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MISSION #19

MUKDEN

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S E C R E T

HEADQUARTERS
XX BOMBER COMMAND
APO #493

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: By auth of the C.G. :
: XX Bomber Command :
: 19 Dec 44 :
: Date Initials :
:

TACTICAL MISSION
REPORT

Field Orders No. 19

Mission No. 19

TARGET: MANCHURIA AIRPLANE MANUFACTURING COMPANY

Mukden, Manchuria

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Prepared by:

Intelligence Section
XX Bomber Command

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19 December 1944

SUBJECT: Report of Operations, 7 December 1944.

TO : Commanding General, Twentieth Air Force, Washington 25, D.C.

1. UNITS PARTICIPATING: The four Bombardment Groups of the XX Bomber Command were directed by Field Orders Number 19 to participate in a maximum-effort daylight attack on D-day against the Manchuria Airplane Manufacturing Company, Mukden, Manchuria. Groups, their locations, and their Commanding Officers were as follows:

<u>Group</u>	<u>Rear Base</u>	<u>Forward Base</u>	<u>Commanding Officer</u>
40th	Chakulia	Hsinching	Col. W.H. Blanchard
444th	Dudhkundi	Kwanghan	Col. A.L. Harvey
462nd	Piardoba	Kiunglai	Col. A.F. Kalberer
468th	Kharagpur	Pengshan	Lt. Col. J.D. Edmundson

2. IDENTIFICATION OF MISSION:

a. Attack No. 19.

b. Targets Specified:

- (1) Primary Target: Manchuria Airplane Manufacturing Company. Mukden, Manchuria (AAF Target No. 93.3 - Target No. 177).
- (2) Secondary Target: Manchuria Dockyard Company, Drydocks and Shipping, Dairen, Manchuria (AAF Target No. 93.5-10).
- (3) Last Resort Target: Railroad Yards, Chenghsien, China (14th Air Force Target Chart No. 93).

3. STRATEGY AND PLAN OF OPERATIONS:

a. Importance of Targets:

(1) Primary Target: The Manchuria Airplane Manufacturing Company is a medium size aircraft assembly plant believed to be primarily or exclusively producing final-stage training aircraft resembling the obsolescent Nate. There are differences of opinion among photo interpreters as to whether aircraft engines are produced by this Company. The majority conclusion suggests that no engines are produced but that they are obtained elsewhere, possibly from the Mukden Arsenal and its satellite factories. Nevertheless, this Company does contain a number of buildings housing machine tools, presses, and jigs. The damage or destruction of this machinery would delay or halt aircraft production for as long a period as six months.

(2) Secondary Target: The Manchuria Dockyard Company can handle ships up to 10,000 tons. There are 3 drydocks (440, 556, and 650-

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700 feet) and several building slips. This Company builds and repairs ships' engines and machinery. There are also numerous shops with modern equipment including welding, machine, boiler, erecting, and electric shops as well as a pneumatic plant and foundry.

(3) Last Resort Target: The Yards at Chenghsien have become increasingly important with the Japanese occupation and reconstruction of the Peking-Hankow Railroad. This line provides the enemy with an alternative supply route and thus lessens the amount of traffic to be carried by the Yangtze River. The Chenghsien Yards form a possible bottleneck and an air attack against them would temporarily impede the flow of Japanese military traffic along the line.

b. Details of Planning (See also Annex N, Field Orders):

(1) Operational Planning:

(a) This mission, originally devised as an alternate plan, was used as such when the weather over the target first planned became unfavorable after the aircraft had arrived in the forward area for the mission. The mission originally planned was postponed from 3 to 4 December, then to 5, then to 6, and finally to 7 December with the possibility that the weather would remain unfavorable for a considerable length of time. As a result, Twentieth Air Force was asked for a decision on the advisability of substituting the strike against Mukden. Permission was granted to substitute this strike and the final decision to do so was made only a few hours prior to take-off time.

(b) The Manchuria Aircraft Manufacturing Company was an excellent target for an alternate strike. The aircraft had been loaded with bombs suitable against this type target and Mukden was approximately the same distance from the forward area bases as the target first planned. Thus, it was not found necessary to change the type and number of bombs or the gasoline load.

(c) Airplane Commanders were instructed not to test fire machine guns or indiscriminately bomb Chinese cities. This action was taken at the request of the Chinese Communists.

(d) To make assembly easier for the Groups, 4 islands near the China Coast were designated as the first assembly points. In order that stragglers would have a better chance to join a formation, a second assembly point common to all Groups was chosen.

(e) From the standpoint both of visual and radar bombing, the best axis of attack was determined to be 58 degrees magnetic. The initial point chosen was one for which aerial and radarscope photographs were available to all Groups.

(f) Crews were briefed to bomb the secondary target if the primary were cloud covered. If both were covered, the primary target was to be bombed by radar with the aiming point established as the large industrial area west of the city of Mukden.

(g) Formation leaders were given permission to break up their formations at 108 degrees longitude in order that airplane commanders could practice the instrument let down procedure for the Chengtu area.

(2) Determination of Bomb Load: The considerations affecting the determination of the bomb load were exactly the same as those for

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XX Bomber Command Mission No. 16 against Omura Aircraft Plant. See pages 3 and 4 of the Tactical Narrative and a detailed discussion in Annex O, Supplemental Information.

(3) Bombing Data:

(a) For aircraft equipped with center-section wing tanks, minimum bomb loads were established as follows: 40th - 10, 444th - 11, 462nd - 9, and 468th - 10. For aircraft not so equipped, the loads were 8 per aircraft for all Groups. It was specified that both 500-pound general-purpose (TNT or Amatol filled) bombs, fused .1 second nose and .01 second tail, and 500-pound M-76 incendiary bombs, fused instantaneous nose and non-delay tail were to be carried in each aircraft, mixed in the ratio of two demolition bombs to one incendiary bomb with the incendiaries loaded to release last.

(b) The method of bombing was to be by 12-plane formations from the following pressure altitudes: 40th - 22,000 feet, 444th - 23,000 feet, 462nd - 20,000 feet, and 468th - 21,000 feet. The aiming point was established as the southwest corner of the square formed by 3 buildings (sheet-shaping, bench work, and machinery) near the center of the plant.

4. MOVEMENT TO THE FORWARD AREA: Of the 136 combat aircraft (excluding photo reconnaissance aircraft, aircraft undergoing acceptance check, and aircraft in the depot) assigned to the Groups, 123 were airborne to the forward area and 121 of these arrived at the forward area as follows: 40th - 30, 444th - 30, 462nd - 28, and 468th - 33. Twelve aircraft landed on D-day minus 6, followed by 92 on D-day minus 5, 9 on D-day minus 4, 1 on D-day minus 3, 3 on D-day minus 2, and 4 on D-day minus 1. Two aircraft were in the forward area prior to the movement. There were no losses on this movement forward, but one aircraft of the 40th Group ground looped on landing at Hsinching. The aircraft was not able to participate in the mission but it is reparable.

5. EXECUTION OF THE MISSION (See Annexes A and K):

a. Take-off (See Annex A, Part I):

(1) Times of take-off were planned for D-day minus 1 as follows: 40th - 1930Z, 444th - 1940Z, 462nd - 1921Z, and 468th - 1925Z.

(2) Take-off was accomplished as follows:

Group	A/C in	A/C	First A/C Off	Last A/C Off
	Fwd Area	Airborne		
40th	30	27	1930Z	2025Z
444th	31	27	1944Z	2044Z
462nd	28	23	1921Z	2015Z
468th	34	31	1928Z	2109Z
Total	123	108	1921Z	2109Z

(3) Overcast at the bases on take-off was at 7-8000 feet with visibility restricted from 1 to 6 miles by haze or dust at all bases. Winds ranged from calm to 5 miles per hour.

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b. Route Out (See Annex A, Parts II and III):

(1) Route out was from base to Ankang Airfield to a separate assembly point number 1 for each Group to a common assembly point number 2 at Chuwa Island to the initial point at 40°50'N - 121°51'E to the target at Mukden.

(2) Deviations from the planned route to the Primary Target were not numerous, 15 varying from the route for the following reasons: 3 bombed the secondary target; 3 bombed the last resort target; 3 bombed targets of opportunity; 4 jettisoned their bombs; and 2 returned to base with their bombs. These deviations were divided among Groups as follows: 40th - 4, 444th - 6, 462nd - 2, and 468th - 3.

(3) The course out (and return), assembly points, and initial points were considered generally good by the crews. The selection of assembly points particularly met with favorable comment.

c. Primary Target:

(1) Of the 108 aircraft airborne on the mission, 80 aircraft bombed the primary target at Mukden. The first aircraft (a formation of 11 aircraft) released their bombs at 0122Z from 20,000 feet indicated on a heading of 46° magnetic. This formation dropped a total of 95 demolition and 42 incendiary bombs. This formation was followed by 14 aircraft at 0128Z, 11 at 0130Z, 18 at 0146Z, 1 at 0147Z, 9 at 0205Z, and 9 at 0208Z. The last aircraft over the target (a formation of 7 aircraft) released 66 demolition and 30 incendiary bombs at 0215Z from 23,000 feet indicated on a heading of 41° magnetic. During this interval of 53 minutes, the 80 aircraft dropped 734 500-pound demolition and 316 500-pound incendiary bombs on the primary target, a total of 262.5 short tons.

(2) Bombing altitudes varied from approximately 19,000 to 24,000 feet and headings ranged from 20 to 100 degrees magnetic with 63 aircraft coming into the target on headings between 40 and 60 degrees magnetic.

(3) One formation of 11 aircraft proceeded as briefed to the primary target but on the route into the target one aircraft released early and all other aircraft except the leader also released early. The bombs so released fell in the Suhuton Railway Yards, 9 miles southwest of Mukden. The leader continued his bomb run and dropped its bombs on the target at 0147Z.

(4) Weather over the target was CAVU, but some difficulty was experienced as a result of the enemy's use of a smoke screen. No difficulty in bombing was caused by either enemy antiaircraft or enemy fighters. Icing on the inside of the windows was a decided handicap to flying, bombing, and defensive firing.

d. Secondary Target: Three aircraft bombed the secondary target as follows: A/C 409 (468th) at 0117Z visually from 20,200 feet true on a heading of 287° true and at an indicated air speed of 200 miles per hour; A/C 331 (40th) at 0119Z visually from 21,200 feet indicated on a heading of 221° magnetic and at an indicated air speed of 195 miles per hour; and A/C 284 (468th) at 0213Z visually from 20,100 feet true on a heading of 258° true and at an indicated air speed of 195 miles per hour. Bombs dropped were 12 incendiary, 10 demolition and 5 incendiary, and 13 demolition respectively.

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e. Last Resort Target: Three aircraft bombed the last resort target as follows: A/C 272 (468th) at 2320Z visually from 14,200 feet true on a heading of 270° true and at an indicated air speed of 195 miles per hour; A/C 420 (40th) at 2323Z by radar from 18,000 feet true on a heading of 256° magnetic and at an indicated air speed of 190 miles per hour; and A/C 352 (444th) at 2355Z visually from 12,500 feet indicated on a heading of 240° magnetic and at an indicated air speed of 210 miles per hour. Bombs dropped were 13 incendiary, 8 demolition and 6 incendiary, and 9 demolition and 5 incendiary respectively.

f. Targets of Opportunity:

(1) Suhuton Railroad Yards: As previously explained, 10 aircraft of the 40th Group released early for an undetermined reason. Release was from altitudes varying from 21,200 to 22,200 feet indicated at 0146Z to 0147Z and 89 demolition and 52 incendiary bombs were dropped visually.

(2) Airstrip at Hsuchang: As a result of mechanical difficulty, A/C 294 (40th) bombed the airstrip approximately 1 mile southwest of Hsuchang. Results were not observed as a result of window icing but it is believed that a few of the 10 demolition and 4 incendiary bombs hit the airstrip. Bombing was accomplished visually at 0021Z from 20,000 feet indicated on a heading of 245° magnetic and at an indicated air speed of 195 miles per hour.

(3) Dock Installations at Tsingtao (36°04'N - 120°15'E):

A/C 324 (444th) bombed this target visually at 0016Z with 9 demolition and 4 incendiary bombs from 20,000 feet indicated on a heading of 270° magnetic and at an indicated air speed of 205 miles per hour. Direct hits were observed on the main dock installations, and immediately after the bombing a cruiser was seen to leave the harbor.

(4) Kaishu, Korea (38°03'N - 125°42'E): A/C 356 (468th) bombed this area at 0238Z visually with 9 demolition bombs from 20,000 feet true on a heading of 345° true and at an indicated air speed of 195 miles per hour. Bombs were seen to fall into the water.

g. Route back:

(1) Four check points were used on the return trip as follows: 38°04'N - 118°10'E to 35°35'N - 110°35'E to Hsian Airfield to Hanchung Airfield.

(2) Thirteen aircraft deviated from the return route as planned as follows: 4 landed at other than XX Bomber Command bases and remained; 3 landed en route but returned to base on D-day; 3 that bombed the primary target started the return route but are missing; 1 omitted the first 2 return check points; 1 was lost when the crew was forced to bail out; and 1 aircraft that was over the primary target could not release and was forced to jettison its bombs on the return route.

(3) Overcast at the various bases on return ranged from 5000 to 9000 feet with lower clouds broken or scattered at 1600 to 6000 feet. Visibility was from 4 to 10 miles. Light rain and snow flurries were also encountered.

6. ENEMY ANTI-AIRCRAFT (See Annex B):

a. Meager to moderate and generally inaccurate black (and

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some white) heavy antiaircraft bursts were encountered at Mukden. Fire was reported from 0115Z to 0213Z at altitudes varying from 19,300 to 24,000 feet under CAVU conditions. Automatic weapons fire was reported by only 1 aircraft and enemy aircraft were reported on the same course and altitude by the majority of the formations. Continuously pointed fire is believed to have been used.

b. Heavy antiaircraft fire was also encountered at the following locations: Dairen; Chenghsien; Changtien; Tsinan; Poshan; Tsinctai; in the vicinity of Kuangjao (37°00'N - 118°30'E); Linfen; Hingcheng; Tehsien; Yenchow; Anshan; and in the vicinity of Chenghiaying (35°28'N - 115°33'E). Automatic weapons fire was reported at Chowtsun, at Kaifeng, and in the vicinity of Anshan.

c. Searchlights were reported at Chenghsien and in the vicinity of the Yellow River Bridge.

d. One aircraft in a formation of 11 observed 5 conventional barrage balloons approximately 3 to 4 miles northwest of the western section of Mukden. Altitude of balloons was reported as 4000 feet.

e. High-altitude balloons were reported east of Anshan (1 at 20,000 feet), in the vicinity of Chuwa Island (6 - 8 at 13,14,000 feet), halfway between Chuwa Island and a point at 40°50'N - 121°51'E (1 at 22,000 feet), and between Mukden and Anshan (1 at 22,000 feet).

f. Smoke screens were observed at both Mukden and Anshan. The screen at Mukden apparently emanated from a ring of slit trenches roughly circling the Mukden Arsenal and Airplane Company. It was put into operation quickly and took maximum advantage of the prevailing wind. The screen at Anshan is reported as having covered the entire steel mill area and parts of the town.

g. The enemy's early-warning radar net was in operation and it is believed that the Japanese anticipated an attack in the general area, although apparently it was not predicted at which point the attack was being directed.

7. ENEMY AIR OPPOSITION (See Annex C):

a. Air opposition is rated as moderate, with 77 B-29's being attacked by enemy fighters. Preliminary claims list 20 enemy aircraft destroyed, 10 probably destroyed, and 30 damaged.

b. Enemy pilots waged 185 single and coordinated attacks against the B-29's, resulting in 247 individual encounters. Of these, 229 (93 per cent) occurred in the primary target area and the remainder at various points along the route back. No attacks were encountered before reaching the target area. Of the encounters within the primary target area, 100 occurred before bombing, 4 while bombs were being dropped, and 125 after bombing.

c. It is estimated that the mission was opposed by approximately 85 fighters consisting of about 30 Nicks, 15 Tojos, 12 Oscars, 8 Tonys, 8 Zekes, 5 Zeke 32's, 5 Vals, 2 Nates, 1 Claude, and 1 Dinah. It will be noted that the Japanese again used a small number of obsolete and trainer aircraft.

d. The favorite enemy attack was again high and frontal. Forty-five per cent of all encounters originated at either 11, 12, or

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1 o'clock, and of these, 81 per cent approached high. Twenty-seven per cent of all encounters originated from the right quarter, 18 per cent at the left quarter, and 10 per cent at the rear.

e. Enemy pilots opened fire in 65 per cent of the encounters which compares closely with the percentage of enemy fire in recent missions. B-29's opened fire in 90 per cent of the encounters, a higher percentage than has recently been the case. Much of the firing on both sides was begun at long ranges.

f. Enemy attacks were aggressive and determined with 52 per cent being closed to 250 yards or less. Many instances were recorded of attacks being pressed to 50 yards or less, and in many cases enemy aircraft passed right through the formations. Pilot ability was rated high, with the exception of a new unit of Tojo pilots who were aggressive but inexperienced.

g. Five aerial bombing attacks were reported, all approaches being made frontally. Both phosphorous and explosive bombs were employed, and the only damage occurred when a phosphorous bomb hit the wing of a B-29 producing holes that were still afire and increasing in size when the aircraft landed at base. This damage did not interfere with the operation of the plane. One explosion, believed to have been caused by an aerially released rocket, was observed.

h. Twenty of the enemy attacks were coordinated and accounted for 82, or 33 per cent, of total encounters. Two attacks were coordinated by large numbers of enemy fighters, 14 in 1 instance, and 13 in the other. Coordinated attacks on the whole were determined and well executed.

i. One unavoidable collision destroyed an enemy fighter but damaged only the number 1 propellor of the B-29 which it hit. Of the 2 collisions in which B-29's were destroyed, 1 is classified as unavoidable and the other as a case of intentional ramming by a pilot who possibly was wounded, and whose plane certainly was severely damaged. In this latter case, it is not believed that the enemy pilot approached originally with the intention of ramming, but decided to do so only after having been hit.

8. WEATHER (See Annex D):

a. The weather was good for formation flying and excellent for high-altitude daylight precision bombing.

b. Light to moderate turbulence and icing was encountered on both the ascent and descent at the home bases. Inasmuch as the freezing level was at approximately 3000 feet MSL, some aircraft experienced difficulty in getting rid of their ice before landing.

c. Condensation trails made by attacking fighters aided gunners in spotting, especially when the fighters attacked out of the sun.

d. Because of the intense cold, persistent frost formed on the inside of the planes.

9. COMMUNICATIONS (See Annex E):

a. Communications on this mission were in general satisfactory.

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New frequencies were assigned to all Groups, bringing the number assigned to each Group up to 4. A high noise level was encountered on all frequencies.

- b. Two practice messages were sent to the aircraft in flight.
- c. For the first time all aircraft complied with all the provisions of the Communications Section of the Command's Tactical Doctrine.
- d. Nineteen requests for D/F aid were made with 8 bearings given reported as Class I.
- e. Possible jamming as well as unidentified stations working on or near the assigned frequencies were logged.

10. RADAR (See Annex F):

- a. The principal use of radar on this mission was as an aid to navigation and bombing. The most significant use was the sighting and identifying of the main Group assembly points almost entirely by the use of radar equipment. Sighting of the target area at a usable range also assisted on the bombing run.
- b. A number of excellent scope pictures of the target area, check points on the route, and assembly points were obtained. The radarscope photography was satisfactory from this standpoint but disappointing considering the total number of pictures that could have been obtained.
- c. Serviceability of the radar systems was poorer on this mission than on other recent missions. The failures were numerous and varied. There were no malfunctions of auxiliary radar equipment.

11. RCM (See Annex G):

- a. As on previous missions, RCM activities were confined to searching. Eight RCM-equipped aircraft, each with one RCM Observer, searched for Early Warning Radar en route to and from the target and for Radar Fire Control Equipment in the target area.
- b. Early Warning intercepts en route to the target were normal and the majority were of the Army "Chi" type. In the target area, there were no intercepts with Radar Fire Control characteristics..
- c. Enemy interference with communications was reported by both a Chengtu-area ground station and aircraft in flight. One enemy station, logged on previous missions, was reported as sending meaningless dots and dashes. The 8-megacycle band was subjected to a great deal of jamming.
- d. Signals on 4725 and 5720 kilocycles were intercepted by an RCM Observer monitoring enemy communications in the target area. These signals may possibly have been related to the fighter attacks subsequently sustained by this aircraft.

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12. CENTRAL STATION FIRE CONTROL AND GUNNERY (See Annex H):

a. The presence of frost on the windows prevented bombardiers in some cases from observing and firing at enemy aircraft. As on previous missions, the enemy favored the high frontal approach and he also made good use of the sun in his attacks.

b. The functioning of the CSFC system was satisfactory. An increase in malfunctions of turrets and machine guns is attributed to low temperatures and frost conditions.

c. Expenditure of ammunition amounted to 83,480 rounds, of which 81,125 rounds were expended in combat and 7355 in test firing.

13. CAMERAS AND PHOTOGRAPHS (See Annex I): Sixty-eight cameras of the K-18, K-20, and K-22 types were installed in the aircraft airborne. Of these, based on incomplete reports, 40 cameras obtained 597 usable photographs of the target. Eleven cameras failed to obtain photographs for mechanical reasons and 2 for personnel reasons.

14. LOSSES AND DAMAGE (See Annexes J and M):

a. Known Battle Losses and Battle Damage: Three aircraft were lost as a result of enemy fighter action, 2 as a result of collision with enemy fighters over the target at Mukden and 1 as a result of wind-milling propeller that finally fell off and caused the crew to bail out in Occupied China. Eleven B-29's were damaged by enemy fighters and 5 by enemy antiaircraft. All damage was minor.

b. Known Operational Losses and Damage: One aircraft was lost when it overshot the runway while landing on the return from the mission. Three aircraft suffered minor damage by our own guns and 5 others were damaged as a result of other causes. One of the latter suffered major damage when a life raft blew off and damaged the right horizontal stabilizer and elevator.

c. Missing Aircraft: Three aircraft are missing, all of which are thought to have reached China and one of which may possibly have reached friendly territory.

