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MISSION #21 HANKOW "ALBUMOSE 1"  
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# XX BOMBER COMMAND



## Tactical Mission Report

No. 21

DATE 18 DECEMBER 1944

GENERAL H.H. ARNOLD

COPY No. 1

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HEADQUARTERS  
XX BOMBER COMMAND  
APO 493

Field Orders No. 21

Mission No. 21

TARGET: DOCKS AND STORAGE AREA, HANKOW, CHINA

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Prepared by:

Intelligence Section  
XX Bomber Command

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HEADQUARTERS  
XX BOMBER COMMAND  
APC 493

4 January 1945

SUBJECT: Report of Operations, 18 December 1944

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

1. UNITS PARTICIPATING: Field Orders Number 21 of the XX Bomber Command directed each of the 4 Groups to dispatch on D-day all aircraft possible on a daylight mission against the docks and storage area at Hankow, China. 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. 21.

b. Targets Specified:

- (1) Primary Target: Docks and Storage Area, Hankow, China. (Objective Folder No. 83.8-A and 14th Air Force Target Charts Nos. 106, 107 or 108).
- (2) Secondary Target: Railroad Yards and Storage Area, Yochow, China (Objective Folder No. 83.8-B and 14th Air Force Target Chart No. 160).
- (3) Last Resort Target: Airfield Storage Area, Tangyang, China, (Objective Folder No. 83.8-C).

3. STRATEGY AND PLAN OF OPERATIONS:

a. Importance of Targets:

(1) Primary Target: Hankow, one of the major enemy military bases in China, is a focal control point for the flow of troops and supplies. The Yangtze River is one of the two supply routes into Hankow and during recent months an average of approximately 20,000 tons of shipping has been observed at the docks in

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the target area at any given time. Practically all supplies that enter Hankow are either stored or trans-shipped at the target area before being distributed either by small boats south on the Yangtze River through Tungting Lake and then up the Siang River or moved across the Yangtze to Wuchang, where supplies are loaded on freight cars for shipment south on the Wuchang - Hengyang Railroad, which has been reconstructed as far as Chuchow.

(2) Secondary Target: Yochow is an important enemy supply base on the Wuchang - Hengyang Railroad. Supplies move in and out of Yochow on this railroad and also by boat on Tungting Lake and the Yangtze and Siang Rivers. Some trans-shipment between boat and railroad occurs at Yochow and the railroad yards and adjacent storage area are active.

(3) Last Resort Target: The airdrome and the storage area at Tangyang are of importance to the enemy as an advanced base for aircraft operating in the Yangtze River area.

b. Details of Planning (See Annexes N and O):

(1) Operational Planning:

(a) This mission was planned as a coordinated effort by the XX Bomber Command and the Fourteenth Air Force in order to reduce Japanese offensive capabilities in China by destroying a main Japanese supply base. Hankow is the most important Japanese supply base in China. Therefore, it was desired to coordinate attacks by B-29's, B-24's, B-25's and P-51's against the Hankow dock and storage area and the Hankow and Wuchang Airfields.

(b) The mission was first planned as a daylight high-altitude precision raid providing for at least 83 B-29's over the target in order that the density of incendiaries would be such that there would be a possibility of destroying the entire waterfront warehouse area - a density of one 6-pound incendiary bomb to each 500 square feet of target area.

(c) Although the Hankow area is heavily defended, no fighter escort was to be provided for the B-29's. Instead, after the completion of the B-29 mission at approximately 1200 hours on D-day, it was prepared that B-24, B-25, and P-51 missions be directed against the Hankow and Wuchang Airfields in order to attack the Japanese fighters on the ground refueling after their attempts to intercept the B-29's.

(d) D-day was originally set for 15 December 1944, then changed to 19 December, but a change in the weather made it necessary to move the mission forward one day to 18 December. In addition, the original estimate of 60 aircraft available for the mission was increased to 100.

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(e) Although it had been decided that certain aircraft which had to undergo modification were to be withdrawn temporarily from combat missions, it was decided to use these unmodified aircraft on this mission. Furthermore, since these aircraft would not be needed in the forward area after the mission and since there were some XX Bomber Command gasoline stocks at Fourteenth Air Force fields, some aircraft were to be detached from each formation after bombs away, proceed to Chengkung and Luliang in the Kunming area for refueling, and then return to their India bases.

