BLUE 4 could rejoin as BLUE 3 had hung ordnance and wanted it confirmed by BLUE 4. BLUE 3 jettisoned the ordnance armed in the vicinity of 31°30'N/105°10'E after the encounter. BLUE 1 heading 290°, 7000 ft altitude, and 550 kts CAS observed four MIGs at his 8 o'clock position climbing in a left 10° bank turn out of 4,000 ft in an element of two, heading 300°. He called the MIGs out to the rest of the flight at which time he observed the MIGs turning into him and closing to within 3,000 ft. This is as close as the two MIGs ever got. No one else in the formation ever saw MIG 3 and 4 and BLUE 1 lost sight of them after the initial sighting. Meanwhile, BLUE 2 high speed yo-yo'ed on the MIGs in an attempt to get into the 6 o'clock. BLUE 3 and 4 also saw the MIGs at their 9 o'clock, turned into them to engage, rolling out at their 6 o'clock 7,000 ft behind with a positive overtake. BLUE 1 then called for the flight to set up their missile switches which BLUE 2 and 3 acknowledged. BLUE 1 then saw the MIGs approaching the 6 o'clock and began jinking. The MIGs stayed with them. By this time BLUE 2 is line abreast with the MIGs and is about to turn into them when BLUE 3 calls that he is about to launch the missile. BLUE 2 then calls out that he will stay out of the way and BLUE 3 closes to within 3,000 ft of MIG 1. MIG 2 meantime, is on the left wing of his leader following him and BLUE 4 is on the right of BLUE 3. BLUE 3 then calls missile away, Alt 7,000 ft, speed 550 kt and BLUE 1 goes into a hard turn to the right and down. MIG 1 simultaneously goes into a very hard, steep descending turn to the left after the missile is fired. Missile seems as though it is unable to keep up with the g loads of the MIG. BLUE 3 at this point cannot see MIG 2 since he has overflown him and is under his aircraft's nose. So BLUE 3 does an S-turn to the right and BLUE 1 performs a turn to the left. Both see the two MIGs in a descending turn to the south towards Hanoi. BLUE 2 then rejoins with BLUE 1, with BLUE 3 and 4 3 to 5 miles behind, and all four aircraft fly up the ridge and head home. They do not follow the MIGs due to a high SAM threat in Hanoi area.