15. FUNCTIONING OF EQUIPMENT (See Annexes K and M):

a. Of the 160 B-29 aircraft assigned to this Command, 16 were undergoing acceptance check and 4 were in the depot. Of the remainder, 123 were airborne to the forward area and only 2 failed to land there. Fifteen aircraft failed to take off for the mission and 16 failed to bomb the primary target for mechanical reasons.

b. There were 194 malfunctions of equipment in flight (excluding 20 malfunctions that were related to failure to bomb the assigned primary target) as follows: power plant and accessory section - 14 (turbosupercharger or control system - 4, engines running rough or hot - 4); propellers and governors - 12 (feathered propellers or unsuccessful attempts to feather - 5); oil system - 49 (oil temperature regulators - 21; oil leaks - 20); fuel system - 10 (fuel transfer system - 5); electrical system - 16 (generators - 8); instruments - 55 (tachometers - 24, cylinder head temperature gages - 8, carburetor air temperature gages - 6); miscellaneous - 38 (blown blisters - 11, defroster systems - 10)

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c. Over-all averages in fuel consumption were: average - 6230 gallons, maximum - 6820 gallons, minimum - 5700 gallons (for an average of 13 hours and 19 minutes of flight). Averages by Groups were as follows: 40th - 6080 (maximum - 6400, minimum 5700); 444th - 6320 (maximum - 6820, minimum - 5900); 462nd - 6290 (maximum - 6670, minimum - 5775); and 468th - 6210 (maximum - 6800, minimum - 5800).

16. TARGET DAMAGE ASSESSMENT (See Annex L):

a. Primary Target:

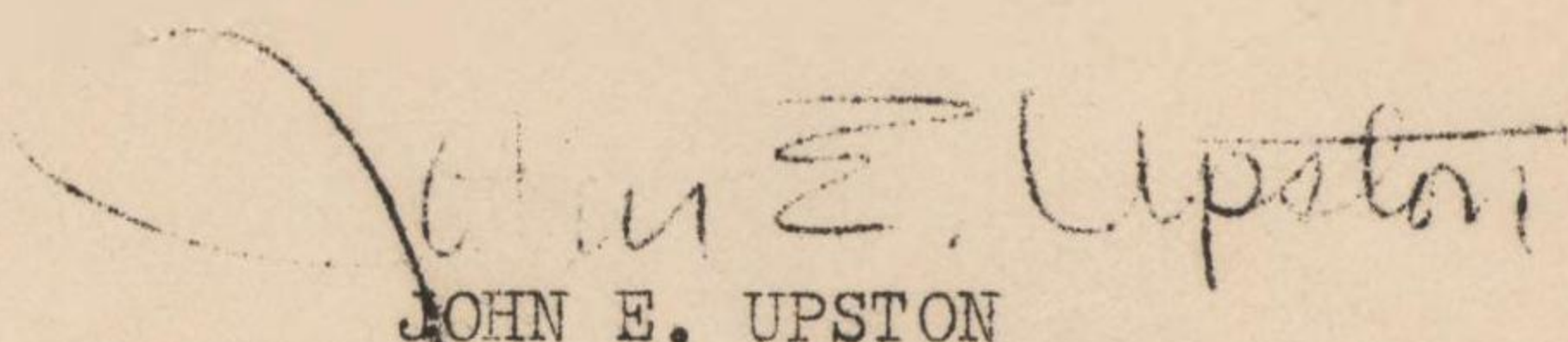
(1) In general the bombing was scattered with the heaviest damage occurring in the Mukden Arsenal located immediately west and adjacent to the Airplane Company. Of the 8 formations attacking, 1 obtained hits in the aircraft factory, 3 obtained hits in the Arsenal area, 1 obtained hits in a barracks and administrative area south of the Arsenal, 1 dropped its bombs approximately 10,000 feet north of the target, 1 dropped on the edge of the airfield approximately 7500 feet south of the target, and 1 formation of 11 planes released early (except for the leader) and bombed the Suhuton Railroad Yards 9 miles southwest of Mukden.

(2) Strike photos show several hits or near misses on the long flight hangar at the south edge of the Airplane Plant, several hits or near misses on each of the 2 propellor-mounting hangars, at least 2 and probably 3 hits on the large final-assembly building, and several hits and a near miss on an unidentified building in the north-east section of the Works.

(3) At least 7 storage and warehouse buildings, 3 to 4 machine shops, and several other miscellaneous buildings of the Arsenal appear to have been hit. In addition, hits were scored in a large loose stores area and along the southern edge of the Arsenal. A number of bombs fell in a residential area adjoining the Arsenal on the north. A large sawtooth-roof building, an administrative-type building, and several barracks were hit by bombs falling just south of the Arsenal.

(4) Approximately 40 bombs fell in the Suhuton Railroad Yards with the remainder falling in the open ground to the south. Several hits were scored on trackage and on rolling stock.

For and in the absence of The Commanding General:


JOHN E. UPSTON
Brigadier General, U.S.A.
Chief of Staff

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ANNEX

A

EXECUTION OF THE MISSION

- I - Information on take-offs
- II - Details of Routes
- III - Track and Vertical Flight Path*
- IV - Bombing Data **
- V - Bomb Loading
- VI - Disposition of Bombs
- VII - Formations Flown
- VIII - Navigation Report *
- IX - Mission Operational Losses
- X - Information on Landings

* Prepared by Staff Navigator.

** Page A-IV-1 prepared by Staff Bombardier

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I - INFORMATION ON TAKE-OFFS

Mission No. 19

7 December 1944

Group	First A/C Off	Last A/C Off	Elapsed Time	No. of A/C Taking Off	Average Take-Off Interval
40th	1930Z	2025Z	55 min	27	127 sec.
444th	1944Z	2044Z	60 min	27	138 sec.
462nd	1921Z	2015Z	54 min	23	147 sec.
468th	1928Z	2039Z	71 min	29 - a	152 sec.
Over All	1921Z	2044Z	83 min	106 - a	47 sec.

a. Does not include A/C 284 and A/C 409 that took off late at 2104Z and 2109Z respectively.

Note: Take-offs were on D-1, Z time.

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II - DETAILS OF ROUTES

Mission No. 19

7 December 1944

A. Planned Routes

	40th	44th	462nd	468th
Base	Hsinching	Kwangshan	Kiunglai	Pongshan
1st Check Point	Ankang Airfield (32°35'N - 109°14'E)			
Assembly Point No. 1	Takin Island (38°18'N - 120°50'E)	Ta-wei-shan Is (37°58'N - 120°38'E)	37°42'N - 120°14'E	Tainpingwan (37°22'N - 119°52'E)
Assembly Point No. 2	Chuwa Island (40°31'N - 120°49'E)			
Initial Point	40°50'N - 121°51'E			
Target	Mukden, Manchuria (41°48'N - 123°30'E)			
1st Return Check Point	38°04'N - 118°10'E			
2nd Return Check Point	35°35'N - 110°35'E			
3rd Return Check Point	Hsian Airfield (34°11'N - 108°54'E)			
4th Return Check Point	Hanchung Airfield (33°05'N - 107°03'E)			
Base	Hsinching	Kwangshan	Kiunglai	Pongshan

B. Deviations from Planned Routes

1. 40th Group:

- a. A/C 396 on return landed at Hsian at 0634Z due to loss of oil in number 4 engine. After the oil was replaced it took off at 0756Z and flew direct Hsinching.
- b. A/C 294 due to excessive oil temperature in number 2 engine, bombed an airstrip southwest of Hsiachang and returned to Hsinching via Liangshan.
- c. A/C 420 due to excessive cylinder head temperature of number 3 engine bombed the last resort target and returned to Hsinching.
- d. A/C 457 flew the briefed route except on return it flew direct from 36°54'N - 114°30'E to Hsian to Hsinching.
- e. A/C 306 flew the following course; from 36°50'N - 118°05'E to 38°12'N - 118°34'E to 38°12'N - 116°50'E, where bombs were jettisoned due to engine trouble, to Hsian to Hsinching.
- f. A/C 331 due to mechanical difficulties left the briefed course at assembly point number 1 (38°18'N - 120°50'E), proceeded to the secondary target to bomb, and returned to Hsinching by way of Hsian.

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- g. A/C 322 due to battle damage landed at Ankang on the return route.
- h. A/C 363 while returning was abandoned at $36^{\circ}30'N - 113^{\circ}00'E$ due to damage from enemy fighters.

2. 444th Group:

- a. A/C 352 flew the briefed route to Chenghsien to bomb and returned directly to Kwanghan due to mechanical failure.
- b. A/C 324 followed the briefed outbound route to the China Coast, then proceeded to Tsingtao ($36^{\circ}04'N - 120^{\circ}15'E$) to bomb the dock installations. Return was directly to Kwanghan.
- c. A/C 724, 472 and 411 followed the briefed route except for a direct leg between the China Coast and Hsian upon return. The 3 aircraft landed at Hsian; aircraft 724 due to gasoline shortage, aircraft 472 due to mechanical difficulties, and aircraft 411 due to a feathered engine caused by enemy action.
- d. A/C 451 returned after 2 hours and 37 minutes due to an inoperative number 2 engine.
- e. A/C 524 returned after 55 minutes due to an engine failure.
- f. A/C 464 returned after 45 minutes due to an oil leak in the number 4 engine.
- g. A/C 360 returned after 2 hours and 52 minutes due to an elevator being damaged by a loose life raft.
- h. A/C 262 was seen to have dropped its bombs on the primary target but failed to return to base.

3. 462nd Group:

- a. A/C 327 on return was forced to land at Pungchacheng due to a gas shortage.
- b. A/C 209 jettisoned its bombs and landed at Hsian due to an inoperative fuel transfer system and number 4 carburetor.
- c. A/C 270 returned to Kiunglai after 50 minutes due to number 2 and 4 engines running rough.
- d. A/C 299 was rammed by a fighter over the target area and was observed to crash.
- e. A/C 359 was over the primary target in formation but was last seen at Tehsien ($37^{\circ}29'N - 116^{\circ}20'E$).

4. 468th Group:

- a. A/C 272 flew the briefed route to and from the last resort target which it bombed due to engine trouble.
- b. A/C 356 flew the briefed route as far as the second assembly point where it turned for the secondary target due to severe internal icing. However, not reaching the secondary target it bombed a target of opportunity at Kaishu, Korea ($38^{\circ}03'N - 125^{\circ}42'E$) and returned to base by way of Ankang.
- c. A/C 284 and 409 due to late take-offs bombed the secondary target and returned as briefed.
- d. A/C 415 was in formation over the primary target but was unable to release its bombs. It flew over several targets of opportunity and finally jettisoned the bombs at $35^{\circ}55'N - 112^{\circ}40'E$, returning to base by the briefed route.

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S E C R E T

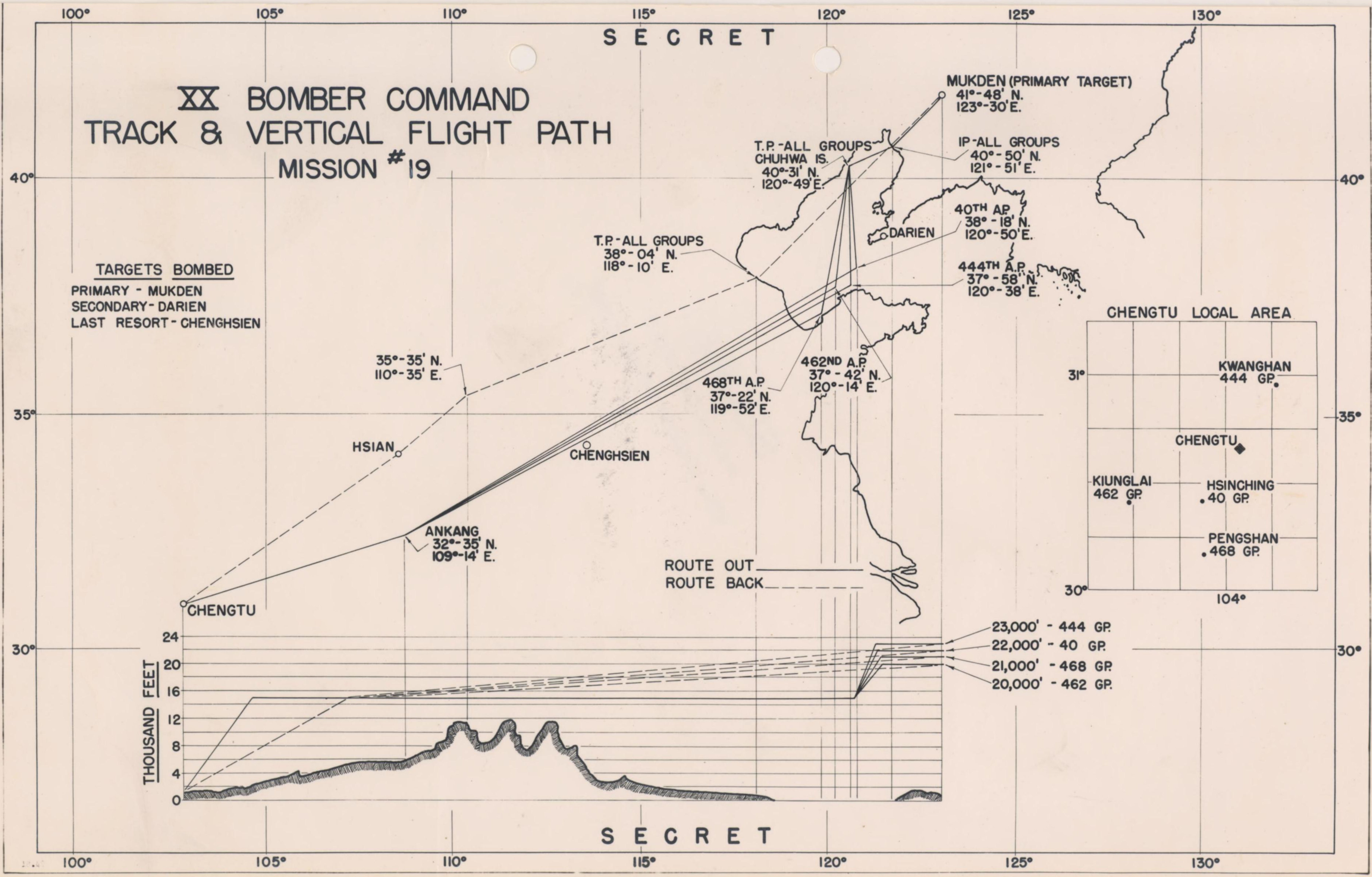
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XX BOMBER COMMAND TRACK & VERTICAL FLIGHT PATH MISSION # 19

TARGETS BOMBED
 PRIMARY - MUKDEN
 SECONDARY - DARIEN
 LAST RESORT - CHENGHSIEN



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HEADQUARTERS
XX BOMBER COMMAND
APO 493

CONSOLIDATED
SPECIALIST MISSION
REPORT OF
STAFF BOMBING OFFICER

SECRET

Auth: CG, XX BG
Initials CFH
Date 13 Dec. 44.

Date Prepared: 13 Dec 44

Field Order #19
Date of Mission: 7 Dec 44

1. Weather over the target was CAVU. Anti-Aircraft fire was meagre to moderate. Fighter attacks were reported by most formations to have been moderate on the bombing run.

2. Difficulties encountered:

a. For the first time in the experience of this Command the enemy used smudge pots to hide the target. A similar smokescreen was observed to be over Anshan at the same time. The smoke produced was black and very dense.

b. Frost on the inside of the nose glass, as on previous missions, obstructed vision considerably.

3. Malfunctions:

a. 40th Group

(1) #738 - one-half of the bomb load failed to salvo on first attempt, but were salvoed several seconds later. Cause undetermined.

(2) #587 - Seven bombs hung up on first salvo, but were released on third attempt. Cause undetermined.

b. 444th Group

(1) #353 - Intervalometer coaster did not operate. Bombardier salvoed several seconds later with the result that bombs fell over. Intervalometer checks out on ground. This airplane was a formation leader.

(2) #724 - Forward right rack in rear bomb bay could not release any of its bombs in either train or salvo. Cause - Cannon plug not making contact at all times. (This airplane equipped with the all electric bomb release).

c. 462nd Group

(1) #457 - Four bombs hung up. Cause undetermined.

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d. 468th Group

- (1) #3356 - Two bombs on forward right hand rack and top bomb of rear right hand rack in rear bomb bay would not release electrically. Cause - Burned out release unit.
- (2) #3415 - Bombs would not release electrically. Cause undetermined.

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IV - BOMBING DATA (Continued)

A. Times of Bomb Release at Primary Target

Z time	40th	44th	462nd	468th	Total
0120 - 0129	12	-	11	1	24
0130 - 0139	-	11	1	-	12
0140 - 0149	1	1	1	16	19
0200 - 0209	-	1	8	9	18
0210 - 0219	-	7	-	-	7
Total	13	20	21	26	80

B. Bombing Altitudes at Primary Target

Altitude (feet)	40th-a	44th-a	462nd-a	468th-b	Total
19,000 - 19,999	-	-	-	3	3
20,000 - 20,999	5	1	17	18	41
21,000 - 21,999	7	2	2	2	13
22,000 - 22,999	1	2	-	1	4
23,000 - 23,999	-	15	1	-	16
Unknown	-	-	1	2	3
Total	13	20	21	26	80
Briefed Altitude*	22,000	23,000	20,000	21,000	

a. Reported as indicated altitude.

b. Reported as true altitude.

* Pressure altitude.

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C. Axes of Attack at Primary Target

Degrees	40th-a	444th-a	462nd-a	468th-b	Total
20 - 29	-	-	1	-	1
30 - 39	1	1	2	-	4
40 - 49	1	6	9	-	16
50 - 59	5	12	7	23	47
60 - 69	3	-	-	-	3
70 - 79	3	-	-	-	3
90 - 99	-	1	-	1	2
Unknown	-	-	2	2	4
Total	13	20	21	26	80

a. Reported as magnetic.

b. Reported as true.

Note: Briefed axis of attack was 58° magnetic.

D. Indicated Air Speeds at Primary Target

I.A.S. (mph)	40th	444th	462nd	468th	Total
190	-	4	-	9	13
192	1	-	-	-	1
193	2	2	-	-	4
195	8	8	13	11	40
196	1	-	-	1	2
197	1	-	-	-	1
198	-	1	-	1	2
199	-	1	-	-	1
200	-	2	3	2	7
201	-	-	1	-	1
203	-	-	1	-	1
205	-	1	1	-	2
210	-	1	-	-	1
Unknown	-	-	2	2	4
Total	13	20	21	26	80

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E. Aircraft Bombing Targets other than Primary Target

Group	A/C	Target	Bombs Dropped		Type of Release	Time of Release	Altitude	Axis of Attack	I.A.S. (mph)
			G.P.	Inc.					
40th	294	Air strip at Hsuchang	10	4	visual	0021Z	20,000'I	345°M	195
40th	331	S.T.	10	5	visual	0119Z	21,200'I	321°M	195
40th	420	L.R.T.	8	6	radar	2323Z	18,000'T	236°M	190
40th	297	Suhuton R.R. Yards (9 mi SW of Mukden)	8	6	visual	0147Z	21,200'I	58°M	195
40th	363	"	9	5	unreported	0147Z	22,000'I	51°T	195
40th	729	"	8	6	visual	0147Z	22,000'I	51°M	195
40th	541	"	9	5	visual	0147Z	22,200'I	43°L	195
40th	587	"	9	5	visual	0147Z	21,300'I	54°M	195
40th	322	"	9	5	visual	0147Z	22,000'I	51°M	195
40th	394	"	9	5	visual	0147Z	21,700'I	33°M	195
40th	738	"	10	4	visual	0147Z	21,600'I	65°I	195
40th	407	"	9	5	visual	0146Z	21,600'I	58°I	195
40th	276	"	9	6	visual	0147Z	21,300'I	62°M	200
444th	324	Dock installations at Tsingtao (36°04'N - 120°15'E)	9	4	visual	0016Z	20,000'I	270°M	205
444th	352	L.R.T.	9	5	visual	2355Z	12,500'I	240°M	210
468th	3356	Kaishu, Korea (38°03'N - 125°42'E)	9	-	visual	0238Z	20,000'T	343°T	195
468th	272	L.R.T.	-	13	visual	2320Z	14,200'T	270°T	195
468th	284	S.T.	13	-	visual	0213Z	20,100'T	358°T	195
468th	409	S. T.	-	12	visual	0117Z	20,200'T	267°T	200

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V - BOMB LOADING*

Mission No. 19

7 December 1944

*No detailed summary sufficient
Also Duplicate in Stat Summary*

Bomb Loading	40th			444th			462nd			468th			Total		
	A/C	G.P.	Inc	A/C	G.P.	Inc	A/C	G.P.	Inc	A/C	G.P.	Inc	A/C	G.P.	Inc
13 GP										3	39	-	3	39	-
2 GP										9	108	-	9	108	-
1 GP										1	11	-	1	11	-
12 GP 4 Inc							1	12	4				1	12	4
11 GP 5 Inc	1	11	5				3	33	15				4	44	20
11 GP 3 Inc	1	11	3										1	11	3
10 GP 6 Inc							1	10	6				1	10	6
10 GP 5 Inc	1	10	5	10	100	50	1	10	5				12	120	60
10 GP 4 Inc	7	70	28				2	20	8	1	10	4	10	100	40
10 GP 3 Inc										1	10	3	1	10	3
9 GP 10 Inc							1	9	10				1	9	10
9 GP 6 Inc	1	9	6										1	9	6
8 GP 5 Inc	12	108	60	10	90	50	4	36	20				26	234	130
8 GP 4 Inc				4	36	16	3	27	12	1	9	4	8	72	32
9 GP 3 Inc										1	9	3	1	9	3
9 GP 2 Inc										1	9	2	1	9	2
8 GP 6 Inc	3	24	18										3	24	18
8 GP 5 Inc	1	8	5				1	8	5				2	16	10
8 GP 4 Inc				2	16	8				3	24	12	5	40	20
8 GP 3 Inc				1	8	3				3	24	9	4	32	12
7 GP 4 Inc							1	7	4	2	14	8	3	21	12
6 GP 4 Inc							1	6	4				1	6	4
3 GP 2 Inc							4	24	8				4	24	8
15 Inc										2	-	30	2	-	30
13 Inc										1	-	13	1	-	13
12 Inc										2	-	24	2	-	24
Total A/C	27			27			23			31			108		
Total G.P.		251			250			202			267			970	
Total Inc.			130			127			101			112			470
Average No. Bombs per A/C		14.1			14.0			13.2			12.2			13.3	

* Based on aircraft airborne. "G.P." indicates 500-pound general purpose (TNT or Amatol filled) fused .1 second nose and .01 second tail. "Inc." indicates 500-pound M-76 incendiary bombs fused instantaneous nose and non-delay tail. The field orders specified that both general purpose and incendiary bombs would be carried in each aircraft, mixed in the ratio of 2 general purpose to 1 incendiary with the incendiaries loaded to release last. Minima were 8 bombs per aircraft not equipped with center section wing tanks and for those aircraft with center section wing tanks as follows: 40th Group, 10 bombs; 444th Group, 11 bombs; 462nd Group, 9 bombs; and 468th Group, 10 bombs.