(f) The route was planned in such a way as to furnish 2 good assembly points, a perpendicular approach to the river front target, and an axis of attack along the river in order to provide the formation leaders good visual and radar check points.

(g) In compliance with a request from the Fourteenth Air Force on D-day Minus 1, take-off times were scheduled at times that would bring the aircraft over the target between 1045 and 1130 hours, China time.

(h) Since antiaircraft defenses at Hankow were not considered strong, bombing was to be done from 18-21,000 feet pressure altitude.

(i) The target was divided into 4 parts, each requiring different types of incendiaries. The times of striking these aiming points were scheduled based on a northerly wind, the south aiming point being scheduled first to prevent smoke from the first formation's bombs from obscuring the aiming points of later formations.

(j) Electrical release with intervalometer set at minimum train for M-47 bombs was specified as a result of past experience with salvoed bombs striking together and exploding shortly after release.

(2) Determination of Bomb Load (See detailed study in Annex O):

(a) Analysis of the target with respect to its vulnerability resulted in the decision to conduct an incendiary assault designed to neutralize the military installations in the target area while at the same time to minimize the incidental damage that might be inflicted upon those areas contiguous to the target and inhabited by the Chinese.

(b) Consideration of firebreaks, combustibility, area of roof coverage, structural analysis, and the striking force available led to the decision to divide the target into 4 distinct components, each of which was to be attacked by a specified force carrying an appropriate incendiary bomb load.

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(c) Bomb loads were as follows: Component A - M-76 500-pound incendiary bombs fused instantaneous nose and non-delay tail, bombs to be salvoed; Component B - M-76 500-pound incendiary bombs as in the foregoing and M-47 100-pound incendiary bombs fused instantaneous nose and non-delay tail, bombs to be released in train at minimum intervalometer setting; Component C - M-47 100-pound incendiary bombs as in the foregoing; and Component D - M-17 500-pound aimable clusters fused for cluster opening at 5000 feet, bombs to be salvoed.

(3) Bombing Data:

(a) Formations were to be composed so that all aircraft in each formation were to carry the same type of bomb. Insofar as was possible, bombing was to be done by 12-plane formations. Axis of attack was set at 292 degrees magnetic with pressure altitudes as follows: 40th - 19,000 feet; 444th - 21,000 feet; 462nd - 18,000 feet; and 468th - 20,000 feet.

(b) Aiming points were established as follows: Hankow - visual aiming points on Hankow mosaic; 40th - 025, 093 for M-47 bombs, 026, 065 for M-76; 444th - 021, 120 for M-17 bombs, 026, 065 for M-76; 462nd - 026, 065 for M-76 bombs; 468th - 026, 065 for M-47 bombs, 035, 029 for M-76. The radar aiming point for Hankow was the center of the strong signal from the city, 1500 feet from the west bank of the Yangtze River. For the secondary target, the visual aiming point was the center of the cluster of warehouses north of the railroad and the radar aiming point was the target area 2000 feet northeast of the west shore line of Tung-ting-hu. For the last resort target, the aiming point was the center of either storage area.

(4) Weight of Attack: Each Group was to dispatch all aircraft possible.

4. MOVEMENT TO THE FORWARD AREA: Of 156 aircraft on hand in the Groups, 55 failed to become airborne to the forward area for the mission as a result of the following reasons: 5 were undergoing acceptance check; 4 were in the depot; 3 were non-operational in the forward area; 3 were earmarked for photo reconnaissance; 36 were undergoing repairs; and 4 failed to become combat operational in time for the mission. Of the 101 aircraft airborne, 98 arrived at the forward area as follows: 40th - 17; 444th - 25; 462nd - 26; and 468th - 30. Four aircraft landed on D-day minus 4, 23 on D-day minus 2, and 71 on D-day minus 1. There were no losses on the movement forward.

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

a. Take-off:

(1) Times of take-off as originally planned were

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advanced by approximately 45 minutes so that aircraft were to take-off as follows: 40th - 172331Z; 444th - 172324Z; 462nd - 172318Z; and 468th - 172321Z.