SECRET

RED BARON EVENT II-145 SUMMARY

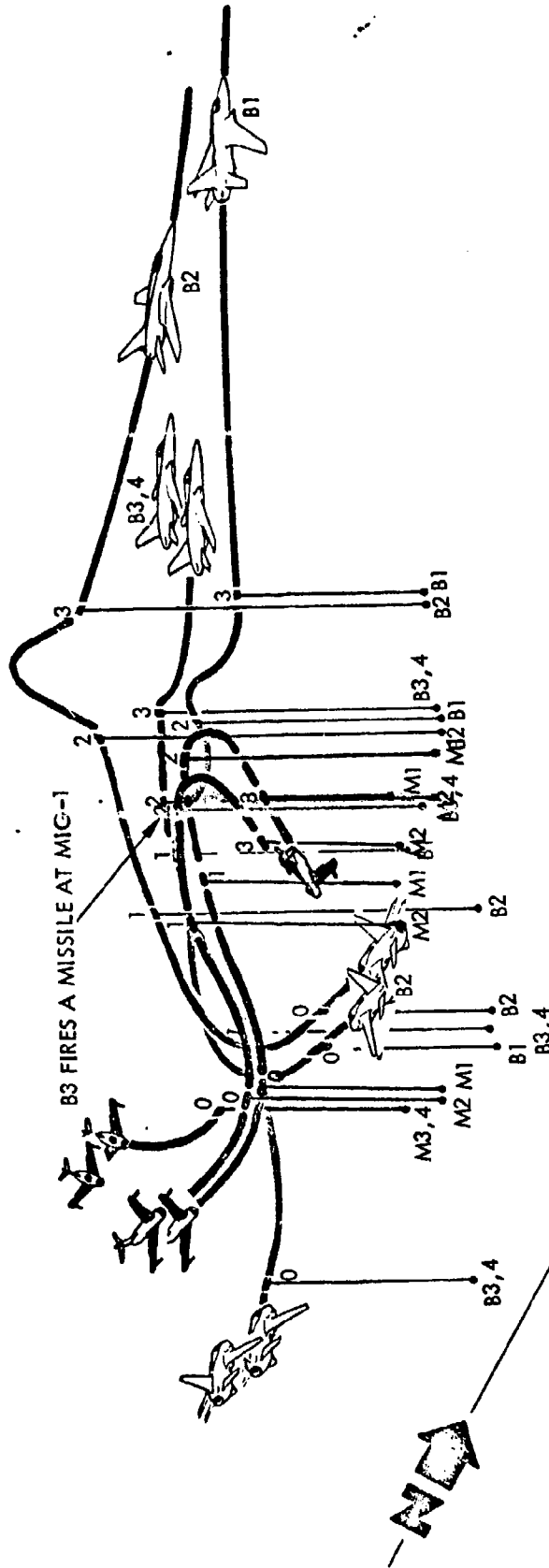
Time Mark	Action Aircraft (BLUE 1, 3, 4)		Other Friendly	Communications	Enemy Actions (MIG 1,2)	Remarks
	Status	Action				
T ₀	Alt: 7,000 ft climbing Speed: 550 kt Head: 290°	B1 sees MIGs at 8 o'clock 5-6,000 ft back 4,000 ft alt at approximately 450 kt.	B3 & 4 had re-joined off target as B3 had hung ordinance and had to jettison them. B3 sees MIGs at 9 o'clock.	B1 called out 4 MIGs at 8 o'clock. B3 calls B4 "Those are MIGs." B4 "Roger".	MIGs in left turn 10° head 300°. Sees B1 roll right to engage.	MIG appear to be in traffic pattern and just taking off from Phuc Yen. B3 jettisoned the ordinance after the encounter.
T ₁	Alt: 7,500 ft Speed: 550 kt	B1 begins scissors. Call B3 to set up switches. B2 goes high trying to get behind MIGs	B3 & 4 turn into MIGs and roll out 7,000 ft behind MIG 1's 6 o'clock. B4 on wing of 3.	B1 calls B3 to set up switches. B3 calls setting up switches as does B2. B3 in afterburner. B3 calls ready to fire missile.	MIG close to within 3,000 ft of B1's 6 o'clock position and Jinx with B1.	
T ₂	Alt: Descending Speed: Increasing	B1 breaks downward to the right. B2 line abreast with MIGs and stays high and out of the way.	B3 fires missile at 3,000 ft. Loses sight of MIG 2. Begins an S-turn to the right.	B3 calls missile away. B2 calls staying out of way and high.	MIGs break hard to the left and down. After being in a right 20° break to the right when missile fired.	Missile appears to track at first but doesn't seem to be able to withstand high g's forced on it by MIGs tight turn.
T ₃		B1 goes into left turn and sees MIG descending left.	B3 sees MIGs in descending left turn.			

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Event II-145

21°-10'



SECRET

Aircraft Involved: Four F-105s vs four MIG-17s

Result: No Damage

Vicinity of Encounter: Approximately 21°10'N/106°30'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 27 January 1967/Unknown

Four F-105s on a strike mission against a railroad yard northeast of Kep.

2. MISSION ROUTE

Departed Korat RTAFB for the Gulf of Tonkin for air refueling, then direct to 20°08'N/107°43'E, direct to 21°10'N/107°34'E, directly west to target.

3. AIRCRAFT CONFIGURATIONS

F-105s BLUE 1, 2, 3, 4

- 1 - AIM-9B (SIDEWINDER)
- 1 - Gun (1,029 rounds)
- Other armament unknown

MIG-17s

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Overcast with tops at 5,000 ft. Visibility was good above the clouds. Target only area open. Area south of target cloud covered.

BLUE 1, 2, 3, 4

Altitude: 15,000 ft
 Heading: Westerly
 Speed: 500-520 KTAS
 Fuel State: Unknown
 Flight Formation: Pod

5. INITIAL CONTACT

BLUE 3 initially sighted the MIGs at 10 o'clock position, low and climbing at about 12 miles. Clear silhouette of MIG-17s.

6. ACTION INITIATED

When MIGs turned into flight, BLUE Flight turned left into MIGs.

7. SITUATION DEVELOPMENT

MIGs broke off and continued reciprocal heading. No engagement.

8. ORDNANCE

None expended.

10. AIRCREW COMMENTS

Experience

	Total Hours	F-105 Hours	Combat Missions
BLUE 3	1200	700	67
BLUE 1	4300	100	20
BLUE 2 and 4	Not interviewed		

Comments on This Encounter

BLUE 3 - MIGs were probably GCI controlled.