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VI - DISPOSITION OF BOMBS

Mission No. 19

7 December 1944

	40th			444th			462nd			468th			Total		
	A/C	GP	Inc	A/C	GP	Inc	A/C	GP	Inc	A/C	GP	Inc	A/C	GP	Inc
A/C bombing all targets and bombs dropped	26	240	127	22	205	100	21	187	84	30	259	106	99	891	417
A/C bombing P.T. and bombs dropped	13	123	60	20	187	91	21	187	84	26	237	81	80	734	316
A/C bombing S. T. and bombs dropped	1	10	5	-	-	-	-	-	-	2	13	12	3	23	17
A/C bombing L.R.T. and bombs dropped	1	8	6	1	9	5	-	-	-	1	-	13	3	17	24
A/C bombing T/O and bombs dropped	11	99	56	1	9	4	-	-	-	1	9	-	13	117	60
A/C jettisoning bombs	1	11	3	4	36	22-a	1	9	14-b	1	8	3	7	64	42
A/C returning with bombs	-	-	-	1	9	5	1	6	3-c	-	-	3-d	2	15	11
Total A/C and bombs airborne	27	251	130	27	250	127	23	202	101	31	267	112	108	970	470

- a. Includes 4 bombs jettisoned by A/C 724 that also bombed the P.T.
- b. Includes 4 bombs jettisoned by A/C 457 that also bombed the P.T.
- c. Includes 1 bomb returned by A/C 505 that also bombed the P.T.
- d. Three bombs returned by A/C 3356 that also bombed a target of opportunity.

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S E C R E T

VII - FORMATIONS FLOWN

Mission No. 19

7 December 1944

A. Formation Required

Aircraft were to be flown individually to the respective Group assembly points, where 12-plane formations were to be assembled. For the location of assembly points, see Part II, Section A, of this annex. Unless under fighter attack, formation leaders were permitted to break up their formation on the return flight at 108 degrees east longitude.

B. Formations over the Primary Target

Formations are shown below as they were at the time of bomb release over the primary target. Times, altitudes, and headings shown are those of the lead aircraft. These diagrams are intended to show relative position only. "W" represents an aircraft of the 40th Group; "X" the 444th, "Y" the 462nd, and "Z" the 468th.

Aircraft marked with an asterisk did not drop their bombs on the primary target.

1. Y - 484
Y - 457 Y - 393
Y - 362 Y - 456
Y - 359 Y - 830 Y - 506
Y - 311 Y - 6213 Y - 273

Time - 0122Z
Altitude - 20000' I
Heading - 46° M (varied within formation from 31° to 58° M.)
Bombs dropped - GP - 95 No. A/C Bombing - 11.
Inc - 42

2. W - 225
W - 508 W - 396
W - 269 W - 457
W - 466 W - 831 W - 522 W - 313
W - 404 W - 579 Z - 454
W - 348 X - 292

Time - 0128Z
Altitude - 20800' I
Heading - 58° M (varied within formation from 49° to 74° M.)
Bombs dropped - GP - 135. No. A/C Bombing - 14.
Inc - 60.

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*Short summary
all necessary.*

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3. X - 353
X - 584 X - 462
X - 492 X - 399 X - 472
X - 343 X - 507 X - 411*
Y - 827 X - 341
X - 262

Time - 0130Z.
Altitude - 23000'I
Heading - 51°M (varied within formation from 45° to 55°M)
Bombs dropped - G.P. - 101. Inc. - 50. No. A/C bombing - 11.
* Jettisoned just prior to target.

4. Z - 546
Z - 395 Z - 217
Z - 471 Z - 494 Z - 525
Z - 417 Z - 389 Z - 279 Z - 424 Z - 469 Z - 487
Z - 353 Z - 265 Z - 411
X - 378 Y - 299 Z - 429

Time - 0146Z.
Altitude - 20350'I
Heading - 51°T
Bombs Dropped - G.P. - 152. No. A/C Bombing - 18
Inc. - 70.

5. W - 582
W - 541* W - 729*
W - 587* W - 363* W - 407*
W - 394* W - 297* W - 322* W - 276* W - 738*

Time: 0147Z.
Altitude: 21250'I.
Heading: 39°M (varied within formation from 33° to 65°M).
No. Bombs Dropped on PT. - G.P. - 9 No. A/C Bombing PT. - 1
Inc. - 5 * Dropped prematurely.

Note: All aircraft except the leader released early because of an unexplained early release on the part of one of the aircraft. The bombs thus released early fell on the Suhuton Railway Yards, 9 miles southwest of Mukden. The leader continued his bomb run and dropped on the primary target.

6. Y - 728
Y - 505 Y - 463
Y - 316 Y - 312
Y - 346 Y - 581 Y - 329 X - 225

Time - 0205Z
Altitude - 20000'I
Heading - 49°M (varied within formation from 22° to 52°M)
No. bombs dropped - G.P. - 85
Inc. - 38
No. A/C bombing - 9.

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7.

Z - 542
 Z - 5208 Z - 355
 Z - 442 Z - 6208 Z - 486
 Z - 397 Z - 354 Z - 415* Z - 390

Time - 0208Z
 Altitude - 20200'T
 Heading - 51°T
 No. bombs dropped - G.P. - 91. No. A/C Bombing - 9.
 Inc. - 21. *Unable to release bombs-later
 jettisoned.

8.

X - 580
 X - 423 X - 538
 X - 226 X - 202
 X - 485 X - 724

Time - 0215Z
 Altitude - 23000'I
 Heading - 41°M (varied within formation from 41° to 90°M)
 No. bombs dropped - G.P. - 66
 Inc. - 30
 No. A/C bombing - 7.

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S E C R E T

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HEADQUARTERS
XX BOMBER COMMAND
APO 493

SECRET

Auth: CG, XX BC
Initials: _____
Date: 11 December 44

CONSOLIDATED
SPECIALIST MISSION
REPORT OF
XX BOMBER COMMAND NAVIGATION OFFICER

DATE PREPARED: 11 December 1944

FIELD ORDER NUMBER 19
DATE OF MISSION: 7 Dec 44

1. Navigation on this mission was considered good to excellent. There was a considerable increase in cooperative effort between Radar Operators and Navigators, but at the same time one Group reported less coordination between Navigators and Bombardiers. It is believed that closer coordination between Navigator, Bombardier and Radar Operator particularly from the assembly point to the target, will serve to reduce bombing errors. Icing on the inside of the glass in the plane is becoming an acute problem, in that it restricts visibility for pilotage work close to target, and limits amounts of celestial work that can be accomplished.

a. Average times out and back to primary target are as follows:

	<u>Nav. Time Out</u>	<u>Nav. Time Back</u>
40th Group	5h 34 m	7h 21m
444th Group	5h 51 m	7h 18m
462nd Group	5h 26 m	7h 14m
468th Group	5h 42m	7h 15m

b. Metro information was superior for this mission as far as forecast winds were concerned. There is still more variance in winds reported than should normally be expected. Average winds reported are:

<u>One-Half Out</u>	<u>Target</u>	<u>One-Half Back</u>
14,000	21,000	15,000
280°45K	280°60K	263°-48K

c. The following statistical information is presented on supplemental aids employed:

<u>GROUP</u>	<u>CEL LOP's</u>	<u>CEL FIXES</u>	<u>RADIO FIXES</u>	<u>QDMS</u>
40th	63	4	11	5
444th	40	11	9	6
462nd	30	5	19	8
468th	78	17	17	6

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d. Map and chart inaccuracies noted are as follows:

34°00'N 108°30'E Mountains 10,000' high
33°40'N 107°30'E Mountains 15,000' high
Lake SSW of Tehsien - 57°20'N, 116°12'E one mile south of river.

2. Comments by Groups:

a. 40th Group reported trouble with A-8 octants at altitude when cabin is depressurized. This is being investigated. In addition inaccurate navigation and log technique on the part of newly assigned Navigators was noted. It is possible that more careful indoctrination by Squadron Navigators may help to eliminate this.

b. 44th Group reports Navigators desiring radar scope at station where it was possibly disconnected for radar photos.

c. 462nd Group considered IP too far from target. This IP was 109 statute miles from the target, but was the only feasible point to select due to lack of distinguishing landmarks closer to the target.

3. Routes, selection of assembly point and IP were considered generally good. The selection of the assembly points in particular met with favorable comment.

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IX - MISSION OPERATIONAL LOSSES

Mission No. 19

7 December 1944

Information of mission operational losses and damage are included herein and will be included henceforth in Annex J, Aircraft Losses and Damage.

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S E C R E T

X - INFORMATION ON LANDINGS

Mission No. 19

7 December 1944

out put in annex 3

A. Landed at XX Bomber Command Bases;

1. A/C bombing primary target;

	40th	444th	462nd	468th	Overall
First Down	0828Z	0832Z	0842Z	0832Z	0828Z
Last Down	0927Z	1005Z	0943Z	1002Z	1005Z

2. A/C failing to bomb primary target;

a. 40th Group;

- (1) Ten aircraft were over the primary target but bombed a target of opportunity in the primary target area. Of these aircraft, 8 landed at home base, the first at 0911Z, the last at 0951Z.
- (2) A/C 331 - 070827Z - bombed secondary target.
- (3) A/C 420 - 070321Z - bombed last resort target.
- (4) A/C 294 - 070413Z - bombed target of opportunity.
- (5) A/C 306 - 070841Z - jettisoned bombs.

b. 444th Group;

- (1) A/C 352 - 070410Z - bombed last resort target.
- (2) A/C 324 - 070714Z - bombed target of opportunity.
- (3) A/C 451 - 062232Z - jettisoned bombs.
- (4) A/C 524 - 062131Z - jettisoned bombs.
- (5) A/C 464 - 062106Z - brought bombs back.
- (6) A/C 360 - 062250Z - jettisoned bombs.

c. 462nd Group;

- (1) A/C 270 - 062055Z - brought bombs back.

d. 468th Group;

- (1) A/C 284 - 070902Z - bombed secondary target.
- (2) A/C 409 - 070738Z - bombed secondary target.
- (3) A/C 272 - 070255Z - bombed last resort target.
- (4) A/C 3356 - 071025Z - bombed target of opportunity.
- (5) A/C 415 - 071004Z - jettisoned bombs.

B. Landed Elsewhere;

a. 40th Group;

- (1) A/C 396 because of loss of oil on #4 engine landed at Hsian at 0640Z after bombing the primary target. This aircraft returned to Hsinching the same day, landing at 1014Z.
- (2) A/C 322 after bombing a target of opportunity landed at Ankang with 2 engines out.

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b. 444th Group;

- (1) A/C 411 landed at Hsian at 0715Z with an engine shot out, which had necessitated jettisoning in the primary target area.
- (2) A/C 472 after bombing the primary target landed at Hsian at 0715Z because of gasoline shortage.
- (3) A/C 724 after bombing the primary target landed at Hsian at 0715Z to refuel, returning to its home base at 1030Z.

c. 462nd Group;

- (1) A/C 209 jettisoned its bombs because of a fuel transfer system malfunction and landed at Hsian at 0447Z. This aircraft returned to Kiunglai at 071114Z.
- (2) A/C 827, which bombed the primary target, landed at Pungchacheng because of a gasoline shortage, returning to Kiunglai the following day.

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ANNEX

B

ENEMY ANTI-AIRCRAFT

* * * * *
* Prepared by: *
* * * * *
* Flak Officer *
* * * * *
* XX BOMBER COMMAND *
* * * * *

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S E C R E T

HEADQUARTERS
XX BOMBER COMMAND
APO 493

* * * * *
* S E C R E T *
* By Auth of the C.G. *
* XX Bomber Command *
* 15/12/44 J.L.P. *
* Date Initials *
* * * * *

15 December 1944

P R E L I M I N A R Y R E P O R T

ANTI-AIRCRAFT OPPOSITION

MISSION NUMBER 19, (DAYLIGHT), 7 DECEMBER 1944

Primary Target - MUKDEN, Secondary Target - DAIREN
Target of Last Resort - CHENGHSIEN

A. ANTI-AIRCRAFT FIRE ENCOUNTERED

1. MUKDEN (41°49'N - 123°26'E):

a. Meager to moderate and generally inaccurate (although 4 aircraft were struck, Section 8) black and some white heavy antiaircraft bursts were reported by 84 per cent (77 out of 92) of the aircraft over the area. Fire was reported from 0115Z to 0213Z at altitudes varying from 19,300 to 24,000 feet under CAVU conditions.

b. Automatic weapons fire was reported at 0150Z by one aircraft out of a formation of 11 at an altitude of 22,000 feet. Bursts were reported as white and weather conditions as CAVU.

c. Enemy aircraft were reported on the same course and altitude by all formations with the exception of aircraft bombing at 0128Z, 0130Z and 0146Z. At 0115Z one "Nick" was observed flying parallel to course approximately 5000 yards out and about 1000 feet above a formation of 11 aircraft during the entire run into and out of the target area.

d. Following are reports of accuracy, intensity, and deviations. The numbers indicate aircraft reporting in the affirmative while percentages are determined from the total number of reports in one direction as above, level or below:

<u>Reports of Accuracy</u>		<u>Reports of Intensity</u>	
Struck	1 (1 percent)	Intense	1 (1 percent)
Rocked	3 (4 percent)	Moderate	18 (23 percent)
Missed	73 (95 percent)	Meager	58 (76 percent)

Reports of Deviations

Above . 11 (11 percent)	Ahead . . 14 (18 percent)	Left . . . 50 (66 percent)
Level . 38 (87 percent)	Abreast . 30 (38 percent)	In Line . 14 (18 percent)
Below . 53 (52 percent)	Behind . 34 (44 percent)	Right . . 12 (16 percent)

e. Continuously Pointed fire is believed to have been used. The number of bursts observed average from 10 to 15 although as many as 50 and as few as 4 were reported. No gun laying radar signals were intercepted by RCM Observers.

f. Bursts were generally reported as black with a small number of white. At 0125 to 0135Z it was reported that the white bursts were above 23,000 feet, while the black bursts were below that altitude.

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g. Bombing was accomplished by 8 formations consisting of from 7 to 18 aircraft at the following times, headings and altitudes:

<u>Formation</u>	<u>Aircraft</u>	<u>BRT Time</u>	<u>Heading</u>	<u>Altitude</u>
1	11	0122Z	31 - 58°	20,000 -
2	14	0128Z	49 - 74°	20,500 - 23,000
3	12	0130Z	45 - 55°	23,000 - 24,000
4	18	0146Z	51°	19,500 - 21,000
5	11	0147Z	33 - 65°	21,250 - 22,200
6	9	0205Z	22 - 52°	20,000 - 21,000
7	10	0208Z	51°	19,300 - 21,000
8	7	0245Z	41 - 90°	21,500 - 23,000

out

2. DAIREN (38°55'N - 121°27'E):

a. Meager to moderate and inaccurate to accurate (one aircraft was struck at 0116½Z) heavy antiaircraft fire was encountered by 3 aircraft at 0116½Z, 0213Z and 0331Z at altitudes of 22,000 feet under CAVU conditions. Bursts were reported as black at 0116½Z and 0213Z and as black and white at 0331Z. No enemy aircraft were reported on the same course and altitude.

b. Bursts were reported as generally level, behind or abreast, and in line. It is also believed that Continuously Pointed type of fire was used.

3. CHENGHSIEN (34°43'N - 113°39'E):

a. Meager and inaccurate black heavy antiaircraft fire was encountered by one aircraft at 2320Z at 14,200 feet altitude under CAVU conditions. Deviations were reported as level, abreast and behind, and in line with the aircraft. Continuously Pointed fire is believed to have been used.

b. No antiaircraft opposition was reported by 2 aircraft bombing CHENGHSIEN at 2323Z at an altitude of 18,000 feet through 10/10 under-cast and at 2355Z at 12,500 feet through 5/10 undercast.

4. CHANGTIEN (36°48'N - 118°02'E):

a. Meager to moderate and inaccurate black heavy antiaircraft fire was reported by 3 aircraft over the area at 2305Z, 2325Z and 0134Z at altitudes varying from 15,000 to 16,500 feet under CAVU conditions. No enemy aircraft were reported on the same course and altitude and it is believed that Continuously Pointed fire was used, 15 to 20 bursts were reported.

Deviations were reported as follows:

2305Z	Level	Ahead	Left
2325Z	Above	Ahead - Abreast	Left
0134Z	Level	Abreast	Left - Right

out

5. TSINAN (36°39'N - 117°02'E):

a. Meager and inaccurate to accurate (one aircraft was rocked at 2338Z) black heavy antiaircraft fire was encountered by 2 aircraft as follows:

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<u>Time</u>	<u>Altitude</u>	<u>Deviations</u>	<u>Cloud</u>	<u>Remarks</u>
2300Z	17,000 ft	Level Ahead Left	CAVU	Did not bomb
2338Z	15,000 ft	Level ----- Left	4/10	Bombed
2350Z	19,000 ft	Level Behind Left	5/10	Bombed
		Above		
		Below		
0127Z	22,000 ft	Above Ahead In Line	5/10	Same aircraft that encounter HAA fire at 2300Z above. Bombed on this run.

b. Continuously Pointed fire is believed to have been used and no enemy aircraft were reported on the same course and altitude. The number of bursts observed varied from 5 to 7.

6. POSHAN (36°30'N - 117°50'E):

a. Meager to moderate and inaccurate black heavy antiaircraft fire was encountered by 2 aircraft each at 2300Z and 19,000 feet altitude and at 2343Z and 15,000 feet altitude. Weather conditions were reported as CAVU with haze at both times and no enemy aircraft were observed on the same course and altitude. It is believed that Continuously Pointed fire was used.

b. Deviations of bursts were approximately the same for each time and were generally level, abreast or behind, and left or in line.

7. TSINCTAI (Approximately 85 miles SW of 38°N - 118°E): Meager and accurate (the aircraft was rocked) heavy antiaircraft fire was encountered by one aircraft at 0445Z at an altitude of 15,500 feet under CAVU conditions. Meager and inaccurate automatic weapons fire was also encountered under the same conditions as above. Bursts were reported as both black and white. Deviations were below and ahead and no enemy aircraft were observed on the same course and altitude.

8. Vicinity of KUANGJAO at 37°00'N - 118°30'E: Meager and inaccurate black heavy antiaircraft fire was encountered by one aircraft at 2340Z at an altitude of 18,000 feet under CAVU conditions. Deviations were reported as level, behind and in line. No enemy aircraft were reported on the same course and altitude.

9. LINFEN (36°04'N - 111°31'E): Meager and inaccurate black heavy antiaircraft fire was encountered by one aircraft at 0600Z at an altitude of 17,000 feet under CAVU conditions. Deviations were reported as level and 7,000 feet below and to the left. No enemy aircraft were reported on the same course and altitude.

10. HINGCHENG (40°40'N - 120°44'E): Meager and inaccurate black heavy antiaircraft fire was encountered by one aircraft at 0120Z at an altitude of 20,000 feet under CAVU conditions. Deviations were below and to the left. No enemy aircraft were reported on the same course and altitude and it is believed that Continuously Pointed fire was used.

11. TEHSIEN (37°30'N - 116°20'E): Meager and inaccurate black heavy antiaircraft fire was encountered by one aircraft at 0430Z at an altitude of 19,000 feet under CAVU conditions. Deviations were level and in line. No enemy aircraft were reported on the same course and altitude, and barrage type is believed to have been used.

12. YENCHOW (35°29'N - 116°47'E): Meager and inaccurate black heavy antiaircraft fire was encountered by one aircraft at 18,500 feet altitude at 2237Z under haze and broken cloud conditions. Deviations were above and level, behind and in line with the aircraft. No enemy aircraft

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were reported on the same course and altitude and Continuously Pointed type fire is believed to have been used.

13. ANSHAN (41°08'N - 122°58'E):

a. Meager and inaccurate black heavy antiaircraft fire was encountered by one aircraft at an altitude of 22,000 feet at 0157Z, 12 minutes after bombs away at MUKDEN, under CAVU conditions. Deviations were below, behind and to the left. Continuously Pointed fire is believed to have been used and no enemy aircraft were reported on the same course and altitude. The number of bursts observed was 6.

b. Moderate and inaccurate small brown bursts of automatic weapons fire was also encountered in the vicinity of ANSHAN by one aircraft in distress at an altitude of 6,500 feet under CAVU conditions. Deviations were level and below, ahead, and in line.

14. Vicinity of CHENGHIAYING at 35°28'N - 115°33'E: Meager and inaccurate white heavy antiaircraft fire was encountered by one aircraft at 2220Z at an altitude of 18,500 feet under CAVU conditions during darkness. Deviations were reported as below and to the left. No searchlight activity was reported.

15. CHOWTSUN (36°48'N - 117°50'E): One aircraft observed black automatic weapons fire approximately 6 miles off course at 0615Z from an altitude of 15,000 feet under CAVU conditions in the vicinity of the above coordinates.

16. KAI FENG (34°46'N - 114°25'E): Meager and inaccurate white automatic weapons fire was encountered by one aircraft at 2205Z at an altitude of 17,000 feet through 2/10 undercast. Deviations were reported as below, behind and in line with the aircraft. The total number of bursts observed was 3. No enemy aircraft were reported on the same course and altitude.

B. SEARCHLIGHTS:

1. CHENGHSIEN (34°42'N - 113°25'E): Four inaccurate white beams were reported at 2200Z from an altitude of 18,000 feet through a 4/10 to 8/10 undercast by 3 aircraft. The searchlights remained on from 3 to 5 minutes.

2. Vicinity of YELLOW RIVER BRIDGE (34°57'N - 113°32'E): One searchlight was observed in the vicinity of the YELLOW RIVER BRIDGE from an altitude of 15,000 feet through a 7/10 undercast. The beam remained on for approximately 30 seconds, but never located the aircraft, being unable to penetrate the undercast.

C. GROUND-TO-AIR ROCKETS:

None reported.

D. BARRAGE BALLOONS:

1. One aircraft out of a formation of 11 observed 5 conventional barrage balloons approximately 3 to 4 miles northwest of the West part of MUKDEN flying at an altitude of approximately 4,000 feet. The time of observation was 0200Z.