(2) Take-off was accomplished as follows:

Group	<u>A/C in Fwd Area</u>	<u>A/C Airborne</u>	<u>First A/C off</u>	<u>Last A/C off</u>
40th	17	16	172339Z	180002Z
444th	25	25	180009Z	180057Z
462nd	26	23	180005Z	180044Z
468th	30	30	180008Z	180225Z
Total	98	94	172339Z	180225Z

(3) As a result of the last-minute decision to advance the times of take-off, only the 40th Group was able to take-off on the new schedule. In the 462nd Group, one aircraft returned to base shortly after taking off as a result of a loose oil cap but this aircraft took off again and bombed the last resort target. In the 468th Group, 27 aircraft were off by 180055Z but 3 others made late take-offs at 180136Z, 180157Z, and 180225Z.

(4) Overcast at 8-10,000 feet was present at all bases at take-off. Visibility was 2-4 miles in haze or light ground fog. At 2 bases winds were south 5 miles per hour and at the other 2 north 5 miles per hour.

b. Route Out:

(1) Route out was from base to the assembly point (Liangshan Airfield for the 40th and 444th Groups and Peishiyi Airfield for the 462nd and 468th Groups) to 29°14'N - 113°06'E to 29°54'N - 115°27'E to the initial point (the north tip of the island at 30°23'N - 115°04'E) to the target.

(2) Deviations from the planned route to the primary target were minor and only 9 of the 94 aircraft airborne failed to reach the primary target. Of these, 3 bombed the secondary target, 2 bombed the last resort target, 3 jettisoned their bombs before returning to base, and 1 returned to base with its bombs.

c. Primary Target:

(1) Of the 94 aircraft airborne, 84 aircraft bombed the primary target at Hankow. The first formation (13 aircraft) released 1652 M-47 incendiary bombs at 0308Z from an altitude of 19,100 feet on a heading of 291 degrees magnetic. This formation was followed by formations of 2 aircraft at 0309Z (39 M-76 incendiaries), 10 at 0320Z (325 M-17 incendiaries), 10 at 0333Z (281 M-17's), 5 at 0345Z (471 M-47's), 9 at 0347Z (263 M-76's), 10 at 0350Z (1383 M-47's), 4 at 0354Z (96 M-76's), and 9 at 0404Z (246

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M-76's). The last formation (13 aircraft), after one bombing run at 0400Z, released 396 M-76 incendiaries at 0408Z from an altitude of 18,000 feet on a heading of 240 degrees magnetic. During this interval of 60 minutes, the 84 aircraft dropped a total of 606 M-17 bombs, 3506 M-47 bombs and 1040 M-76 bombs on the primary target, a total incendiary weight of 1,022,739 pounds or 511.37 short tons.

(2) One aircraft over the primary target could not release its bomb load of 104 M-47 bombs as a result of a rack malfunction; bombs were later jettisoned. Eleven other aircraft over the primary target experienced difficulty in release and dropped only a portion of their bomb load. As a result, 47 incendiary bombs of various types were released on other targets, jettisoned, or returned to base.

(3) Bombing altitudes varied from 18,000 to 22,200 feet indicated and axes of attack from 240 to 300 degrees magnetic with 62 aircraft bombing on headings between 280 and 294 degrees magnetic. Indicated air speeds varied from 190 miles per hour to 206 miles per hour with 49 of the aircraft flying at 195 miles per hour.

(4) Weather conditions over the primary target were CAVU. However, smoke resulting from fires started by the first aircraft over the target made the location of aiming points difficult for several of the later formations. Although take-off times had been planned in such a way as to put the Groups with downwind aiming points over the target first, an error in transmission and receipt of the message resulted in one of the central aiming points being hit first.

d. Secondary Target:

(1) Aircraft 546 (468th) dropped 132 M-47 bombs on Yochow visually at 0246Z from 18,500 feet on a heading of 62 degrees and at an indicated air speed of 180 miles per hour. Observed results were fair with a fire being started in a building 2000 feet north of the target area.

(2) Aircraft 494 (468th) dropped 184 M-47 bombs on Yochow visually at 0331Z from 20,000 feet on a heading of 107 degrees and at an indicated air speed of 195 miles per hour. Observed results were poor. Three bombs hit short and the remainder hit 3000 feet over as a result of a rack malfunction.