Comments from Overall Experience

BLUE 3 - F-105 needs more wing area and more power. One improvement to our training would be to practice against other aircraft, such as an F-102 which is highly maneuverable. Enough information is displayed for the guns but range should be digital readouts and not analogue. "Terrible visibility from the 4 to 8 o'clock position" in the F-105 and mirrors are useless for other than watching wingman during taxiing. Seems that MIG pilots aren't very experienced.

SECRET

Event II-146

11. DATA SOURCES

Project Interviews: BLUE 1 and BLUE 3

12. NARRATIVE DESCRIPTION

BLUE Flight was inbound to the target at 15,000 ft, heading westerly at 500 to 520 knots when BLUE 3 spotted two MIG-17s at 10 o'clock position and low. (Other members of flight reported total of four MIGs.) It appeared as though the MIGs had just taken off. The MIGs turned into the flight as if to engage, and BLUE flight turned left into them. The MIGs then broke off the engagement and continued in an easterly direction and climbing. After 30° of turn, BLUE Flight headed toward the target, dropped ordnance and egressed the area returning safely to home station. No damage or encounter logged.

SECRET

SECRET

Event II-147

Aircraft Involved: Four F-105Ds vs three
MIG-21s

Result: No damage

Vicinity of Encounter: Approximately 21°20'N/
106°40'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 29 January 1967/Unknown

Four F-105Ds (BLUE Flight) were on a strike mission against the Northeast Railroad.

11. DATA SOURCES

Project Interview: Member of BLUE Flight, 15 Feb 67

12. NARRATIVE DESCRIPTION

BLUE Flight was on a strike against the Northeast Railroad. They ingressed to the target over the water route and the weather en route was poor. BLUE Flight was the flak suppression flight and was leading the strike force. There was only one other strike flight due to aborts but there were MIGCAP F-4s in the area, which were heard on the radio.

BLUE Flight was heading roughly west over the mountains, and before they got to the Delta a bogey was seen far out at 9 o'clock slightly high and he turned into BLUE Flight and dived below as if to make a 90 degree beam attack. As the bogey approached, it was identified as a MIG-21 and then two more were seen. The three MIG-21s were all in trail about 3 to 5000 feet apart, all on the same attack path. The MIGs were originally on an opposite heading to BLUE Flight. The MIGs turned north towards BLUE Flight, and when 1-1/2 to 2 miles out, turned off to the east and disappeared. The other F-105 flight turned into the MIGs, but did not follow them and both flights then went over to hit the target.

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Event II-148

Aircraft Involved: Four F-105s vs four MIG-21s

Result: Sighting only

Vicinity of Encounter: 22°00'N/105°35'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 February 1967/0848H

Prior to reaching the primary target, the strike group was diverted due to unsatisfactory weather in the target area.

2. MISSION ROUTE

Unknown

3. AIRCRAFT CONFIGURATIONS

Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

	<u>BLUE 1, 2, 3, 4</u>	<u>MIG 1, 2</u>	<u>MIG 3, 4</u>
Altitude:	14,000 ft	25,000 ft	28,000 ft
Heading:	270°	110°	080°

5. INITIAL DETECTION

Details of the initial detection are unknown. Four MIG-21 airplanes were sighted in flights of two airplanes each. Both flights quickly disappeared to the southeast. Closest approach of the MIGs was estimated to be five miles.

6. ACTION INITIATED

No action by either side.

7. SITUATION DEVELOPMENT

None. Sighting only.

8. ORDNANCE

None

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

No data.

11. DATA SOURCES

Messages: 388TFW OPREP-3 040355Z Feb 67 FASTEL DOI 156 Feb 67
388TFW OPREP-3 0405 0Z Feb 67 DOI 0357 Feb 67

12. NARRATIVE DESCRIPTION

Details of the initial detection are unknown. Four MIG-21 airplanes were sighted in flights of two airplanes each. Both flights quickly disappeared to the southeast. Closest approach of the MIGs was estimated to be five miles.