E. HIGH-ALTITUDE BALLOONS:

1. East of ANSHAN: One aircraft of a formation of 8 reported one balloon at 20,000 feet altitude east of ANSHAN at 0117Z. It was described as similar to a conventional barrage balloon.

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2. Vicinity of CHUWA ISLAND (40°31'N - 120°49'E): Six to 8 large balloons, described as similar to the conventional barrage balloon, were observed by 4 crew members of aircraft 442 of the 468th Group, in the vicinity of Chuwa Island (40°31'N - 120°49'E). The balloons were just over the undercast at an approximate altitude of 13,000 to 14,000 feet. The observation was made from 21,000 feet.

3. Halfway between CHUWA ISLAND and 40°50'N - 121°51'E: One small balloon, reported as approximately 7 feet in diameter, (about the size of a jeep) was observed by the Bombardier of A/C 442 of the 468th Group. The balloon was over water at approximately 40°40'N - 121°30'E. The balloon appeared to be free, generally circular in shape, and gray in color. It was approximately 1000 feet above the aircraft which was at 21,000 feet.

4. Between MUKDEN and ANSHAN: Five crews reported seeing one high-altitude balloon on course between MUKDEN and ANSHAN at 0136Z or 8 minutes after bombs away. The balloon was flying at 22,000 feet and was described as both egg-shaped and sausage shaped. No cables or suspension were seen on the balloon and it could not be determined whether the balloon was moving or not.

F. SMOKESCREENS:

1. ANSHAN (41°08'N - 122°58'E): A smokescreen, covering the entire steel mill area and parts of the town was reported between 0117Z and 0140Z. Screening was reported as varying from 5/10 to 10/10 and the smoke was black and resembling an oil fire. The surface wind at ANSHAN was from 270° at from 15 to 20 miles per hour.

2. MUKDEN (41°49'N - 123°46'E): Damage Assessment Report Number 28 (Provisional), 15 December 1944 states:

"For the first time an effective smoke screen was used by the enemy. Several ineffective attempts at screening had been noted before, notable at YAWATA, ANSHAN, and NANKING using in nearly every case white smoke. At MUKDEN black smoke was used emanating from a number of double slit trenches roughly circling the arsenal and aircraft factory. Apparently the generator is housed in one of the slit trenches while the other is used by personnel. The screen was put into operation very quickly and intelligently taking maximum advantage of the prevailing wind. Strike photos from the first aircraft over the target show not a single generator functioning. Photos from the second formation over eight minutes later show some 15-20 generators functioning. Photos from the 4th formation, 24 minutes after the first, show nearly all generators in operation and the target and a large part of the arsenal well covered with smoke. Crew interrogations revealed that ANSHAN was likewise covered by a screen by the time the first formation passed by enroute to MUKDEN. Apparently the Jap expected the attack to develop against ANSHAN, rather than MUKDEN, but recovered quickly enough to set-up a screen which definitely hampered bombing. It is to be expected that with only a 30 minute warning, the Jap is capable of effectively screening a target." Reference, Annex 2, D.A. Report #28, attached.

G. BLACKOUT:

1. For that portion of the flight over Occupied CHINA during darkness, scattered lights were seen which remained lit.

H. DAMAGE FROM HEAVY ANTI-AIRCRAFT FIRE:

1. Five aircraft sustained minor flak damage as follows:

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<u>Group</u>	<u>A/C</u>	<u>Location</u>	<u>Time</u>	<u>Altitude Ft</u>	<u>Heading</u>	<u>Extent</u>
444th	6423	MUKDEN	0215Z	23,000	90°	Damage to horizontal stabilizer.
444th	65226	MUKDEN	0215Z	23,000	41°	Damage to leading edge of wing and horizontal stabilizer.
468th	6411	MUKDEN	0146Z	20,500	51°	Damage to #4 nacelle, about 20 holes.
468th	65203	MUKDEN	0208Z	20,100	51°	Damage to right flap and fuselage
468th	6409	DAIREN	0116½Z	20,000	287°	Damage to wing.

act part in #10 Damage

I. WARNING NETS:

1. Although our aircraft were tracked by the enemy's early warning radar net from 110°30'E to MUKDEN, it is not believed that he had prior warning of the attack against MUKDEN due to the initial absence of the effective smokescreen which developed during later stages of the bombing.

2. However, 21 or approximately 10 per cent of the total enemy fighter attacks occurring within a 50 mile radius of MUKDEN, took place prior to the first bombs away time (0122Z) or from 0105Z to 0121Z. This would indicate that the Jap did expect an attack to take place in this area. In addition it is believed that the enemy anticipated an attack against ANSHAN because of the observation of a smoke-screen at that location by crews of the first formations to attack MUKDEN.

3. In summation, the Japanese had prior warning of an attack in the general area, but did not know exactly at which point it would be directed.

Frank L. Scott, Jr.
FRANK L. SCOTT, JR.,
Lt. Col., Air Corps,
Chief, Intelligence Section.

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LINE 1

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ENEMY AIR OPPOSITION

* * * * *
*
*Prepared By: *
* OPERATIONAL INTELLIGENCE UNIT *
* XX BOMBER COM AND *
* * * * *

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I. JAPANESE FIGHTER TACTICS - MISSION NO. 19

TARGET: Mukden, Manchuria.

TIME: Day Mission. . . DATE: 7 December 1944.

1. General

a. 77 of the B-29's participating in the mission were attacked by enemy aircraft, and air opposition is rated as moderate. 4 B-29's were destroyed by fighter action, 2 by normal firing attacks, 1 by colliding with an enemy fighter and the fourth by a collision which is believed to have been intentional ramming on the part of the enemy pilot. In addition, 11 B-29's were damaged by fighter attacks, most of the damage being minor in nature. Preliminary claims of B-29 crews list 20 enemy aircraft destroyed, 10 probably destroyed and 30 damaged.

b. The enemy waged a total of 185 single and coordinated attacks, resulting in 247 individual encounters. 20 of the attacks, or 18 per cent of the total, were coordinated. Encounters were concentrated in the primary target area, but occurred also at various points on the route from the target, and at the last resort target. As shown in Table No. 1, 229 of the encounters or 93 per cent, occurred in the primary target area (considered as the area 50 miles in radius around Mukden). It is of interest to note that no enemy opposition was encountered on the route to the target before reaching this 50 mile area.

Table No. 1 - Details of Encounters

<u>Location</u>	<u>No. of Encounters</u>	<u>Type of E/A</u>	<u>Time</u>	<u>Altitude</u>
Primary Target (Mukden)	229	75 by NICK	0105Z	20,000
		41 by TOJO	to	to
		30 by OSCAR	0249Z	23,000
		22 by S/E		
		15 by TONY		
		16 by ZEKE		
		10 by ZEKE 32		
		9 by VAL		
		5 by NATE		
		2 by CLAUDE		
		2 by DINAH		
		2 by T/E		
Last Resort Target (Chenghsien)	1	1 by OSCAR	2353Z	12,500
Route Back Pingyuan	2	1 by OSCAR	0415Z	14,000
		1 by TOJO	0442Z	18,000

but see summary below

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Table No. 1 - Details of Encounters (continued)

<u>Location</u>	<u>No. of Encounters</u>	<u>Type of E/A</u>	<u>Time</u>	<u>Altitude</u>
Route Back				
Yucheng	3	1 by TOJO 1 by ZEKE 1 by OSCAR	0436Z and 0455Z	11,600 and 14,000
Sinsiang	3	2 by TONY 1 by OSCAR	0420Z 0426Z	16,500
Wukiao	2	1 by TONY 1 by S/E	0350Z 0354Z	13,300 17,000
SW of Anshan	4	4 by NICK	0228Z to 0249Z	18,000 to 21,500
Gulf of Liaotung	1	1 by TOJO	0155Z	21,000
S of Feicheng	2	1 by TONY 1 by OSCAR	0215Z 0415Z	21,000

c. It is estimated that the mission was opposed by approximately 85 fighters, consisting of about 30 NICKS, 15 TOJOS, 12 OSCARS, 8 TONYS, 8 ZEKES, 5 ZEKE 32, 5 VAL, 2 NATES, 1 CLAUDE and 1 DINAH. It is noteworthy that the Japanese again used obsolete aircraft such as VAL, NATE and CLAUDE. Some of the TOJOS appeared to be in combat for the first time as they were not camouflaged in any way, bore no oil stains, and are presumed to belong to a new unit as the pilots were described as green and inexperienced.

d. Of the encounters within the target area, 100 (43 per cent) occurred before bombing, 4 (2 per cent) occurred during bombing and 125 (55 per cent) took place after bombs had been dropped. The mission was intercepted first in the Anshan area, was attacked from there to the primary target and immediately thereafter. The rough split of 50 per cent of attacks before bombing and 50 per cent after bombing is typical of recent XX Bomber Command missions during which large numbers of encounters have taken place.

2. Direction and Level of Attacks

a. 45 per cent of all encounters were aimed at the front quarter, with 27 per cent originating at the right quarter, 18 per cent at the left quarter and 10 per cent at the rear. 45 per cent frontal attacks for Mission No. 19 compare with 40 per cent for Mission No. 18, 33 per cent in Mission No. 17, 32 per cent in Mission No. 16, and 53 per cent in Mission No. 15.

b. 65 per cent of the attacks were high, 14 per cent level and 21 per cent low. High attacks in Missions 18, 17 and 16 were 40 per cent,

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44 per cent and 46 per cent respectively.

c. Analysis of the level of attacks originating against the front quarter reveals that 81 per cent of all frontal attacks approached high. The high approach was also favored in attacks against the right and left quarters, but a preponderance of low attacks against the rear quarter was reported.

d. Examination of the direction and level data contained in Tables No. 2 and 3 and a comparison with similar analyses for previous missions shows that Jap pilots indicated even a greater preference for high frontal attacks in Mission No. 19 than in other recent missions. A preponderance of high frontal passes has been evident for the last 10 missions, and the proportion appears to be gradually increasing.

e. A summary of direction and levels of approach for all encounters is shown in Tables No. 2 and No. 3, and diagrammatically on the following page.

Table No. 2 - Direction and Level of Approach

Direction of Attack or Pass	Front		Right Side				Rear			Left Side			Total
	11	12	1	2	3	4	5	6	7	8	9	10	
High	38	21	31	24	12	6	4	1	2	1	4	18	162 (65%)
Level	2	3	5	3	4	0	1	3	1	0	5	7	34 (14%)
Low	4	2	5	3	8	7	6	3	4	4	5	0	51 (21%)
Total	44	26	41	30	24	15	11	7	7	5	14	25	247 (100%)
	111 (45%)		67 (27%)				25 (10%)			44 (18%)			

Table No. 3 - Level of Approach

Level of Approach	Front	Right Side	Rear	Left Side
High	90 (81%)	42 (63%)	7 (28%)	23 (52%)
Level	10 (9%)	7 (10%)	5 (20%)	12 (27%)
Low	11 (10%)	18 (27%)	13 (52%)	9 (21%)
Total	111 (100%)	67 (100%)	25 (100%)	44 (100%)

3. Exchange of Fire

a. Enemy pilots opened fire in 157, or 65 per cent, of the 247

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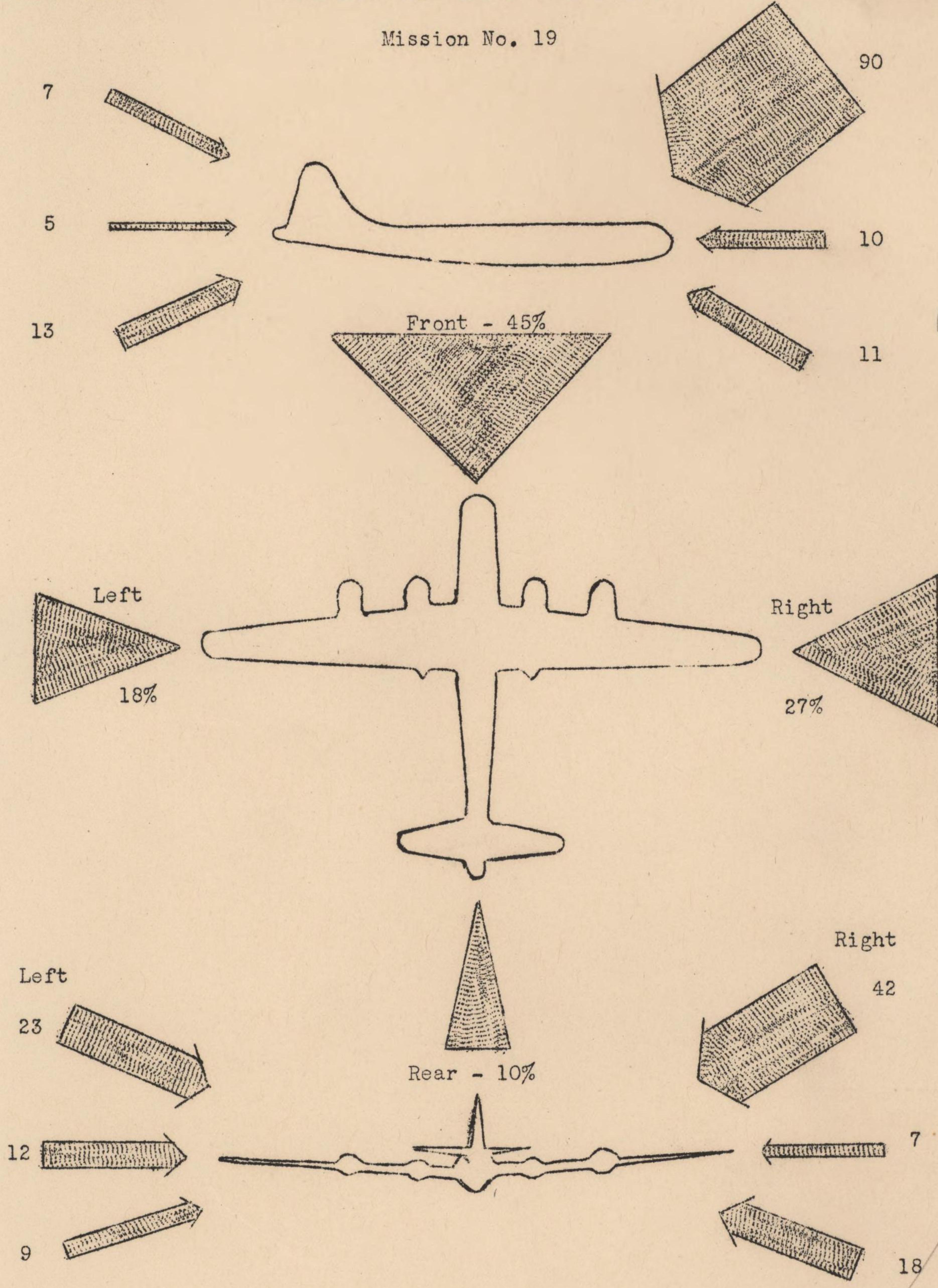
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Rear Attacks

DIRECTION AND LEVEL OF APPROACH

Frontal Attacks

Mission No. 19



see preceding page

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encounters, which correlates closely with the per cent of enemy fire met in other recent missions producing a large number of encounters. B-29's fired in 222, or 90 per cent, of the encounters which is a slightly higher percentage of fire than in recent missions. It was reported by a number of crews that the nose glass of the B-29 frosted, which made it difficult for the bombardier to spot and fire on enemy fighters. The percentage of B-29 fire would probably have been even higher if it were not for this condition. As shown in the following table, the enemy opened fire in 40 per cent of the attacks at ranges of 1000 yards and over, while B-29's opened fire in 59 per cent of the attacks at 1000 yards or over. This is an unusually high percentage of fire at long ranges, and a contributing factor in the case of B-29 fire was that vapor trails of enemy aircraft were an aid in spotting and tracking. One Group reported that vapor trails precluded the possibility of surprise attacks on Mission No. 19, even in the case of attacks coming out of the sun. Percentages of fire in different distance brackets are shown in Table No. 4.

Table No. 4 - Distances Opened Fire

<u>Distance (yards)</u>	<u>Enemy Fire</u>		<u>B-29 Fire</u>	
	<u>No. of Attacks</u>	<u>Percent</u>	<u>No. of Attacks</u>	<u>Percent</u>
0 to 499	14	9	24	11
500 to 799	50	33	39	17
800 to 999	28	18	29	13
1000 & over	57	40	130	59
Total	149*	100	222	100

* Enemy pilots fired in 8 additional attacks at unreported ranges.

4. Aggressiveness of Enemy Attacks and Pilot Ability

a. The enemy was unusually aggressive and determined in his attacks as evidenced by the fact that 128, or 52 per cent, were pressed to 250 yards or less. This same degree of aggressiveness was encountered in Missions No. 16 and No. 18, and compares to an average of about 40 per cent of attacks pressed to 250 yards or less in other recent missions. Of these 128 attacks, 46 were broken off between 250 and 100 yards, 74 were broken off between 25 and 100 yards, 7 were described as being flown through the formations, and 1 was carried through to a collision that destroyed the enemy fighter but resulted in No. 1 propellor damage only to the B-29. Enemy pilots were described by our crews as falling into 2 categories; aggressive and skillful, and another group that was aggressive but green and inexperienced. The latter apparently belonged to a new unit, and flew TOJOS that appeared to be fresh off the production line,

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as they were not camouflaged in any way, and bore no oil stains. These pilots did not use coordinated attacks, flew straight in towards the B-29's and were easy to track as they used no evasive tactics, even on the break-away. They were not lacking in aggressiveness or courage however, and their attacks were pressed to close quarters. Distances to which attacks were pressed are shown in Table No. 5, together with percentages.

Table No. 5 - Distances to which Attacks Were Pressed

<u>Distance(yards)</u>	<u>No. of Encounters</u>	<u>Percent</u>
1000 & over	9	4
800 to 999	16	7
500 to 799	48	20
250 to 499	41	17
0 to 249	128	52
Total	242*	100

Out
see above

* 5 encounters excluded because of incomplete data.

5. Aerial Bombs

a. Crews reported only 5 aerial bombing attacks which is a change in tactics from other recent missions that have met determined air op-
position. Aerial bombing attacks comprise only 2 per cent of total en-
counters, as compared to 15 percent in Mission No. 17 against Omura and
13 per cent in Mission No. 9 against Anshan.

b. All 5 of the aerial bombing approaches were made from the
front, 1 at 10 o'clock, 1 at 11 o'clock, 2 at 1 o'clock and 1 at 2 o'clock.
"Flipping" as well as "dropping" tactics were used, and both explosive and
phosphorous types were reported. A NICK dropped a cylindrical object
about 18 inches long with strips of tinsel or shackles dangling from the
bomb; it was dropped about 250 yards above the formation, and was not seen
to explode. 4 bombs about the size of hand grenades were dropped by an-
other plane and were reported as exploding with red bursts. 1 B-29 was
hit in the right flap and wing root with phosphorous particles, but major
damage was not done despite the fact that the phosphorous was still burn-
ing and the holes being enlarged when the B-29 landed at base. This was
the only damage caused by aerial bombing attacks. It is noteworthy that
VAL and DINAH were 2 of the 5 aircraft employing aerial bombs, the others
being 2 NICKS and a TONY. Aerial bombing attacks were not coordinated.

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6. Rockets: Only 1 rocket attack was reported, and even this was a tentative report as the rocket was not actually observed. A NICK was sighted about 500 yards out, approaching the B-29 at 2 o'clock slightly high. The right gunner observed a white puff with a blue flame center about 200 feet off the B-29's right wing. There was a white trail behind the burst extending horizontally towards the fighter but not the whole distance to it. The burst was smaller than an A/A burst, and was not similar to an aerial bomb burst. The enemy aircraft closed to about 300 yards and rolled out at 6 o'clock. Machine gun or cannon fire was not observed nor was any special launching apparatus visible under the wings. The B-29 was not damaged. The right gunner was the only crew member who observed the burst.