(3) Aircraft 424 (468th) dropped 32 M-76 bombs on Yochow visually at 0407Z from 20,700 feet on a heading of 289 degrees and at an indicated air speed of 200 miles per hour. Observed results were fair - Bombs were seen to hit in an area between 3 large warehouses and the river bank.

e. Last Resort Target:

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(1) Aircraft 411 (468th) released 104 M-47 bombs on Tangyang visually at 0403Z from 20,800 feet on a heading of 119 degrees and at an indicated air speed of 200 miles per hour. Observed results were excellent. Bombs were seen to hit in the southwest corner of the storage area at the northwest end of the runway.

(2) Aircraft 461 (462nd) dropped 40 M-76 bombs on Tangyang visually at 0407Z from 20,500 feet on a heading of 120 degrees and at an indicated air speed of 193 miles per hour. Observed results were excellent.

(3) Aircraft 362 (462nd) which dropped 12 M-76 bombs on Hankow, also released 12 on Tangyang visually at 0433Z from 17,000 feet on a heading of 272 degrees and at an indicated air speed of 195 miles per hour. Results were unreported.

f. Target of Opportunity: Aircraft 354 (468th), which dropped 99 M-47 bombs on Hankow, also bombed a target of opportunity at Ichang. Five bombs were released visually with unreported results.

g. Route Back:

(1) Route back was flown direct from the target to the Chengtu area bases with the following deviations: one aircraft dropped a portion of its bombs on the primary target, proceeded to the last resort target but was unable to release there, and finally jettisoned; one aircraft dropped a portion of its bomb load on the primary target and then proceeded to the last resort target which it bombed; one aircraft over the primary target and unable to release any of its bomb load proceeded to the last resort target and dropped its bombs; and one aircraft dropped a portion of its bomb load on the primary target and bombed a target of opportunity with the remainder.

(2) In the 444th Group, 12 aircraft with unmodified engines were briefed to land at either Chengkung or Luliang and, after refueling, proceed to Indian bases. However, the orders for aircraft scheduled to land at Luliang were changed by air-ground communications while the aircraft were in flight and these aircraft returned to Kwanghan. Of the 3 scheduled to land at Chengkung only 1 actually landed there, the other 2 returning to Kwanghan as a result of minor mechanical difficulties. In the 462nd Group, 6 aircraft landed at Chengkung as briefed. Of these, 3 returned to their India base at Piardoba the same day and the other 3 returned on D-day plus 3.

(3) Overcast at the bases on return was generally broken at 10-12,000 feet with two-tenths cumulus at 6000 feet for one base. Visibility ranged from 7- 10 miles to unlimited. Winds varied from 3-5 miles per hour.

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

a. Meager to moderate and inaccurate to accurate heavy anti-aircraft fire was reported from 0308Z to 0410Z at altitudes varying from 18,000 to 21,000 feet. Two aircraft reported phosphorous bursts, 7 reported white, and all crews observed black bursts. Automatic weapons fire was also observed at 0308Z by 3 aircraft. This fire was reported as originating from gunboats on the river and as bursting (black and white) at altitudes from 5000 to 15,000 feet. The type of fire cannot definitely be determined although it is possible that the enemy used either a barrage or a poor continuously pointed type.

b. Heavy anti-aircraft fire was also encountered at Yochow (meager and generally inaccurate), in the vicinity of Shihhweiyao (meager and inaccurate), in the vicinity of Hanchwan (meager and accurate) and southeast of Ichang (ground flashes but no bursts).

c. One aircraft reported from 10 to 12 barrage balloons at 3-5000 feet on the east bank of the Yangtze River opposite the Hankow dock area at 0320Z. The observation was made from 21,000 feet.

d. Seven high-altitude balloons were reported at 0410Z in the vicinity of Hankow at 19,000 feet. These balloons were observed from an altitude of 18,000 feet and were from one-half to one mile from the observing planes. They were reported as having had tail fins similar to the conventional barrage balloon and as having been silver in color but small in size.

e. Based on intercepts obtained by RCM Observers, it is believed that the enemy had prior warning of the attack.