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SECRET

Event II-149

Aircraft Involved: Four F-105s vs six MIG-21s

Result: Sighting only

Vicinity of Encounter: 21°15'N/104°20'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 February 1967/0730H

2. MISSION ROUTE

Unknown

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4 (Ordnance load estimated from limited available data)

- 1 - AIM-9B
- 4 - CBU-24 pods
- 2 - 450 gal external fuel tanks
- 1 - M-61 gun (1029 rd ammo)

MIGs - Unknown

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

BLUE 1, 2, 3, 4

Altitude: 18,000 ft
Heading: Unknown
Speed: 400 KIAS

5. INITIAL DETECTION

BLUE 2 first sighted two MIGs at 2 o'clock, high, at three miles.

6. ACTION INITIATED

F-105s engaged afterburner and maneuvered mildly to keep the MIGs in sight.

7. SITUATION DEVELOPMENT

Two MIGs were approaching head-on with two additional MIGs approximately 6,000 ft in trail. The first two MIGs pulled up into a steep wingover and dropped in at 5 o'clock; then the MIGs broke away.

8. ORDNANCE

None expended.

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

Experience

	<u>Total Hours</u>	<u>F-105 Hours</u>	<u>Combat Missions</u>
<u>BLUE 2</u>	450	200	20

BLUE 2 was very impressed with the turning ability of the MIG-21.

11. DATA SOURCE

Project Interviews: BLUE 2, 6 Feb 1967.

12. NARRATIVE DESCRIPTION

BLUE Flight was enroute to the target, at 18,000 ft, 400 KIAS, when BLUE 2 sighted two MIGs at 2 o'clock, high, at approximately three miles. BLUE 1 (lead) then saw two more MIGs approach head-on, co-altitude. BLUE 3 saw another section of MIGs about 6,000 ft, low, in-trail, with this lead section. As the MIGs passed head-on they pulled up into a steep wing-over and dropped into the 5 o'clock position on BLUE Flight. The MIGs suddenly broke away and disappeared. No ordnance was fired.

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SECRET

Event II-150

Aircraft Involved: Four F-105s vs three
unidentified aircraft

Result: Sighting only

Vicinity of Encounter: 21°20'N/104°50'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 February 1967/0859H

Four F-105 airplanes were a part of a larger strike group. The group had been diverted from the primary target due to adverse weather in the area.

3. AIRCRAFT CONFIGURATIONS

F-105 BLUE 1, 2, 3, 4

2 - 3,000-lb bombs
1 - AIM-9B SIDEWINDER
1 - M-61 Gun (full 20mm ammo)

5. INITIAL DETECTION

The flight observed three unidentified aircraft. One silver aircraft closed to within one n mi of the flight in the 6 o'clock position.

6. ACTION INITIATED

The flight jettisoned bombs.

11. DATA SOURCES

Messages:

388TFW/OPREP-3/040355Z Feb 67/DOI 156 Feb 67.

Other:

RED BARON MIG Incident Summary.

SECRET

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Event II-151

Aircraft Involved: Four F-105s vs two MIG-17s

Result: No damage

Vicinity of Encounter: 20°26'N/105°45'E

1. PRIMARY MISSION AND TACTICAL SITUATION

Date/Time: 4 February 1967/1600H

Four F-105 airplanes had completed an attack and were departing the target area.

2. MISSION ROUTE

Unknown

3. AIRCRAFT CONFIGURATIONS

F-105 B1, 2, 3, 4

1 - M-61 gun

1 - SIDEWINDER (AIM-9B)

4. FLIGHT CONDITIONS PRIOR TO ENCOUNTER

Weather: Visibility less than five miles in haze and smoke.

5. INITIAL DETECTION

BLUE 3 sighted two MIG-17 airplanes on a heading of 220° in a descending, right turn. The MIGs leveled off approximately 1/2 to 1 n mi, 20° to the right of the nose of BLUE 3, and 500 ft above BLUE Flight.

6. ACTION INITIATED

The MIGs immediately pulled up into a steep, climbing, right turn and disappeared into the haze.

7. SITUATION DEVELOPMENT

Just before the MIGs disappeared BLUE 3 launched a SIDEWINDER that appeared to follow the MIGs into the haze. No detonation of the missile was observed. BLUE 3 engaged afterburner in an attempt to regain contact with the MIGs.

8. ORDNANCE

(No. fired/No. hits)

SIDEWINDER
AIM-9B

Remarks

BLUE 3

1/0

Results unobserved. Lost sight of the missile and the MIG in the haze.

9. EQUIPMENT PROBLEMS

None reported.

10. AIRCREW COMMENTS

No data.