7. Coordinated Attacks

a. 20 of the 185 attacks were coordinated and accounted for 82, or 33 per cent, of the 247 individual encounters, which is about normal when compared to other recent missions. One change is noted, however, in the appearance of attacks coordinated by large numbers of fighters. 14 enemy aircraft were used in one attack, 13 in another, 6 in another and there were several attacks employing 4 planes. The remainder were 2 plane attacks. Crews reported that coordinated attacks were generally aggressive and well executed. Typical coordinated attacks are described and illustrated on the following pages.

b. A "Chow Line" attack was executed by 7 NICKS and 7 OSCARS flying in a line astern to the right of a formation of 12 B-29's. The enemy fighters were positioned high and in the sun; they accelerated, moved ahead of the formation, banked to the left and in rapid succession dove on the B-29's from 1 and 2 o'clock. Attacks were aimed particularly at the lead element and the lead plane of the C element. The Jap pilots opened fire at about 1200 yards and pressed their diving attacks as close as 25 yards. Most of the fighters leveled off and went out over the formation, others dived below it, and 3 flew directly through the formation. 1 B-29 sustained minor damage while 1 NICK is claimed as destroyed and 2 NICKS as damaged. See a diagram of this attack on the following page.

c. The 13 plane attack was similar to the 14 plane attack. It came from a line astern high in the sun off the right beam of a formation composed of 7 B-29's. The pursuit curve flown by the fighters was wider however and the attacks came in from 11, 12 and 1 o'clock. Diving approaches, closely pressed, and breakaway tactics were the same, however. All the B-29's in the formation were attacked but none was damaged. 2 of the fighters are claimed as damaged.

d. Another "Chow Line" attack was executed by 2 TCNYS and 2 NICKS flying line astern on the left of the same 7 plane formation. This attack occurred before bombing and the sun was on the left. Execution of the attack was similar to those described above, with the fighters approaching high at 9, 10, 11 and 12 o'clock. They opened fire at about 600 yards

C-I-7

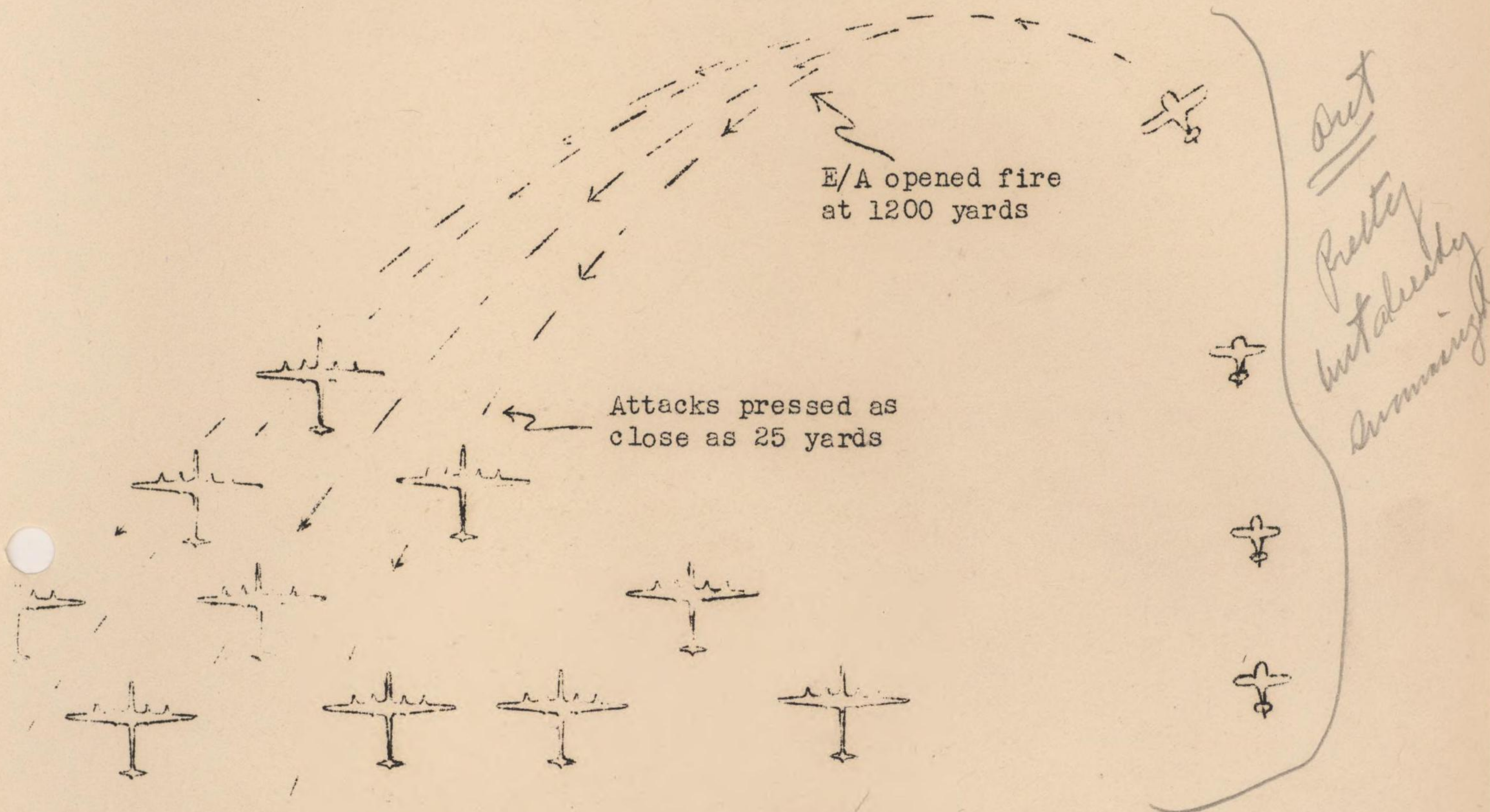
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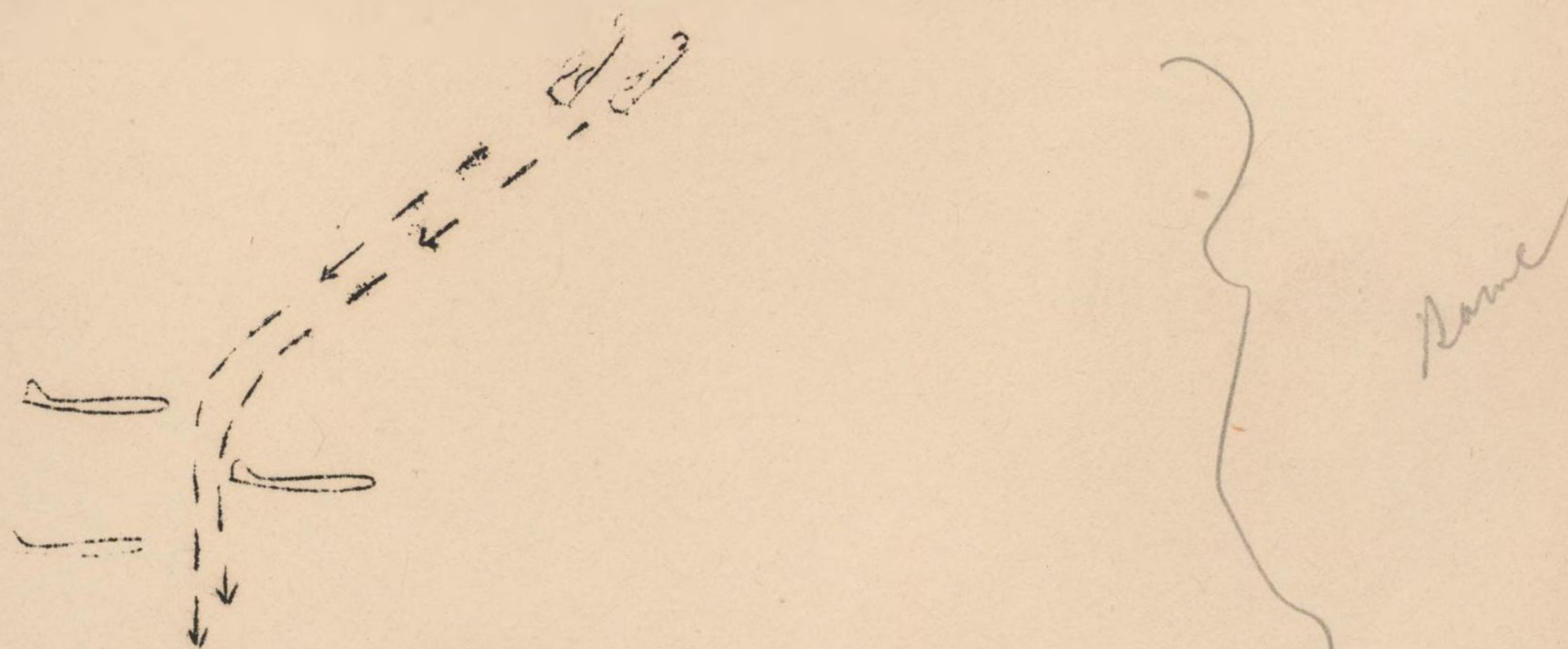
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3 fighters dived through the formation.

and pressed their attacks to 50 yards, breaking away in dives. Gunnery was poor, and no damage was done on either side, but the attack was well executed and flown skillfully.

e. A "12 o'clock Express" attack was coordinated by 2 TOJOS flying abreast and entering at 1 o'clock high. They opened fire at 600 yards while in steep dives and concentrated the attack on the No. 2 plane of a 3 plane formation. The enemy pressed the attack to 25 yards, and brokeaway in vertical dives. No damage was done on either side.



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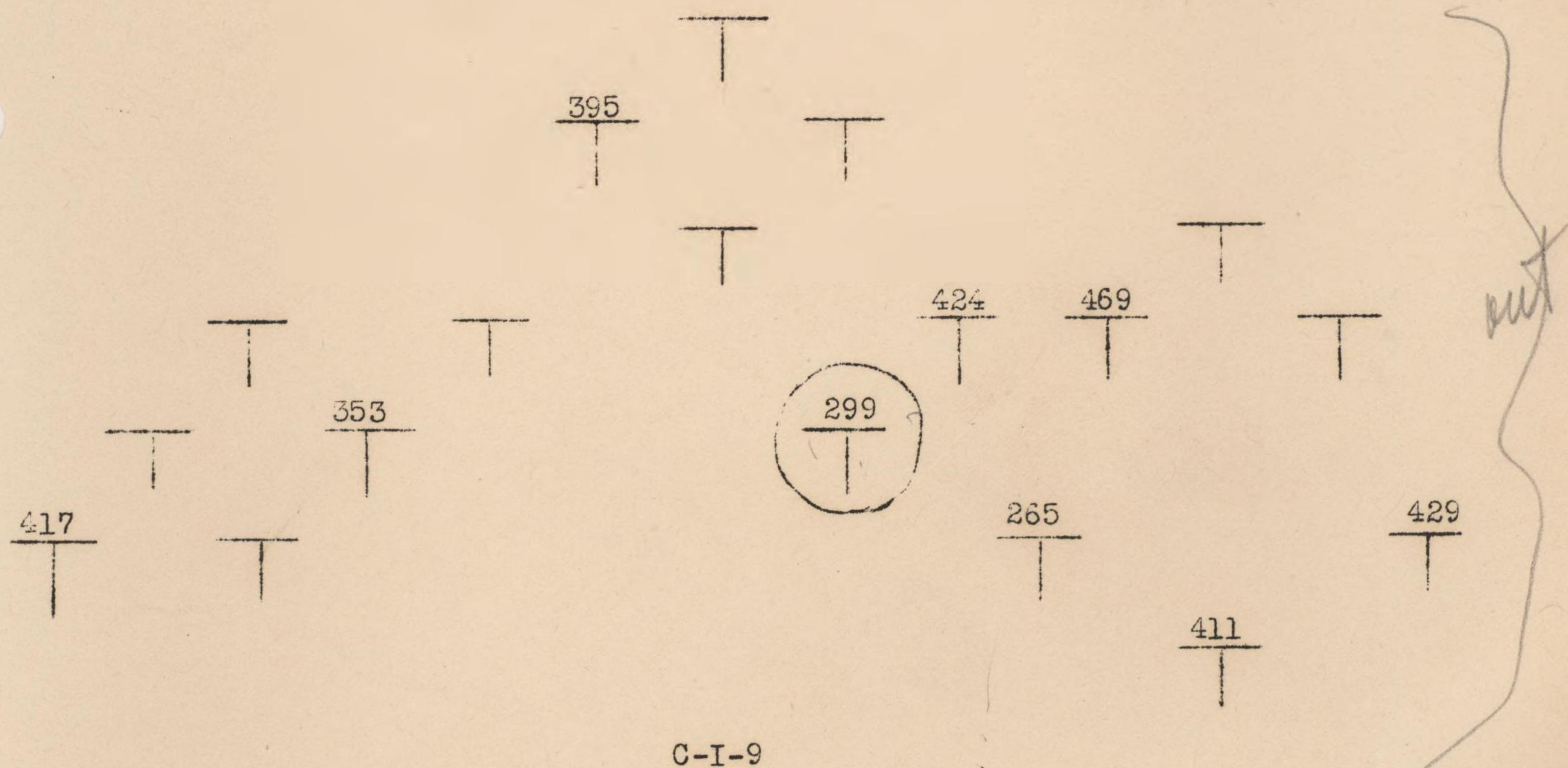
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8. Collisions and Ramming

a. 3 instances of actual contact between B-29's and Jap fighters occurred during the mission, 2 of which are believed to have been unintentional collisions so far as the enemy pilots were concerned. The third attack is questionable, but probably was a case of intentional ramming after the enemy plane was severely damaged and the pilot possibly wounded.

b. Aircraft Number 355 was flying the No. 2 position of "A" element in a 10 plane formation. The B-29 had been depressurized to eliminate frosting of the nose glass, and the bombardier spotted the vapor trail of a fighter approaching a mile out at 1230 o'clock level. The bombardier tracked the enemy plane continuously and opened fire in short bursts at 800 yards; other B-29's of the formation also fired at the fighter which was identified as a ZEKE. The bombardier of No. 355 was firing steadily when the ZEKE was 300 yards out, and at this point the fighter broke out in flames around the nose. It is believed that the pilot then attempted to bale out. The ZEKE banked to the right and his right wing was knocked off by 355's No. 1 propellor, although the B-29 dropped 25 feet in an effort to avoid the collision. The ZEKE somersaulted back over the left wing of the B-29, and the pilot was seen to bale out. All 4 blades of the No. 1 propellor were damaged and although it was twisted, rough and out of balance, the prop remained in operation all the way back to base. This encounter is classified as an unavoidable collision. It occurred in the primary target area, after bombs had been dropped.

c. Aircraft No. 299 was flying in the rear of the "C" element of an 18 plane formation 10 minutes after bombs had been dropped on the primary target. A TOJO approached the formation head-on and flew straight through it, colliding with the left wing of No. 299. Both planes were destroyed and crashed to the ground. The position of No. 299 and the other B-29's that witnessed the action are indicated in the following diagram.



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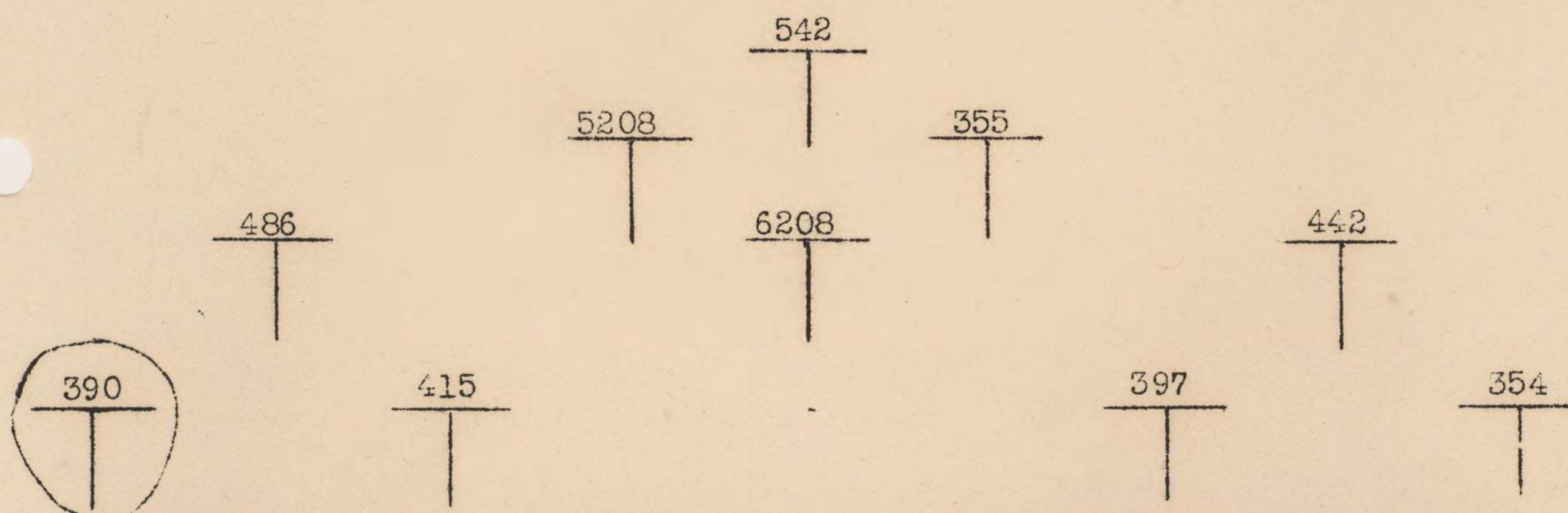
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The TOJO approached the formation at 11 o'clock on aircraft No. 395, passed under 395, approached aircraft No. 424 also at an 11 o'clock direction. TOJO then banked to his own right passed under 424, approached No. 299 level at a 1 o'clock to 11 o'clock direction, and collided with the left wing of the B-29. The bombardier of No. 395 fired on the TOJO and saw the enemy plane break into flames; the bombardier of No. 424 fired also but claims no hits, as was the case with aircraft No. 429. The top gunner of aircraft No. 411 fired and observed peices flying off the TOJO. It is probable that No. 299 fired at the enemy plane also, although no fire from the destroyed B-29 was observed. Aircraft Nos. 417, 469 and 353 witnessed the collision but did not observe enough of the action to supply evidence as to whether or not the Jap pilot rammed intentionally. Aircraft No. 265, however, reported that TOJO appeared to "blow up" just prior to the collision. The crew of aircraft 424 believes that it was not intentional ramming as TOJO apparently attempted to lift his wing to avoid No. 299 and get out of the formation. It appeared to observers on No. 429 that TOJO didn't attempt to ram, but that there wasn't enough apace to maneuver out of the fourmation. Analysis of all of the factors indicates that TOJO was hit prior to the collision, probably was out of control, and possibly even disintegrated immediately prior to the collision. There is also evidence that he attempted to avoid the collision. In addition, if the enemy pilot had approached the formation with the intention of a suicide ramming, he probably would have chosen one of the high front B-29's rather than a rear one, with the hope of destroying 2 or more. This encounter is also classified as an unavoidable collision.

d. Aircraft No. 390 was flying the No. 3 position of "D" element in a formation of 10 B-29's after bombing the primary target. Positions of the various B-29's were as shown in the following diagram:



A NICK approached the formation high at 12 o'clock on aircraft No. 486, was fired at by this B-29 and possibly others in the formation. NICK circled, followed the formation for 6 or 7 minutes and again attacked, this time flying over the formation from right to left, was fired on by

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several B-29's and probably was hit. The fighter then approached the formation from the rear at about 7 o'clock on No. 486. The tail and left gunners of No. 486 fired and when NICK was about 200 yards out his right engine began to smoke and part of the cockpit canopy was seen to fly off. 3 other B-29's in the formation observed that No. 390's tail gunner was also firing on the NICK at this time. It was observed that NICK'S nose appeared to be bashed in. The enemy plane dropped down apparently out of control, then seemed to recover itself and pulled up towards the tail of No. 390 with left wing high. NICK crashed into the tail of the B-29 shearing off the vertical fin and left stabilizer. (Several observers believed that the stabilizer was broken off by parts of the vertical fin as they were washed back in the slipstream) NICK broke up in mid-air. No. 390 maintained fair control for 2000 feet, then spun over on its back and dropped straight to the ground. Crews of all B-29's in the formation witnessed the action, and only No. 5208 believed it was an unintentional collision, stating that NICK mashed into 390 and was out of control. The crew of No. 6208 was split in its opinion, some believing that NICK could not have been in control after the amount of fire and damage it had received, and others believing that he was in control. Crews of the other 7 B-29's believed that the Jap pilot rammed intentionally after his plane had been severely damaged and possibly he himself had been wounded. There was general agreement among all crew members that the NICK pilot did not originally attack the formation with the intention of ramming, but decided to do so only after being hit. If NICK'S right engine was inoperative just prior to the collision, the fact that his left wing was high may indicate that he spun into the B-29 and actually was out of control at the time. The point is open to question, but the encounter is believed to have been a last minute decision on the part of the enemy pilot to intentionally ram.

9. Breakaways: Dives accounted for over 50 per cent of the break-away maneuvers which has been the case in almost all XX Bomber Command missions to date. There was a greater proportion of dives straight through the bomber formation than previously reported, and also some instances of fighters flying level through the formations. Split S's, banks, rolls and wing-overs were also reported.

10. Evasive Action By B-29's

a. Aircraft 355, as previously reported, dumped the stick and dropped 25 feet in an effort to avoid colliding with a ZEKE which hit the No. 1 propellor. This evasive action undoubtedly prevented the destruction, or at least serious damage, of the B-29.

b. B-29's on 3 occasions outside of the target area turned into fighter attacks and reported this maneuver as being effective in throwing fighters off pursuit curves.

c. No other evasive action by B-29's was reported.

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11. Preliminary Claims - Enemy Aircraft
a. Details of encounters resulting in preliminary claims of enemy aircraft destroyed, probably destroyed and damaged are shown in Table No. 6.

Table No. 6 - Details of Combat - Preliminary Claims

Enemy Aircraft	Claim	No. of B-29's in Formation	Direction and Level of Approach	B-29's Opened Fire (yards)	Distance I/A Brokeaway or Disintegrated (yards)
TOJO	Destroyed	11	10 level	300	250
TOJO	Destroyed	11	1 high	1000	600
NICK	Destroyed	9	10 level	1200	700
TONY	Destroyed	9	10 high	1200	100
OSCAR	Destroyed	17	10 high	400	50
VAL	Destroyed	18	7 level	900	800
TOJO	Destroyed	18	11 high	1000	---
TOJO	Destroyed	17	12 high	750	130
ZEKE	Destroyed	--	12 level	1200	---
NICK	Destroyed	--	7 low	400	---
NICK	Destroyed	11	5 high	1000	800
OSCAR	Destroyed	8	4 low	800	500
VAL	Destroyed	14	10 level	900	900
NICK	Destroyed	12	1 high	800	---
NICK	Destroyed	12	6 level	250	100
NICK	Destroyed	7	3 high	300	25
NICK	Destroyed	7	3 level	600	200
NICK	Destroyed	7	4 low	300	200
NICK	Destroyed	7	2 level	1000	150
NICK	Destroyed	7	3 level	600	150
OSCAR	Prob Dest	17	1 high	1000	600
OSCAR	Prob Dest	17	3 low	1200	800
TONY	Prob Dest	--	7 low	1200	1100
NICK	Prob Dest	11	5 high	1000	800
NICK	Prob Dest	12	8 low	200	200
OSCAR	Prob Dest	13	9 level	600	500
OSCAR	Prob Dest	9	11 high	900	200
ZEKE 32	Prob Dest	9	10 level	900	600
TOJO	Prob Dest	18	11 high	900	300
OSCAR	Prob Dest	18	4 high	400	300
TCNY	Damaged	11	8 low	1200	700
TOJO	Damaged	11	3 low	1200	700
TOJO	Damaged	11	1 low	800	100
NICK	Damaged	9	2 high	1400	700
OSCAR	Damaged	9	10 high	1200	300
ZEKE	Damaged	9	10 high	1200	25
DINAH	Damaged	9	10 high	500	100

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Table No. 6 - Details of Combat - Preliminary Claims (continued)

Enemy Aircraft	Claim	No. of B-29's in Formation	Direction and Level of Approach	B-29's Opened Fire (yards)	Distance E/A Brokeaway or Disintegrated (yards)
NICK	Damaged	9	11 low	700	600
TONY	Damaged	9	11 ---	700	---
VAL	Damaged	18	3 level	600	600
ZEKE	Damaged	17	5 low	1000	600
OSCAR	Damaged	18	12 high	1100	300
NICK	Damaged	18	4 low	1000	850
NICK	Damaged	17	6 low	700	650
TONY	Damaged	18	3 level	1200	---
NATE	Damaged	17	10 high	200	200
NICK	Damaged	11	1 low	800	500
NICK	Damaged	14	2 high	1200	100
ZEKE 32	Damaged	14	11 high	2000	100
NICK	Damaged	11	7 high	600	600
OSCAR	Damaged	11	11 high	800	50
T/E	Damaged	14	9 level	900	600
NICK	Damaged	12	2 high	2000	300
NICK	Damaged	12	1 high	---	---
NICK	Damaged	12	1 high	---	---
NICK	Damaged	12	4 high	800	750
TOJO	Damaged	7	11 high	1000	25
TOJO	Damaged	7	11 high	1000	25
TOJO	Damaged	7	10 high	500	200
VAL	Damaged	13	11 high	600	500

b. As shown in the following table, claimed aircraft approached B-29's from all positions of the clock, with the majority or 33 per cent approaching at the front quarter.