7. ENEMY AIR OPPOSITION (See Annex C):

a. Air opposition on this mission is rated as weak with 45 of the 84 aircraft bombing Hankow being intercepted by as estimated 28 - 34 enemy fighters that executed 70 single and 8 coordinated attacks for a total of 2 individual encounters, 29 per cent before bombs away, 4 per cent during bombs away, and 67 per cent after bombs away. Preliminary claims were 1 enemy aircraft destroyed, 3 probably destroyed, and 10 damaged. No enemy air opposition was encountered in either the secondary or last resort target areas.

b. Of the 82 encounters, 41 were by Tojos, 14 by Oscars, 13 by Tonys, and the remainder by Zokes, Hamps, Dinahs, and unidentified planes.

c. Frontal attacks predominated with 42 per cent originating from that quarter, 18 individual attacks (22 per cent) coming



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from 11 o'clock. The high approach was preferred by the attackers from all directions except the rear quarter where 5 of the 6 attacks were low.

d. Enemy fighters opened fire in 71 per cent of the encounters and B-29's in 88 per cent. In 16 cases (36%) the enemy opened fire at ranges of 1000 yards or greater and the B-29's opened fire at 1000 yards or greater in 24 cases (34%). Nine enemy fighters (21%) opened fire at 500 yards or less. The B-29's opened fire at 500 yards or less in 20 instances (28%).

e. Japanese pilots were generally aggressive but not skillful. Twenty-one attacks (26% of all encounters) were pressed to distances less than 100 yards.

f. Only 1 aerial bombing attack was reported. It was executed by 2 Tojos flying line astern in a coordinated attack from 11 o'clock. No damage was caused by this attack.

g. Six coordinated attacks, each employing 2 aircraft, were reported. On 3 occasions, the typical "Chow Line" attack was used. The others were high from 9, 10, and 11 o'clock.

8. WEATHER (See Annex D):

a. Weather was suitable for formation flying and excellent for daylight precision bombing. The haze layer, which extended to 16,000 feet over the target area, did not reduce visibility to such an extent as to interfere with bombing.

b. The haze layer extending over the entire route made pilotage difficult in some cases.

c. Some turbulence was encountered in passing through a deep inversion in the Chengtu area. Some pilots reported an increase of 14 degrees Centigrade from 8000 to 14,000 feet which was almost wholly substantiated by the Chengtu sounding.

d. Over-all, the weather encountered was essentially as forecast and the metro wind forecast was rated excellent by the navigators.

9. COMMUNICATIONS (See Annex E):

a. Communications in general were satisfactory. Once again the assigned frequencies proved to be highly satisfactory as a result of good weather and the relatively short distance involved.

b. A test message was transmitted from the Command Post to the Groups for relay to the aircraft. A time study of the handling of this message is contained in Annex 1 to Annex E.

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c. Only one request for D/F aid was made and a Class III bearing was given.

d. Air-to-air homing was used by one Group, two aircraft transmitting homing signals on different frequencies. Four aircraft homed on these signals at an average distance of 40 miles and at an extreme of 50 miles. Results are considered excellent.

e. A negligible amount of man-made interference was encountered on air-ground and air-to-air command frequencies.

10. RADAR (See Annex F):

a. All bombing on this mission was accomplished visually. Radar aided considerably, however, in directing the aircraft to the target as well as in navigation.

b. The obtaining of radar-scope pictures on this mission was difficult but a number of usable negatives were obtained and are of good enough quality for plotting.

c. Radar serviceability was average.

11. RCM (See Annex G):

a. RCM activities were confined to searching by 8 RCM -- equipped aircraft, each with 1 RCM Observer searching for early-warning radar sites and, within the target area, for radar fire-control equipment and fire-control communications.

b. An attempt was made to verify the location of radar sites previously reported at Hankow, Yochow, Anlu, and Shasi, but verification was made impossible as a result of the nature of the cuts.

c. Radar intercepts were made of the Yochow, Hanhow, and Shasi radar stations. No definite radar intercepts were made in the Anlu area. There were no intercepts with fire-control or fighter-control characteristics were made.

d. No unusual enemy activity was reported and no jamming was encountered.

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

a. The mission is considered as satisfactory from the gunnery aspect and the CSFC system. Of the 88 aircraft submitting specialists' interrogation reports, only 12 CSFC malfunctions were reported out of 440 turrets (2.73%) and only 13 50-caliber machine gun malfunctions out of 880 guns (1.48%).