11. DATA SOURCES

Message:

355TFW/OPREP-3/041320Z Feb 1967 DOTO-0-10436 Feb 67.

12. NARRATIVE DESCRIPTION

BLUE Flight had completed an attack and was egressing from the area when BLUE 3 sighted two MIG-17 airplanes. No previous MIG warning had been received when BLUE 3 called a warning. The MIGs were on a heading of 220° in a descending, right turn. After leveling off approximately 1/2 to 1 n mi, 20° to the right of BLUE 2, and 500 ft above BLUE Flight, the MIGs pulled up into a steep, climbing, right turn. Just before the MIGs disappeared into the haze, BLUE 3 launched a SIDEWINDER toward the MIGs. The missiles appeared to track but no detonation was observed. BLUE 3 engaged afterburner in an attempt to regain contact with the MIGs. There were no further MIG sightings as BLUE Flight returned to base undamaged.

SECRET



DEPARTMENT OF THE AIR FORCE
11TH WING



28 June 2001

MEMORANDUM FOR: DEFENSE TECHNICAL INFORMATION CENTER

FROM: 11 CS/SCS (MDR)
1000 Air Force Pentagon
Washington, DC 20330-1000

SUBJECT: Mandatory Declassification Review Request, Air Force Case Number
01-MDR-023

Reference W. Howard Plunkett (Lt Col, USAF Retired) letter, dated 16 April 2001 (attachment 1) requesting a mandatory declassification review of the following documents:

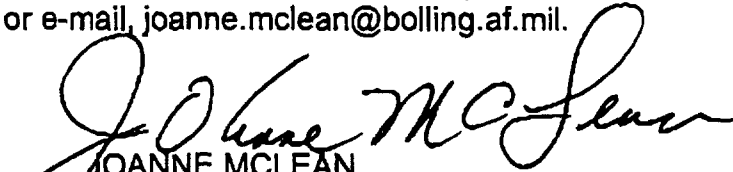
WSEG-116-VOL1. "Air-to-Air Encounters in South East Asia, Vol. I. F-4 Events Prior to 1 March 1967." DTIC number AD-C003 627

WSEG-116-VOL 2. "Air-to-Air Encounters in South East Asia Vol. II, F-105, Events Prior to 1 March 1967." DTIC number AD-C003 628

WSEG-116-VOL 3. "Air-to-Air Encounters in South East Asia Vol. III. "Events from 1 March 1967 to 1 August 1967 and Miscellaneous Events." DTIC number AD-C003 629

The following documents was reviewed by the appropriate Air Force agencies and document numbers AD-C003 627, AD-C003 628, and AD-C003 629 have been downgraded to UNCLASSIFIED.

Address any questions concerning this review to the undersigned at DSN 426-7265, COMM (703) 696-7265 or e-mail, joanne.mclean@bolling.af.mil.


JOANNE MCLEAN
Mandatory Declassification Review
Manager

1 Attachment
W.H. Plunkett's Letter, 16 Apr 01

cc: W. Howard Plunkett

**REFERRAL from: 11 CS/SCS(MD
R)**

INTERNAL ID: 0503101001

RECEIVED: 03-May-01

REVIEWER: 27

AGENCY ID: 00-MDR-023

SUSPENSE: 17-May-01

RETURNED:

AGENCY: 11 CS/SCS(MDR)

POC: JOANNE MCLEAN

PHONE: () 696-7265

TITLE: 3 DTIC VOLUMES TITLES AIR TO AIR ENCOUNTERS IN
SOUTHEAST ASIA

ISSUE:

CLASSIFICATION: SECRET

DOWNGRADE?: No

ACTION: DECLASSIFY

DOWNGRADE CLASS:

EXEMPTION CATEGORY:

RD: No

OPR / EQUITY HOLDER: AIR FORCE

FRD: No

OTHER EQUITIES:

SIOP DATA: No

COMMENTS: AIR FORCE HAS REVIEWED THE DOCUMENTS AND FIND NO
MATERIAL THAT NEEDS TO REMAIN CLASSIFIED.

Material is releasable to the public.

*Jean B. Hardin, SMSgt,
USAF*

OPTIONAL FORM 88 (7-90)

FAX TRANSMITTAL

of pages -

To: SMSgt Hardin	From: J McLean
Dept./Agency	Phone: 7/696-7265
Fax: 3/913-6147	Fax: 7/696-7273

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