Table No. 7 - Direction of Approach - Preliminary Claims

Direction	Front			Right				Rear			Left		
	11	12	1	2	3	4	5	6	7	8	9	10	
Claims	10	3	7	4	7	5	3	3	3	2	2	11	
Total	20(33%)			16(27%)				9(15%)			15(25%)		

12. B-29's Destroyed By Firing Attacks: Details are not available regarding the firing attacks which destroyed 2 B-29's. It is merely known that these two aircraft were attacked by fighters, which are presumed to be responsible for their destruction.

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13. New Aircraft, Armament and Equipment

a. A twin engine fighter with twin tail booms was observed in the distance. Its appearance was described as being very similar to the P-38. This plane has been observed and reported in previous missions.

b. A NICK was reported as having guns mounted in the wings.

c. 1 B-29 at 20,000 feet altitude observed a new silver TOJO with smooth bubble type canopy. The fighter passed so close that the features of the enemy pilot were visible. 2 crew members stated that the pilot did not appear to be wearing an oxygen mask, which suggests the possibility of a pressurized cockpit, or a small oxygen tube which is not easily discernable.

14. New Tactics: A checkerboard NICK was reported as following a B-29 formation out of range at 6 o'clock. As the NICK maneuvered in such a way as to feint a pass at the rear of the formation, closely pressed attacks would be carried out by fighters flying on the beams.

15. Summary

a. Air opposition is rated as moderate, with 77 B-29's being attacked by enemy fighters. 4 B-29's were destroyed by fighter action, and 11 damaged.

b. Preliminary claims of enemy aircraft destroyed, probably destroyed and damaged are 20 - 10 - 30.

c. The enemy waged 185 single and coordinated attacks, comprising 247 individual encounters. 20 attacks were coordinated.

d. Opposition was not met until the primary target area was reached. 229 of the encounters occurred in this area, 43 per cent taking place before, 4 per cent during and 55 per cent after bombs were dropped. 18 attacks occurred on the route back from the target.

e. It is estimated that the mission was opposed by approximately 85 fighters, mostly NICKS, TOJOS and OSCARS.

f. High frontal attacks predominated. 45 per cent of all encounters originated at 11, 12 or 1 o'clock, 81 per cent of which were high.

g. Enemy pilots fired in 65 per cent of the encounters and B-29's in 90 per cent of the encounters. Much of the firing on both sides was done at long ranges.

h. Enemy attacks were unusually determined and aggressive, 52 per cent being pressed to 250 yards or less.

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- i. Enemy pilots were skillful with the exception of 1 TOJO unit which were green and inexperienced but nevertheless aggressive.
- j. 5 aerial bombing attacks and 1 rocket attack were reported. Coordinated attacks were well executed, with several involving large groups of fighters.
- k. There were 2 instances of unavoidable collisions between B-29's and fighters, and 1 instance of what was probably intentional ramming.
- l. Fast dive was the most common breakaway maneuver.

16. Enemy Aircraft Markings

<u>Color</u>	<u>Enemy Aircraft</u>	<u>Wing and Fuselage Markings</u>	<u>Tail Markings</u>
Silver	TOJOS	Red Suns.	
"	TOJO	Red ball on side.	
"	TOJOS	Red wings and cowling.	
"	TOJOS	No markings observed.	
"	NICK	No markings observed.	
"	TONY	Green cowling.	
"	TONYS	Red balls under wing.	
"	ZLKE 32	Red dots on wing.	
"	VAL	Red dots.	
"	OSCARS	Red balls on top and bottom of wings.	
Olive-drab	NICKS	No markings observed.	
"	NICKS	Red balls on wings and fuselage.	
"	VAL	No markings observed.	
"	S/E Rad.	No markings observed.	
"	OSCAR	Red balls on wing.	
"	TOJOS	Orange wings, brown band around fuselage; red balls on fuselage and top and bottom of wings.	Brown stripe on vertical stabilizer.
Grey	TOJO	Red balls on fuselage and wing.	
	NICK	No markings observed.	
Green	TONY	White spinner, red cowling.	
Brown	NICKS	No markings observed.	
"	T/E	Redish-black balls on wing.	
"	VAL or CLAUDE	Black and blue on fuselage.	

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16. Enemy Aircraft Markings (continued)

<u>Color</u>	<u>Enemy Aircraft</u>	<u>Wing and Fuselage Markings</u>	<u>Tail Markings</u>
Black	ZEKE or TONY	Nose section painted red, yellow circle around prop hub.	
"	NICK	Green stripe around middle with white markings resembling an "H" on the stripe.	
"	NICK	No markings observed.	
"	S/E (fixed gear)	No markings observed.	
"	S/E	No markings observed.	
"	DINAH	Orange band on cowling.	
"	TONYS	White stripes on wing.	
Crimson	OSCAR	Silver wings with red circles.	2 yellow stripes on tail.
Yellow & black	ZEKE	Diamond on fuselage.	
Camouflaged	NICKS	No markings observed.	
" (grey)	TONY	No markings observed.	
"	TOJO	No markings observed.	
" (OD)	ZEKE	Red ball on wing.	
"	CLAUDE	No markings observed.	
"	TONY	No markings observed.	
Olive-drab & blue	ZEKE 32	OD top, blue belly.	
Blue & yellow	CLAUDE	Blue fuselage with yellow wings.	
Unreported color	NICK	Diagonal stripes across black wings.	
"	NICK	Yellow balls with 3 narrow black and white stripes across the ball.	
Dark color	TONY	Red ball on wing.	

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ANNEX

D

WEATHER INFORMATION

- I - Weather Information
- II - Chart - weather as Forecast and Encountered
- III - Synoptic Map

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I - WEATHER INFORMATION

Mission No. 19

7 December 1944

	As Forecast	As Encountered
Base (Take-off)	Broken stratocumulus, base 5000' tops 6000'. Altostratus overcast base 8500' top 14,500'. Visibility 4 miles	PENGSHAN: Overcast at 8000'. Visibility 6 miles in haze. Wind calm. HSINCHING: Overcast at 7000'. Visibility 4 miles in haze. Wind SE 5. KIUNGLAI: Overcast at 8000'. Visibility 1-3 miles in dust. Wind ESE 3. KWANGHAN: Overcast at 8500'. Visibility 3 miles in haze. Wind SE 5.
Route Out	Broken stratocumulus base 5000' tops 6000' to other side of hills. Altostratus overcast will lower to 9000' in hills where it will thicken with top at 14,000'. Beyond hills altostratus overcast will thin and dissipate. From 113°E. to 116°E. clear. Beyond 116°E. low stratocumulus will increase to coast where it will be overcast base 2500' top 6000'. Over the gulf stratocumulus will become broken and dissipate entirely in mid-gulf. Clear from there to target. Freezing level 3000'. Moderate rime in clouds	BASE TO 113°E: Broken altostratus in layers with base at 9000' and tops 14,000'. Some layers reaching to 18,000' over the mountains. Some light icing and light turbulence encountered. 113°E. to FIRST ASSEMBLY POINT: 5/10 to 8/10 altostratus and altocumulus bases at 10,000' and tops at 13,000'. 5/10 to 8/10 thin cirrostratus at 22,000' which dissipated at 117°E. FIRST ASSEMBLY POINT TO TARGET: Altostratus and altocumulus dissipated rapidly after passing first assembly point. There was only 1/10 altocumulus at 11,000' over final assembly point and no clouds from there to target.
Target Area	Clear. Visibility 25 miles. Vapor trails likely above 20,000'. Altimeter setting: Primary Target - 30.53 Secondary Target - 30.48 Tertiary Target - 30.53.	Sky clear. Visibility unlimited at primary and secondary targets. Surface wind estimated moderate northerly as shown by drifting smoke.
Route Back	Similar to route out as far as 109°E. then becoming overcast with base 8000' and tops 12,000' persisting over hills to base.	Clear over gulf and China coast except for 1/10 altocumulus at 11,000'. Over Eastern China 1/10 cirrus at 18,000' increasing to 5/10 cirrostratus at 114°E. and to 8-9/10 by 112°E. Between 114 and 112° other higher cirrus layers of unknown height. At 109°E. the higher layers of cirrus dissipated and 7/10 to 10/10 altostratus developed in patches with tops at 13,000'. From 109° to base the altostratus became overcast and the tops lowered to 11,000' in the base area the altostratus was solid from 6000' to 11,000' with moderate to severe rime ice and moderate turbulence encountered on let down.

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	As Forecast	As Encountered
Base on Return	Altostratus overcast with breaks, base 8000'. 5/10 stratocumulus base 3000' tops 4000'. Altimeter setting: 30.40. Visibility 5 miles.	<p><u>PENGSHAN</u>: Overcast at 5000' with lower broken at 1600'. Visibility 4 miles in haze. Wind N 10.</p> <p><u>HSINCHING</u>: Overcast at 6500', with lower scattered at 3000'. Visibility 8 miles. Wind North 7.</p> <p><u>KIUNGLAI</u>: Overcast at 6000' and lower scattered at 2500'. Visibility 4-6 miles in light rain. Surface wind NE 13.</p> <p><u>KWANGHAI</u>: Overcast at 9000' broken at 6000' and scattered clouds at 4000'. Visibility 10 miles. Light intermittent snow flurries.</p>

A. Winds Aloft - Forecast

Altitude	Base	Midway	Target
5,000'	180 deg - 12K		
10,000'	240 deg - 25K	260 deg - 27K	285 deg - 28K
15,000'	290 deg - 25K	265 deg - 40K	280 deg - 40K
20,000'	260 deg - 55K	270 deg - 57K	280 deg - 60K
22,000'	265 deg - 60K	270 deg - 65K	275 deg - 70K
25,000'	270 deg - 70K	270 deg - 80K	270 deg - 85K

B. Winds Aloft - Encountered

Altitude	Midway	Target
15,000'	270 deg - 45K	290 deg - 45K
17,000'	270 deg - 50K	
20,000'	275 deg - 50K	
21,000'		280 deg - 60K
22,000'		275 deg - 68K
23,000'		275 deg - 70K

C. Target Temperatures

As Forecast

Altitude	Temperature
10,000'	-12 deg C.
15,000'	-23 deg C.
20,000'	-31 deg C.
22,000'	-34 deg C.
25,000'	-38 deg C.

Mean Temperature Surface to 22,000': -22 deg C.

As Encountered

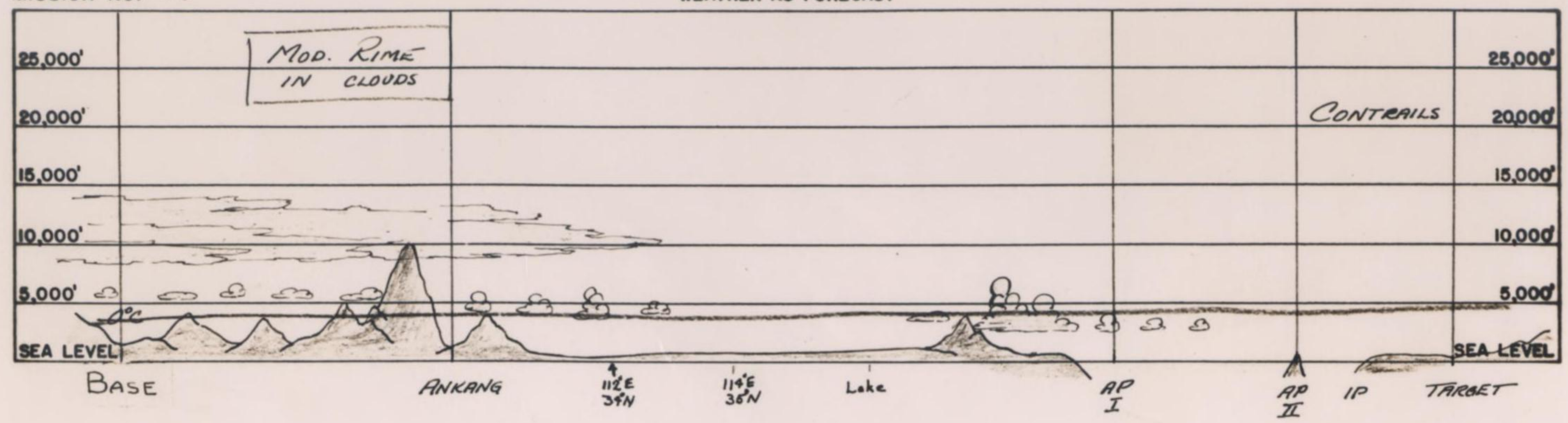
Altitude	Temperature
15,000'	-25 deg C.
18,000'	-36 deg C.
22,000'	-45 deg C.
23,000'	-43 deg C.

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S E C R E T

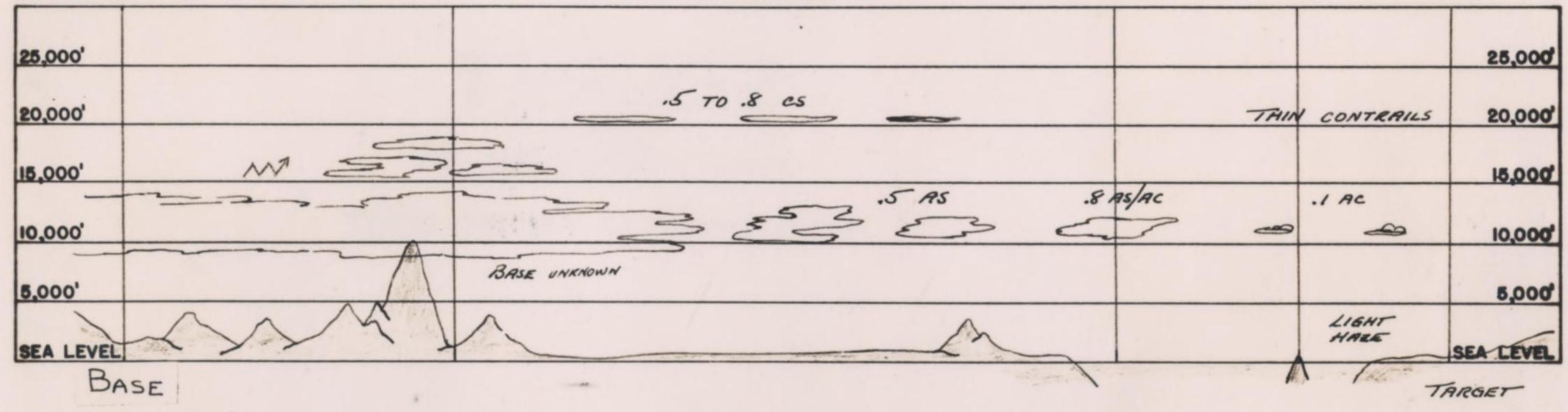
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 XX BOMBER COMMAND
 WEATHER AS FORECAST

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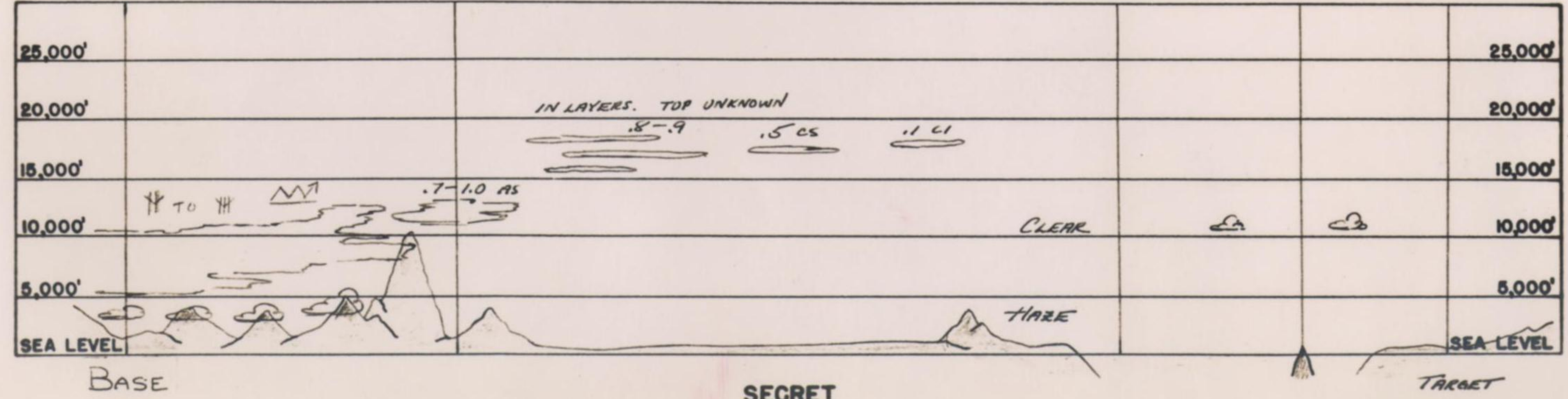
**WEATHER AS ENCOUNTERED
 ROUTE OUT**

MISSION NO. 19



**WEATHER AS ENCOUNTERED
 ROUTE BACK**

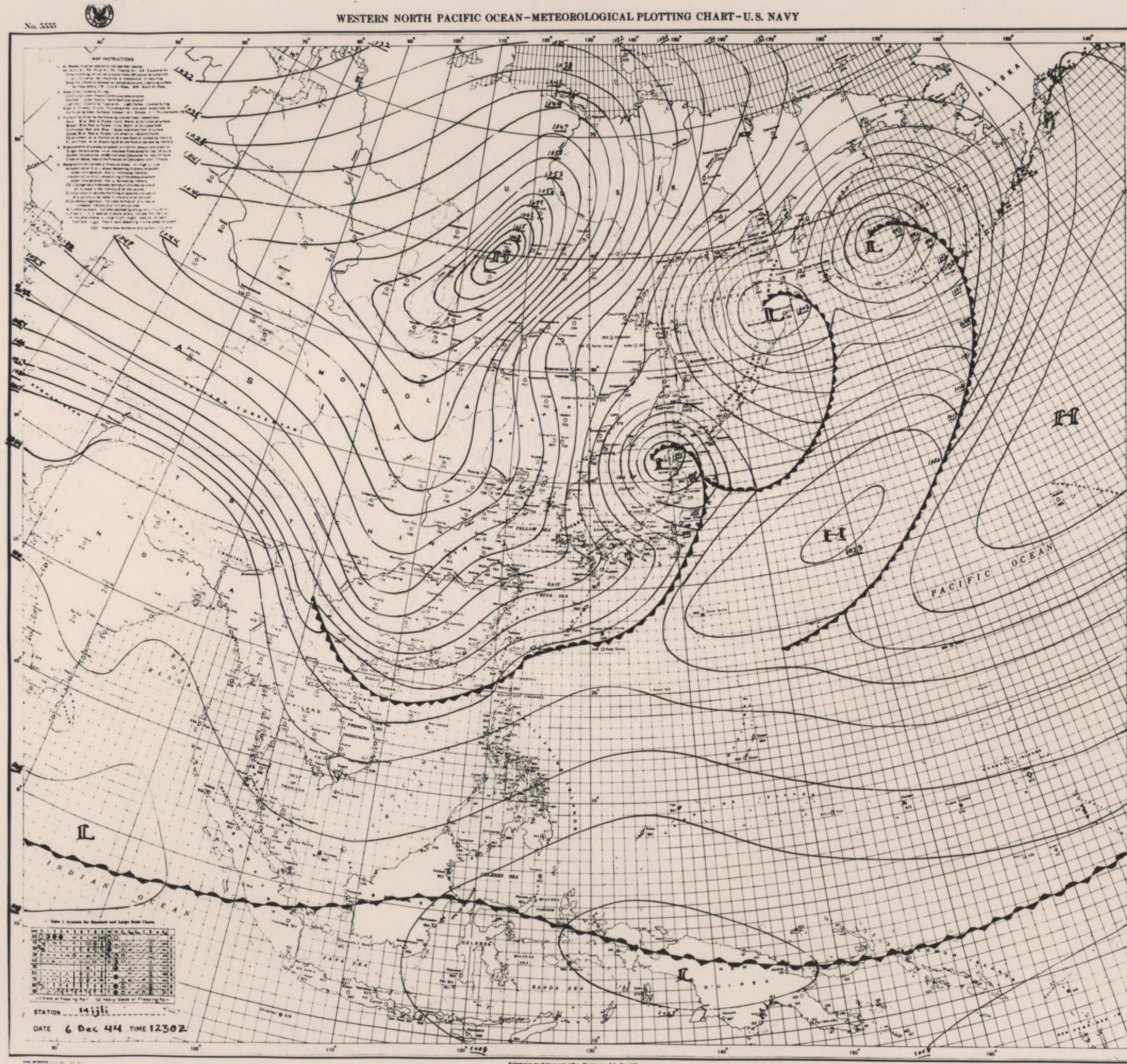
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ANNEX

E

COMMUNICATIONS INFORMATION

* * * * *
 * Prepared by: *
 * * * * *
 * Communications Section *
 * * * * *
 * XXI Bomber Command *
 * * * * *
 * * * * *

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 E.O. 11652, Sec. 3(E) and 5(D) of (E)
 NND 740120
 By *CD/mt* NARS, Date OCT 21 1975

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HEADQUARTERS
XX BOMBER COMMAND
APO 493

CONSOLIDATED
SPECIALIST MISSION
REPORT OF

XX BOMBER COMMAND COMMUNICATIONS (RADIO) OFFICER

Date prepared: 12 December 1944.

Field Orders No: 19.

Date of Mission: 7 December 1944.

1. Communications for mission number nineteen were in general satisfactory. On this mission for the first time a new frequency was assigned to each group it being either in the four or five megacycle band. This brings the total number of frequencies assigned each Group up to four and gives complete frequency coverage throughout the day. Only two of the Groups utilized the new frequencies and both reported that they were excellent. A high noise level was encountered on all frequencies, which can be attributed to the bad weather encountered on the way to and return from the target.

2. Two practice messages were sent out, for the purpose of acquainting communications personnel with the procedures involved in passing a message from the Command Post to the aircraft. A time study of the handling of these messages is contained in annex number 1 to this report.

3. Compliance with the provisions of Tactical Doctrine and the handling of required traffic by both ground stations and aircraft was very satisfactory. A compilation of the number of messages handled is as follows:

	<u>40th Gp</u>	<u>444th Gp</u>	<u>462nd Gp</u>	<u>468th Gp</u>
a. Aborts:	4	3	1	0
b. Bombs away:	4	4	1	6
c. Attack:	0	3	1	2
d. Position:	9	11	10	21
e. Intelligence:	0	0	0	3

4. This is the first mission run by this command on which all aircraft complied with all the provisions of the Tactical Doctrine. This is highly commendable and shows a decided improvement in training of personnel.

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5. A comparative study of the readability, signal strength and noise level of the frequencies in use, divided into two (2) hour periods is as follows. Time indicated is GMT:

AIRCRAFT TO GROUND STATION

<u>Frequency</u>	<u>1900-2100</u>	<u>2100-2300</u>	<u>2300-0100</u>	<u>0100-0300</u>
2055 kcs	S3 R3 W2	S3 R3 W2	S2 R2 W3	Off Air
2807.5 kcs	-- -- --	S3 R3 W5	S3 R3 W4	Off Air
2900 kcs	S5 R5 W0	S3 R3 W2	-- -- --	S2 R2 W4
2955 kcs	-- -- --	-- -- --	-- -- --	-- -- --
4785 kcs	S3 R3 W2	S3 R3 W2	S2 R2 W1	S1 R1 W3
4825 kcs	-- -- --	-- -- --	-- -- --	S3 R3 W2
*4995 kcs				
**5185 kcs				
8260 kcs	-- -- --	-- -- --	S5 R5 W3	S4 R4 W3
8310 kcs	S5 R5 W0	S4 R4 W2	S4 R4 W1	S3 R3 W3
8495 kcs	S3 R3 W3	S3 R4 W2	S4 R4 W3	S3 R3 W3
8545 kcs	-- -- --	-- -- --	S1 R1 W3	S2 R2 W3
12215 kcs	-- -- --	-- -- --	-- -- --	S2 R2 W4
12285 kcs	-- -- --	S5 R4 W1	-- -- --	S3 R3 W2
12335 kcs	S5 R5 W1	-- -- --	-- -- --	S2 R2 W5
12415 kcs	-- -- --	-- -- --	-- -- --	S3 R3 W2
<u>Frequency</u>	<u>0300-0500</u>	<u>0500-0700</u>	<u>0700-0900</u>	<u>0900-1100</u>
2055 kcs	Off Air			
2807.5 kcs	Off Air			
2900 kcs	S5 R5 W0	-- -- --	-- -- --	-- -- --
2955 kcs	-- -- --	-- -- --	-- -- --	-- -- --
4785 kcs	S1 R1 W4	S3 R3 W2	S3 R3 W2	S3 R3 W2
4825 kcs	S3 R3 W2	-- -- --	-- -- --	-- -- --
*4995 kcs				
**5185 kcs				
8260 kcs	S4 R4 W4	S5 R5 W3	S5 R5 W3	S5 R5 W3
8310 kcs	S4 R5 W1	S5 R5 W0	-- -- --	-- -- --
8495 kcs	S4 R3 W3	S4 R3 W3	S4 R4 W3	-- -- --
8545 kcs	S3 R3 W2	S3 R3 W2	S4 R4 W3	S4 R4 W1
12215 kcs	S3 R3 W2	S3 R2 W3	S2 R2 W3	S1 R1 W3
12285 kcs	S4 R4 W2	-- -- --	-- -- --	-- -- --
12335 kcs	-- -- --	-- -- --	-- -- --	-- -- --
12415 kcs	S4 R4 W1	S5 R5 W1	S4 R5 W1	S5 R5 W1

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GROUND STATION TO AIRCRAFT

<u>Frequency</u>	<u>1900-2100</u>	<u>2100-2300</u>	<u>2300-0100</u>	<u>0100-0300</u>
2055 kcs	S3 R3 W2	S3 R2 W4	S2 R1 W4	Off Air
2807.5 kcs	S3 R3 W3	S3 R3 W3	S2 R2 W3	Off Air
2900 kcs	S4 R4 W2	S3 R3 W3	S3 R4 W2	S2 R2 W4
2955 kcs	S4 R4 W2	S3 R4 W2	Off Air	
4785 kcs	S4 R4 W3	S3 R3 W2	S3 R3 W2	S1 R1 W4
4825 kcs	Off air			S4 R4 W2
*4995 kcs				
**5185 kcs				
8260 kcs	S2 R2 W3	S3 R3 W3	S3 R3 W2	S4 R4 W4
8310 kcs	S4 R4 W3	S3 R4 W3	S2 R3 W3	S4 R4 W3
8495 kcs	S4 R4 W2	S4 R4 W2	S3 R4 W2	S4 R4 W2
8545 kcs	S2 R2 W3	-- -- --	S1 R1 W3	S2 R2 W3
12215 kcs	Off Air		S2 R2 W4	S3 R3 W2
12285 kcs	-- -- --	S2 R2 W1	-- -- --	S2 R2 W1
12335 kcs	-- -- --	-- -- --	-- -- --	S3 R2 W5
12415 kcs	Off Air			S3 R3 W3
<u>Frequency</u>	<u>0300-0500</u>	<u>0500-0700</u>	<u>0700-0900</u>	<u>0900-1100</u>
2055 kcs	Off Air			
2807.5 kcs	Off Air			
2900 kcs	S2 R3 W2	S3 R3 W3	-- -- --	-- -- --
2955 kcs	Off Air			
4785 kcs	S2 R1 W5	S3 R3 W2	S3 R3 W2	S4 R4 W1
4825 kcs	S4 R4 W2	Off Air		
*4995 kcs				
**5185 kcs				
8260 kcs	S4 R4 W3	S5 R5 W2	S5 R5 W2	S5 R5 W2
8310 kcs	S3 R3 W3	S4 R4 W3	-- -- --	-- -- --
8495 kcs	S4 R4 W2	S5 R5 W2	S5 R5 W2	-- -- --
8545 kcs	S3 R3 W2	S4 R4 W2	S4 R3 W2	S4 R4 W1
12215 kcs	S3 R3 W2	S3 R2 W3	S2 R2 W3	S1 R1 W3
12285 kcs	S3 R3 W2	S2 R2 W1	-- -- --	-- -- --
12335 kcs	-- -- --	-- -- --	-- -- --	-- -- --
12415 kcs	S4 R4 W1	S5 R5 W1	S5 R5 W1	S5 R5 W1

- * - Transmitter was malfunctioning.
- ** - This frequency was on during the entire mission but was not logged by any operators.

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6. The following statistical data was compiled regarding the use of aids to air-navigation, all distances in statute miles:

a. Radio Homing Beacons:

<u>Location</u>	<u>No. of A/C Reporting</u>	<u>Average Initial Contact</u>	<u>Extreme Initial Contact</u>	<u>Average Track</u>
Ankang (PR)	78	173	284	300
Hsinching (CU)	72	200	359	347
Hsian (OF)	57	121	235	
Pengshan (MV)	11	48	90	355
Liangshan (LM)	27	102	143	
Suining (SI)	1	60	60	15
Ipin (VM)	1	75	75	236
Hanchung (CH)	1	55	55	238
Kwanghan (LK)	8	100	125	236
Kiunglai (OD)	8	50	175	

b. Radio Ranges:

Hsinching (CU)	34	96	169	247
Kwanghan (LK)	15	90	100	250
Kiunglai (OD)	1	55	55	

c. Requests for D/F aid by station and frequency are as follows:

<u>Station</u>	<u>Frequency</u>	<u>No. Requests</u>	<u>Type Bearing Given</u>		
			<u>I</u>	<u>II</u>	<u>III</u>
40th GP 7A3	8545 kcs	5	4		1
444th GP 3B8	8495 kcs	5		1	4
	4825 kcs	2		2	
462nd GP 7D3	8310 kcs	5	3	2	
468th GP 5D5	8260 kcs	1		1	
Hsinching 5X5	8130 kcs	1	1		

d. Air-to-air homing was attempted by all groups, with the following results:

40th Group - Flight A - A/C 4582 sent out homing signals at assembly point on 1250 kcs from 0005Z to 0030Z. The signals were picked up an average distance of 36 miles by seven A/C with an extreme distance of 62 miles.

Flight B - A/C 225 sent homing signals at assembly point on 1250 kcs from 2329Z to 0010Z. The signals were picked up an average distance of 27 miles by nine A/C with an extreme distance of 50.

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444th Group - Flight A - No signals were sent for this flight due to the fact that both lead A/C and deputy lead A/C aborted and A/C 353 took over lead at assembly point but formation had already been assembled so it was unnecessary to send homing signals.

Flight B - A/C 580 sent ETA and altitude at assembly point at 1704Z and sent homing signals at 1825Z at assembly point for approximately fifteen minutes. The signals were picked up an average distance of sixty miles by six A/C.

462nd Group - Flight A - A/C 728 sent out homing signals at assembly point. All A/C reported homing as being very successful, with one A/C reporting homing signal picked up at a distance of 75 miles.

Flight B - A/C 484 transmitted homing signals at assembly point and all A/C successfully made rendezvous.

468th Group - Flight A - A/C 4546 transmitted homing signals at assembly point on 1340 kcs from 2250Z to 2340Z. Seventeen A/C accomplished rendezvous with some A/C successfully picking up homing signals at a distance of 100 miles.

Flight B - A/C 4542 transmitted homing signals at assembly point on 1185 kcs from 2330Z to 0035Z. Nine A/C accomplished rendezvous with some A/C successfully picking up homing signals at a distance of 100 miles.

7. All groups reported strong atmosphericics on all assigned frequencies. Probable attempts at jamming as well as unidentified stations working on or near the assigned frequencies were also logged. These reports have been referred to the Radio Counter Measures Unit of this Command for necessary action.

8. No violations of cryptographic security were logged.

9. Malfunctions of equipment:

a. 40th Group:

- (1) A/C 225 compass out, blown fuse, repaired in flight.
- (2) A/C 4582 all antennas broke due to iceing.
- (3) A/C 4508 radio compass sense antenna broken. Used command antenna.

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- (4) A/C 457 all antennas broke off due to iceing.
 - (5) A/C 738 radio compass sense antenna broken due to iceing. Used command antenna.
- b. 444th Group:
- (1) A/C 399 interphone malfunctioned.
 - (2) A/C 584 no. three command receiver out.
 - (3) A/C 324 radio compass loop froze in position.
 - (4) A/C 588 command transmitter out.
- c. 462nd Group:
- (1) A/C 393 broken liaison transmitter antenna, broken radio compass antenna, trailing wire antenna jammed. All communications conducted using command antenna.
 - (2) A/C 463 liaison antenna shot off.
 - (3) A/C 3562 radio compass indicator out.
 - (4) A/C 503 command set antenna switching relay out.
 - (5) A/C 312 co-pilots microphone out, liaison antenna broke due to iceing. Trailing wire antenna jammed. Used command antenna.
- d. 468th Group:
- (1) A/C 4546 shorted antenna loading coil.
 - (2) A/C 217 right gunners' jack box shorted out. Replaced in flight.
 - (3) A/C 4469 liaison receiver out.
 - (4) A/C 415 liaison antenna broke due to iceing. Used trailing wire.
 - (5) A/C 3356 bad radio compass, repaired in flight by replacing VT-109 and VT-105.
 - (6) A/C 395 compass antenna broke, used command antenna.

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: Auth: CG XX BC :
: Date: 13 Dec 44 :
: Initials: / / :
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HEADQUARTERS
XX BOMBER COMMAND
APO 493

ANNEX NO. 1

TO

CONSOLIDATED
SPECIALIST MISSION
REPORT OF

XX BOMBER COMMAND COMMUNICATIONS (RADIO) OFFICER

Date prepared: 12 December 1944. Field Orders No: 19

Date of Mission: 7 December 1944.

1. The following is a time study involving message handling time of the two (2) practice messages that were sent on mission number 19.

2. The first message was filed for transmission at 062333Z and was transmitted via teletype, being receipted for by the various Groups as follows:

<u>40th Group</u>	<u>44th Group</u>	<u>462nd Group</u>	<u>468th Group</u>
2347Z	2348Z	2355Z	2348Z

a. The message was encoded at the Command Post and transmitted to the Groups ready for transmittal to aircraft. A time study showing time of receipt, means by which message was received and number of aircraft receiving message is as follows:

(1) 40th Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
331	Direct	0003Z	
396	"	0006Z	
831	"	0009Z	
729	"	0020Z	
294	"	0031Z	
420	"	0005Z	
579	"	0025Z	
225	"	0001Z	
363	"	0025Z	
738	"	0010Z	

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<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
831	Direct	2358Z	
522	"	0000Z	
466	"	0001Z	
4587	"	0006Z	
407	"	0010Z	
404	"	2400Z	
3394	"	2359Z	
348	"	0020Z	
313	"	0000Z	
297	"	0001Z	
306	"	0003Z	
508	"	0010Z	
582	"	0050Z	

Time of first transmission: 2358Z - Simultaneously on
Time of receipt by 1st A/C: 2358Z all four assigned
Time of receipt by last A/C: 0050Z frequencies.

(2) 444th Bomb Group

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
724	Direct	2357Z	
6324	"	2357Z	
423	"	0013Z	
352	"	0017Z	
492	"	0018Z	
343	"	0018Z	
225	"	0018Z	
538	"	0022Z	
411	"	0026Z	
399	"	0026Z	
492	"	0041Z	
462	"	0041Z	
202	"	0043Z	
378	"	0048Z	
353	Relay	0033Z	
584	Direct	0005Z	
580	"	0015Z	-

Received for 7
A/C who received
message but are
not shown as such
on this report.

Time of first transmission: 2356Z - Repeated four
Time of receipt by first A/C: 2357Z times until 0040Z.
Time of receipt by last A/C: 0048Z

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(3) 462nd Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
728	Direct	0032Z	
6213	"	0020Z	
316	Relay	0045Z	
209	Direct	0020Z	
311	Relay	0045Z	
329	Direct	0021Z	
312	"	0032Z	
506	"	0022Z	
457	"	0130Z	
505	"	0130Z	
484	Not received	----	Radio was out
393	" "	----	" " "
830	Direct	0033Z	
581	Relay	0021Z	
463	Direct	0003Z	
362	"	0003Z	
*346	Not received	----	
456	Direct	0025Z	
273	"	0005Z	

* - Radio Operator was busy scraping ice from pilots and co-pilots windows from 0000z to 0245Z.

Time of first transmission: 0003Z - Repeated three
Time of receipt by first A/C: 0003Z times until
Time of receipt by last A/C: 0130Z 0031Z

(4) 468th Bomb Group

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
486	Direct	2323Z	
442	"	0010Z	
469	Not received	----	Receiver out.
429	Direct	0220Z	
409	"	2350Z	
272	Not received	----	No reason given.
3354	" "	----	No reason given.
3355	Direct	2348Z	
4542	"	2350Z	
6208	"	2350Z	
397	"	0015Z	
415	"	2352Z	
454	"	0057Z	
217	"	0050Z	
5208	"	0000Z	
356	"	2350Z	
487	Not received	----	- Radio operator
6265	Direct	2355Z	was using radio
4546	"	2350Z	compass.

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<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
284	Direct	2350Z	
395	"	2358Z	
4494	"	2350Z	
417	"	2352Z	
279	"	0013Z	
525	"	0000Z	
471	"	0005Z	
3353	"	0030Z	
424	"	0031Z	

Time of first transmission: 2348Z
Time of receipt by 1st A/C: 2348Z
Time of receipt by last A/C: 0220Z

3. The second message was filed for transmission at 070019Z and was transmitted via radio and teletype being receipted for by the various groups as follows:

<u>40th Group</u>	<u>444th Group</u>	<u>462nd Group</u>	<u>468th Group</u>
0048Z	----	0055Z	0050Z

a. The message was encoded at the Command Post and transmitted to the Groups ready for transmittal to aircraft. A time study showing time of receipt, means by which message was received and number of aircraft receiving message is as follows:

(1) 40th Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
582	Direct	0101Z	
225	"	0104Z	

Group Communications Specialist Report was submitted incomplete with comment that all but four of the remaining A/C had received message by 0150Z.

(2) 444th Bomb Group:

Due to failure of communication personnel at forward area Command Post this message was not delivered to the 444th Group. At the time message was turned over to Signal Center for delivery, teletype communications were out between Hsinching and Kwanghan. This necessitated delivery of this message via radio, however the trick chief on duty in the radio station failed to ascertain if the message was transmitted to the 444th Bomb Group.

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(3) 462nd Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
3362	Direct	0105Z	
463	"	0127Z	
393	Not Received	----	All Antennae broke
4581	Direct	0120Z	
830	"	0145Z	
484	Not Received	----	Radio out.
505	Direct	0157Z	
457	Not Received	----	- Weak receiver un-
506	Direct	0115Z	able to pick up
312	Relay	0145Z	ground station
329	Direct	0128Z	
311	"	0118Z	
209	"	0116Z	
6213	Not received	----	- Blown blister,
6316	Relay	0145Z	operator to cold
728	Direct	0127Z	to operate radio
273	Not received	----	Operator was giv-
456	Relay	0145Z	ing first aid to
*346	Not received	----	injured crew mem-
			ber.

* - Radio operator was busy scraping ice from pilots and co-pilots windows from 0000Z to 0245Z.

Time of first transmission: 0058Z
Time of receipt by first A/C: 0105Z
Time of receipt by last A/C: 0157Z

(4) 468th Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
272	Direct	0100Z	
6409	"	0055Z	
429	"	0055Z	
469	Not received	----	Receiver out
442	Direct	0055Z	
3354	"	0050Z	
3355	"	0055Z	
424	Not received	0053Z	Received but was in
3353	Direct	0130Z	doubt as to accur-
471	"	0150Z	acy of message due
525	"	0100Z	to excessive noise
6411	"	0105Z	
279	"	0050Z	
417	"	0100Z	
4494	"	0055Z	

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<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
395	Direct	0055Z	
284	"	0055Z	
4546	"	0059Z	
6265	"	0050Z	
*487	Not received	----	
*356	" "	----	
5208	Direct	0100Z	
217	"	0050Z	
**454	Not received	----	
*415	" "	----	
397	Direct	0100Z	
6208	"	0103Z	
4542	"	0050Z	
4486	"	0053Z	

* - Operators claimed excessive static interference. A/C was covered with ice at this time.

** - As this was the only report received at this time it is not believed that the interference could be jamming.

Time of first transmission: 0050Z
Time of receipt by first A/C: 0050Z
Time of receipt by last A/C: 0130Z

b. This message was admittedly transmitted at the wrong time due to the fact that all formations were either in or approaching their bomb run at which time the radio operators were of necessity engaged in other jobs which they are required to do during approach to the target.

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Authority 760063

By SG NARA Date 11/8/05

S E C R E T

ANNEX

F

RADAR

I - Radar Information

- Section A - Navigation and Bombing
- Section B - Scope Photography
- Section C - Serviceability

II - Radar Tables

- Table A - Bombing Data
- Table B - Photographic Results
- Table C - Navigational Ranges
- Table D - Serviceability
- Table E - Malfunctions

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* Prepared by; *
* Radar Section *
* XX Bomber Command *
* * * * *

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Auth: CG XX BC
Initials W R
Date 11 Dec 44

HEADQUARTERS
XX BOMBER COMMAND
APO 493

CONSOLIDATED
SPECIALIST MISSION
REPORT OF

XX BOMBER COMMAND RADAR OFFICER

Date Prepared 11 December 1944 Field Orders No. 19
Date of Mission 7 December 1944

I - Radar Information

A - Navigation and Bombing

1. Radar provided a great aid both to navigation and bombing on this mission. Identification of check points along the route and computing of ground speed and drifts by radar were a few of the navigational aids. The assembly point number one was reported sighted and identified practically entirely by radar. Table C, Section II, Navigational Ranges, lists a number of the important check points reported sighted on the route.

2. The primary target area, city of Mukden, was reported identified by a large percentage of radar operators without difficulty. The city of Anshan provided an excellent offset check point on the bombing run, however, considerable difficulty was reported by a large number of operators in identifying the initial point.

3. Although only one (1) aircraft bombed entirely by radar, the radar operator did employ the radar-bombsight procedure as an aid to bombing. The radar operators did report sighting the city of Mukden in advance of the visual sighting and directing the aircraft on the preliminary bomb run.

B - Scope Photography

1. Although the number of scope pictures returned were few in comparison to the number of cameras completing the mission, a number of excellent pictures were obtained of the target area, check points on the route and assembly points. A total of thirty-

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four (34) cameras were installed in aircraft with a total of ninety-four (94%) per cent completing the mission. There were, however, a total of fifteen (15) malfunctions due to radar and camera failures. Seven (7) sets of pictures were useable with three (3) sets being of the 16 mm type of pictures. The bombing run could be traced on at least four (4) of the useable sets of pictures.

2. A greater number of K-24 type scope cameras were installed in aircraft and became airborne on this mission than on any previous missions. Additional K-24 cameras are in the process of being installed when necessary equipment is obtained. It is believed better results will be obtained when the K-24 cameras are installed completely with field modifications and adjustments.

C - Serviceability

1. In general, radar serviceability was lower on this mission than on other recent missions. Only eighty-one (81%) per cent of the AN/APQ-13 radar systems were reported in an operating condition over the target; however, all systems were reported operative, by maintenance personnel, before take-off. Five (5) systems had reported failures when first operated in flight. The main malfunction was pressurization of the RF unit. There are now three (3) different systems of pressurization of the RF unit being tested throughout this command. The first type is pressurization off of the de-icer system. A second is provided off of cabin or tunnel pressure. A third system is a new standardized installation made in the states. All three systems provided failures on this mission.

2. A number of malfunctions could have been repaired in flight if a complete radar operator's kit, with multi-meter, were available for each aircraft. A complete instruction booklet on Air Maintenance, now being prepared by this command, will assist considerably on this problem when published.

3. Auxiliary radar systems provided no malfunctions; however, eight (8) auxiliary inverters provided considerable difficulty.

S E C R E T

II - RADAR TABLES

A - BOMBING DATA

Total A/C Bombing	- 98
Total A/C Bombing Mukden (Visually)	- 79
Total A/C Bombing Dairen (Visually)	- 3
Total A/C Bombing Chengsien (Visually)	- 2
Total A/C Bombing Chengsien (Radar)	- 1
Total A/C Bombing T. of Opportunity	- 13
Total Radar Bombing	- 1

B - PHOTOGRAPHIC RESULTS

DATA	40th Gp		444th Gp		462nd Gp		468th Gp		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
No. Cameras Installed	7	-	9	-	7	-	11	-	34	-
C-3 Cameras	0	-	0	-	2	-	0	-	2	-
K-35 Cameras	2	-	2	-	1	-	3	-	8	-
K-24 Cameras	4	-	5	-	2	-	7	-	18	-
H2X Cameras	1	-	2	-	2	-	1	-	6	-
No Cameras in Abort, Early Ret & Miss A/C*	1a	14	1	11	0	0	0	0	2	6
No Cameras Complete Mission *	6	86	8	89	7	100	11	100	32	94
No Cameras in Radar & Camera Malfunction A/C	5	83	1	13	3	43	6	55	15	47
Sets of Pic Return #	2b	40	5	62	4	57	2	18	13	38
No of Negatives Ret	31	-	364	-	54	-	159	-	608	-
Sets of Pic Useable	2	100	3	60	1	25	1	50	7	54
Sets of Pic Tracing Bomb Run	0	0	2	40	1	25	1	50	4	31

* Percentage based on cameras installed

Percentage based on cameras completing mission

a - A/C 6322 (40th) landed at Ankang, has not returned at time of report

b - A/C 4582 (40th) returned few pictures before camera malfunction

S E C R E T

C - NAVIGATIONAL RANGES

NAME OF CHECK POINT	40th Gp		444th Gp		462nd Gp		468th Gp		Total	
	Number Reporting	Average Range	Number Reporting	Average Range	Number Reporting	Average Range	Number Reporting	Average Range	Total Number Reporting	Weighted Average Range
Mapping	16	38.0	14	36.4	15	42.0	12	26.6	57	36.2
Mukden (PT)	12	28.3	6	30.0	13	25.0	16	27.0	47	27.1
Dairen (ST)	2	25.0	3	34.0	2	31.0	-	-	7	30.5
Chengsien (LRT)	2	22.5	-	-	3	27.0	2	16.5	7	22.7
Takin Island (AP)	13	30.4	-	-	1	30.0	-	-	14	30.4
Taheishan Island (AP)	-	-	4	30.0	-	-	-	-	4	30.0
Fi Point (AP)	-	-	-	-	10	31.0	-	-	10	31.0
Taipingwan Point (AP)	-	-	-	-	-	-	4	18.8	4	18.8
Estuary of Taling River (IP)	15	23.9	5	15.2	13	25.0	14	20.3	47	22.2
Ankang	1	30.0	3	18.3	1	18.0	1	20.0	6	20.5
Anshan	-	-	2	22.5	-	-	2	45.0	4	33.7
Changshan Island	2	16.0	2	30.0	4	26.0	-	-	8	24.5
Chiensien	-	-	6	20.2	-	-	-	-	6	20.2
China Coast	10	30.5	-	-	4	35.0	5	38.6	19	33.6
Chuhwa Island	9	20.1	4	30.5	2	28.0	5	33.0	20	26.2
Dairen Peninsula	1	20.0	-	-	-	-	2	35.0	3	30.0
Han River	3	18.3	3	23.3	1	18.0	1	20.0	8	20.4
Hwang River	6	20.0	8	30.0	9	30.0	8	25.3	31	26.9
Kaifeng	-	-	-	-	2	28.0	6	26.7	8	27.0
Miaotao Island Gp	1	50.0	3	28.3	-	-	-	-	4	33.7
Sian	1	25.0	-	-	2	25.0	-	-	3	25.0

S E C R E T

D - SERVICEABILITY

DATA	40th Gp		444th Gp		462nd Gp		468th Gp		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
A/C Airborne	27a	-	27b	-	23d	-	31f	-	108	-
A/C Reporting	25	-	21	-	19	-	28	-	93	-
AN/APQ-13 Operative at Take-off	22	88	20	95	19	100	27	96	88	95
A/C Bombing *	26a	96	22c	81	20e	87	30f	97	98	91
A/C Reporting Bombing	24	-	20	-	18	-	27	-	89	-
AN/APQ-13 Operative over target #	18	75	15	75	14	78	25	93	72	81
AN/APQ-13 Unrepairable Failures #										
Total Unrepairable	7	29	6	30	7	39	5	19	25	28
Partial but Operative	6	25	5	25	2	11	9	33	22	25
Total	13	54	11	55	9	50	14	52	47	53
AN/APQ-13 Repaired in Flight	1	-	5	-	1	-	3	-	10	-
SCR-729 Failures	0	0	0	0	0	0	0	0	0	0
SCR-729 Inverter Bad	1	-	3	-	1	-	3	-	8	-
SCR-695 Failures	0	0	0	0	0	0	0	0	0	0

*Percentage based on A/C Airborne
#Percentage based on A/C reporting bombing

- a - Includes 2 return to other bases
- b - Includes 3 early returns, 2 returns to other bases, 1 missing
- c - Includes 2 landing at other fields
- d - Includes 1 lost, 1 missing, 1 return to other base, 1 not reported
- e - Includes 1 return to other base, 1 not reported
- f - Includes 1 lost over target, 1 missing, 1 crashed on runway on return

S E C R E T

E - MALFUNCTION

DATA	40th Gp	444th Gp	462nd Gp	468th Gp	Total
Malfunctions at takeoff					
Completely inoperative					
Spinner inop-fuse blown	1	0	0	0	1
Very bad spoking	1	0	0	0	1
Inverter Inop.	0	1	0	0	1
Sweep CCW only (Camera cause)	0	0	0	1	1
Very low range	1	0	0	0	1
Total Comp. Inop.	3	1	0	1	5
Malfunctions between takeoff & target					
Completely inoperative					
Pressurization bad	2a	2b,c	1d	0	5
Gain bad	1a	0	0	0	1
Xntr on blew fuse constantly	0	1	0	0	1
Inverter inop.	0	1	0	0	1
Xtal I, Xntr ba ³	0	0	2	0	2
Spoking bad	0	0	1d	1e	2
Enemy action	0	0	1	0	1
Tilt stuck	0	0	0	1e	1
Partial but op.					
Blank spaces on scope	1	0	0	0	1
Pressure trouble	3	2c	1	0	6
Gain poor, low range	2	1	1	8	12
Inverter erratic	0	0	0	1	1
Total partial inop.	6	3	2	9	20
Total Comp. inop.	3	4	5	2	14
Total malfunction between takeoff & target	9	7	7	11	34
Malfunctions between target & landing					
Completely inop.					
Spoking bad	1	0	0	0	1
Xtal I high, gain low	0	1	0	0	1
Bullet cases dented radome	0	0	1	0	1
No sweep rotation	0	0	1	0	1
No xtal I	0	0	0	1	1
Antenna stuck	0	0	0	1	1
Partial but op.					
antenna stopped temp	0	1	0	0	1

MALFUNCTIONS (Con't)

S E C R E T

DATA	40th Gp	444th Gp	462nd Gp	468th Gp	Total
Pressure trouble	0	1	0	0	1
Total Partial inop.	0	2	0	0	2
Total complete inop.	1	1	2	2	6
Total Malfunction between target & landing	1	3	2	2	8
Malfunctions repaired in flight					
Changed inverters	1	3b	1	1	6
Spoking; adj. reg. rect.	0	1	0	0	1
Replaced inv. fuse	0	1	0	1	2
Unspecified	0	0	0	1	1
Total	1	5	1	3	10
AN/APQ-13 Malfunctions					
Completely inop.	7	6	7	5	25
Partial but oper.	6	5	2	9	22
Repaired in flight	1	5	1	3	10
Total malfunctions	14	16	10	17	57
Malfunctions of auxil. equipment					
Bad Q-13 Inverter in SCR-729 Position	1	3	1	1	6
aux. inverter went bad	0	0	0	2	2
Total malfunctions	1	3	1	3	8

a, b, c, d, e - one set had two reported malfunctions; tabulated as two malfunctions.

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ANNEX

G

RCM INFORMATION

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* * * * *  
* Prepared by: *  
* RCM Section *  
* XX Bomber Command *  
* * * * *
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SECRET

S E C R E T

SECRET
.Auth: Cg, XX BC
.Initials: IMP
.Date: 15 Dec. 44

HEADQUARTERS
XX BOMBER COMMAND
APO 493

15 December 44

SUBJECT: ~~RCM~~ Report - Combat Mission No. 19, Mukden,
Manchuria, 7 Dec. 44 - Daylight.

TO : Commanding General, Twentieth Air Force
Washington 25, D. C.

A. General

On this mission, as on previous missions, RCM activities were confined to searching. Eight RCM equipped aircraft, each with one RCM Observer, searched for Early Warning Radar enroute to and from the target and for Radar Fire Control Equipment in the target area.

B. Results

1. Early Warning intercepts enroute to the target were normal and the majority were of the Army "CHI" type. The radars of the Early Warning Net in the Shasi, Anlu, Kaifeng Area were intercepted from the longitude of 110°30' and it is believed this radar net gave the enemy adequate warning to alert his defense system. Similar Early Warning equipment was intercepted in the Gulf of Po Area and in the target area.

2. In the target area, there were no radar intercepts with Radar Fire Control characteristics.

Intercepts

1. 65.6/500/34: Shasi Radar; A steady signal intercepted from 32°47' 110°27' to 33°31' 112°12'.

2. 72/520/42: Kaifeng area; a strong steady signal intercepted from 33°23' 111°48' to 35°30' 117°31'.
D/F'ed to 114°40' 36°15'.

3. 75.5/506/34: A strong steady signal D/F'ed to the China coast at 118°30' 37°50'. Other intercepts with similar characteristics may have originated from the radar site on the Shatiehtion Island (38°56' 118°20').

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4. 74-75/500/40: Signals of these characteristics were intercepted in the Gulf of Po area. On a previous mission into this area, signals with similar characteristics were D/F'ed to the following locations: A small island off of Dairen (38°57' 121°); Dairen (38°45' 121°45'); Miaotao Island Group (38°15' 120°45').

5. 70.7/510/25: Strongest at 39°40' 120°50'.

6. 68.5/518/25: Strongest at 40°04' 121°06'.

7. 110/390/55: D/F'ed on the China Coast at approximately 118°30' 39°10' near the 75.5 Mc. radar site located on Shatiehtion Island.

8. 103/390/55: D/F'ed to the Gulf of China. 120°15' 39°20'. It is interesting to note that on mission No. 9, a similar Mk 1 Model 1 Early Warning site was also D/F'ed to the Gulf of China 120°55' 39°47'. This suggests radar of the Mk 1 Model 1 type being placed on barges to provide adequate Early Warning.

9. 139/520/32: A few rough D/F cuts places this radar site South East of Chinchow approximately at 121°30' 41°. The frequency is rather low for a Mk 1 Model 3 but may be similar to a radar located at Dairen using the German Hoarding Type Antenna. Verification of this signal will be attempted on future missions.

C. Enemy Countermeasures

The following are excerpts from the Radio Operators interrogation:

1. 12 Mc. Band: Starting approximately at 06234Z, right after mission take-off and continuing thru to 070400Z, a station blasted our ground station receiver R5 S5. Sent call as follows: CQ CQ CQ DE JVV/JYE JVV/JYE JVV/JYE. It sounded very near, not like a signal picked up at a distance. Aerial operators did not report this interference.

A. The interference by "CQ DE JVV/JYE" was at such a strategic time, that it is believed this was jamming. It made reception impossible.

B. The interfering station "XUP" was also reported by A/C as jamming; claims show that XUP would send "Meaningless" dots and dashes, trying to "Chop" A/C sending, Especially at approximately 2141Z. This station has been reported on previous missions.

2. One A/C reported what might be intentional jamming on the 8 Mc. Band at 0320Z. Whenever he attempted to contact the A/G station, an unknown station held the key

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down.

3. Station 6WR was heard frequently sending Q signals. (Example: 6WR V 6WR QSA4). This occurred on the 8 Mc. band and tended to block everything else out.

4. For the past several weeks a considerable amount of what was believed to be enemy jamming has been noted on the 8 Mc. band by the A-7 ground station. It is apparently MCW and is extremely powerful. A bearing was taken on it by the A-7 D/F station and a reading of approximately 140 degrees was obtained. The jamming was noted by the ground station during a large part of the mission although a few aerial operators stated that they did not notice any.

D. Enemy Communications

Two signals, which were possibly related to the fighter attacks sustained by an RCM equipped aircraft, were intercepted by an RCM Observer monitoring enemy communications in the target area. Both were two way conversations. At 4725 Kcs, an excited male voice, apparently close by, was answered by another, weaker station. At 5720 Kc., a poor quality two way conversation was heard.

E. Equipment Malfunctions

1. An AN/APA-6 blanked out. The cause, as yet, is undetermined.

2. The Motor Drive D/F antenna was forced beyond its normal rotation while on sector scan and the trailing wire antenna motor R1-42 burned out. Limiting switches will be installed to prevent future operator error.

For the Commanding General:

Leo I. Herman
LEO I. HERMAN
Colonel, Air Corps
Actg. Adjutant General

-3-

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By SG NARA Date 11/8/05

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ANNEX

E

CENTRAL STATION FIRE CONTROL AND GUNNERY

* * * * *
* Prepared by: *
* Staff Gunnery Officer *
* XX Bomber Command *
* * * * *

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SECRET

HEADQUARTERS
XX BOMBER COMMAND
APO 493

SECRET

By Authority of the CG

11 Dec. 44 *WY*
Date Initials

CONSOLIDATED SPECIALIST MISSION REPORT OF STAFF GUNNERY OFFICER

Date Prepared 11 December 1944.

Field Order No. 19

Date of Mission 7 December 1944.

1. On the mission directed by Field Order No. 19 attacks by enemy fighters were the most aggressive of all encounters experienced to date. On previous missions the majority of attacks broke away between two and five hundred yards, with only an occasional fighter observed diving through our formations. On this mission the majority of fighters pressed their attacks to within fifty yards with numerous fighters observed diving through our formations. From two of these poorly executed aggressive attacks it is believed that accidental collision occurred with two of our B-29's, as there appears to be no evidence of deliberate ramming. It was reported that frost on the windows not only hindered our pilots from flying tight formations, but also prevented bombardiers from observing and firing at numerous enemy aircraft. As on previous missions the enemy favored the high frontal approach and also made good use of the sun in making attacks.

*ant
Bromide
gun*

2. The functioning of the Central Fire Control equipment is considered as satisfactory. An increase in malfunctions of turrets and machine guns was noted on this mission which was probably due to low temperature and frost conditions. A large portion of the malfunctions of machine guns could have been eliminated by the wiping of all excess oil from the mechanism of the guns before take-off.

The following statistical data is submitted:

	<u>40th</u>	<u>444th</u>	<u>462nd</u>	<u>468th</u>
Ammunition used test firing.	1,920	1,560	1,960	1,915
Ammunition used in combat.	20,535	15,920	17,235	27,435
Malfunctions of C.F.C. system.	4	5	2	6
Total turrets on mission.	120	110	95	145
Malfunction of cal. 50 M.G.	10	20	10	10
Total cal. 50 M.G. on mission.	240	220	190	290
Total airplanes (included in report)	24	22	19	29
Total percent malfunctions all groups C.F.C.	4%			
cal. 50 M.G.	5.3%			

Claims by our gunners:

<u>Destroyed</u>	<u>Probably Destroyed</u>	<u>Damaged</u>
20	10	30

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ANNEX

I

CAMERAS AND PHOTOGRAPHS

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By SG NARA Date 11/8/05

S E C R E T

I - CAMERAS AND PHOTOGRAPHS

Mission No. 19

7 December 1944

A. 40th Group

	K-18	K-20	K-22	Total
No. cameras airborne	4	b	6	10-e
No. in missing and non-reporting A/C	0	b	1	1-e
No. completing mission	4	b	5	9-e
No. photographing targets	3	b	3	6-e
Failure to photograph - mechanical	0	b	1-c	1-e
Failure to photograph - other reasons	1-a	b	1-d	2-e
No. usable negatives	57	b	187	244-e

- a. Believed master switch was not turned on.
- b. Information not available.
- c. Shutter froze.
- d. Camera doors not opened.
- e. Not complete.

B. 444th Group

	K-18	K-20	K-22	Total
No. cameras airborne	5	7	7	19
No. in missing and non-reporting A/C	0	1	1	2
No. completing mission	4	5	6	15
No. photographing targets	3	b	1	4-d
Failure to photograph - mechanical	0	b	4-c	4-d
Failure to photograph - other reasons	1-a	b	1	2-d
No. usable negatives	27	b	65	92-d

- a. Lens frosted.
- b. Information not available.
- c. Three inoperative shutters and one shorted intervalometer.
- d. Not complete.

C. 462nd Group

	K-18	K-20	K-22	Total
No. cameras airborne	6	10	8	24
No. in missing and non-reporting A/C	0	0	0	0
No. completing mission	5	8	5	18
No. photographing targets	3	0	3	6
Failure to photograph - mechanical	1-a	0	0	1
Failure to photograph - other reasons	1-b	8-c	2-d	11
No. usable negatives	25	0	38	63

- a. Electrical malfunction.
- b. Reason not reported.
- c. Six cameras not used.
- d. Reason not reported

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Authority 760063

By SG NARA Date 11/8/05

S E C R E T

I - CAMERAS AND PHOTOGRAPHS

Mission No. 19

7 December 1944

A. 40th Group

	K-18	K-20	K-22	Total
No. cameras airborne	4	b	6	10-e
No. in missing and non-reporting A/C	0	b	1	1-e
No. completing mission	4	b	5	9-b
No. photographing targets	3	b	3	6-e
Failure to photograph - mechanical	0	b	1-c	1-e
Failure to photograph - other reasons	1-a	b	1-d	2-e
No. usable negatives	57	b	187	244-e

- a. Believed master switch was not turned on.
- b. Information not available.
- c. Shutter froze.
- d. Camera doors not opened.
- e. Not complete.

B. 444th Group

	K-18	K-20	K-22	Total
No. cameras airborne	5	7	7	19
No. in missing and non-reporting A/C	0	1	1	2
No. completing mission	4	5	6	15
No. photographing targets	3	b	1	4-d
Failure to photograph - mechanical	0	b	4-c	4-d
Failure to photograph - other reasons	1-a	b	1	2-d
No. usable negatives	27	b	65	92-d

- a. Lens frosted.
- b. Information not available.
- c. Three inoperative shutters and one shorted intervalometer.
- d. Not complete.

C. 462nd Group

	K-18	K-20	K-22	Total
No. cameras airborne	6	10	8	24
No. in missing and non-reporting A/C	0	0	0	0
No. completing mission	5	8	5	18
No. photographing targets	3	0	3	6
Failure to photograph - mechanical	1-a	0	0	1
Failure to photograph - other reasons	1-b	8-c	2-d	11
No. usable negatives	25	0	38	63

- a. Electrical malfunction.
- b. Reason not reported.
- c. Six cameras not used.
- d. Reason not reported.

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Authority 760063

By SG NARA Date 11/8/05

S E C R E T

D. 468th Group

	K-18	K-20	K-22	Total
No. cameras airborne	6	12	4	22
No. in missing and non-reporting A/C	0	0	0	0
No. completing mission	6	12	4	22
No. photographing targets	4	7	3	14
Failure to photograph - mechanical	1-a	0	1-d	2
Failure to photograph - other reasons	1-b	5-c	0	6
No. usable negatives	46	108	54	208

- a. Magazine jammed.
- b. Camera froze.
- c. A/C 395 crashed while landing. Reason for 4 of the failures not reported.
- d. Camera late.

E. Totals

	K-18	K-20	K-22	Total
No. cameras airborne	21	29-a	25	75-a
No. in missing and non-reporting A/C	0	1-a	2	3-a
No. completing mission	19	25-a	20	64-a
No. photographing targets	13	7-a	10	30-a
Failure to photograph - mechanical	2	0-a	6	8-a
Failure to photograph - other reasons	4	13-a	4	21-a
No. usable negatives	155	108-a	344	607-a

- a. Information not complete.

Note: For information concerning radar cameras see Annex F, Radar Information.

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S E C R E T

S E C R E T

ANNEX

J

AIRCRAFT LOSSES AND DAMAGE

S E C R E T

DECLASSIFIED

Authority 760063

By SG NARA Date 11/8/05

S E C R E T

AIRCRAFT LOSSES AND DAMAGE

Mission No. 19

7 December 1944

A. Aircraft Losses

1. Known Battle Losses (3):

a. A/C 363 (40th) was damaged by an enemy fighter attack with the result that the number 1 propeller would not feather. The plane was escorted by 2 other B-29's, but the propeller finally fell off and the crew bailed out. The aircraft is thought to have crashed and burned near Lucheng (36°18'N - 113°19'E). At least 7 of the crew are believed to be in safe hands.

b. A/C 299 (462nd) is believed to have been rammed by or to have collided with a silver radial-engine fighter that was coming into the sun. It is thought that the enemy pilot either misjudged the distance or that he didn't see the B-29. This plane is possibly the B-29 that was seen to spin, dive, and then disintegrate in midair. Three parachutes were seen to open.

c. A/C 390 (468th) was seen by another aircraft of the same Group to have been rammed in the tail by an enemy fighter out of control. It fell over the target with one parachute seen to open.

2. Known Operational Losses (1):

a. A/C 395 (468th) overshot runway on return from the mission and is a total loss.

3. Missing Aircraft (3):

a. A/C 262 (444th) is known to have reached the China Coast with all 4 engines running and no visible signs of battle damage. It was not seen again after the formation crossed the Coast and continued inland.

b. A/C 359 (462nd) is known to have passed Tehsien (37°29'N - 116°19'E) with a formation and it is possible that it continued into friendly territory. As the formation approached the battle line, this plane radioed its formation leader that it was low on gasoline and might have to make a landing at an emergency field. The aircraft was not actually observed at the time the message was sent, but it is believed to have been in the formation. This may have been the B-29 that was reported to have crashed into a mountain at 36°07'N - 112°39'E.

c. A/C 389 (468th) is known to have reached a point approximately one hour and 15 to 30 minutes from its home base and was in radio contact with its flight leader. No indication of trouble was given. A signal was given to disperse and this plane began its normal 360-degree turn before penetrating the undercast. The flight leader picked up ice on the descent and returned to the top of the undercast but no further observation of A/C 389 was made and no radio messages were received.

B. Aircraft Damage

For details of battle and operational damage by aircraft, see Consolidated Mission Statistical Summary, Annex M, Table V.

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