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b. Rounds of ammunition expended numbered 22,504, of which 6744 rounds were expended in test firing and 15,760 in combat.

13. CAMERAS AND PHOTOGRAPHS (See Annex I): Cameras installed in airborne aircraft on this mission were as follows: 16 K-18, 29 K-20, and 24 K-22, a total of 69 cameras of all types (excluding radar cameras). Based on incomplete records 42 cameras took photographs of targets producing 283 usable negatives. Four cameras failed to obtain photographs for mechanical reasons and 12 for other reasons. The results on 11 K-20 cameras of the 462nd Group are not known.

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

a. There were no battle losses or operational losses resulting from this mission and no aircraft are missing.

b. Battle damage consisted of major damage inflicted upon one aircraft by enemy antiaircraft and minor damage upon 4 by enemy aircraft and 8 by enemy antiaircraft.

c. Operational damage consisted of one aircraft by our own guns and one for other reasons. Both instances were minor damage.

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

a. Of the 156 aircraft assigned to this Command, 72 failed to bomb the primary target. Of the 72, 60 aircraft were unable to accomplish the mission because of mechanical trouble as follows: 4 were in the depot, 3 were non-operational in the forward area, 36 were undergoing repairs in the rear area, 3 had to return to rear area bases for mechanical reasons after becoming airborne for the forward area, 4 failed to take-off on the mission, and 10 aircraft airborne on the mission failed to bomb the primary target for mechanical reasons.

b. There were 130 malfunctions of equipment in flight (excluding 11 malfunctions that were related to failure to bomb the assigned primary target) as follows: power plant and accessory section - 20 (engines running rough or hot - 9); propellers and governors - 17 (governors - 10, feathered propellers - 5); oil system - 25 (oil leaks - 21); fuel system - 12 (fuel transfer system - 6); electrical system - 21 (generators - 9); instruments - 32 (tachometers - 14); and miscellaneous - 3.

c. Bomb loads were limited by space limitations and not by gross weight. Furthermore, the relatively short distance flown permitted lower gas loads. As a result of these factors, the take-off gross weights were considerably below the maximum allowable despite the fact that the bomb load was a maximum load for the type and size of bombs carried.

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d. Over-all averages in fuel consumption were: average - 3540 gallons; maximum - 4200; minimum - 3100 (for an average of 6 hours and 42 minutes of flight at an average gross take-off weight of 124,500 pounds). Averages by Groups were as follows: 40th - 3700 (maximum - 4200; minimum - 3125); 444th - 3470 (maximum - 3950; minimum - 3100); 462nd - 3780 (maximum - 4200; minimum - 3310); and 468th - 3320 (maximum - 3800; minimum - 3100).

16. TARGET DAMAGE ASSESSMENT (SEE ANNEX L):

a. Primary Target:

(1) Assessment of damage was derived from strike photos and good quality post-attack reconnaissance obtained on 23 December 1944.

(2) For this attack the Hankow Dock and Storage Area was divided into 4 Components, 3 of which were practically equal in size (4000' x 2400') and a 4th approximately 1/3 as large. Estimated force requirements consisted of a 12-plane formation for Component A (southern area), three 12-plane formations for Component B (central area) and a 12-plane formation each for Components C and D (northern area).

(3) Bombing was accomplished by 10 formations varying in size from 2 to 13 aircraft over the target from 0308Z to 0408Z. Results obtained by the first 3 large formations were excellent. Fires resulting from the patterns laid down by these 3 formations (33 a/c, 139 tons M-17, 57 tons M-47A2) destroyed approximately 1/3 of Component C and virtually all of Component D. In addition several large areas outside of the Components were devastated.

(4) A 2 plane formation following closely behind the first formation dropped in its designated Component (B) but the small weight of incendiaries carried resulted in a localized fire only.

(5) Subsequent formations were seriously hampered by the heavy smoke arising from the fires in Components C and D. This smoke was driven over the southern regions of the target by a prevailing wind from the northwest which effectively screened the Aiming Points. Of the remaining 6 formations, totalling 49 aircraft, 1 dropped partially in Component A (objective was B Component), 1 dropped in a native hutment area northwest of Component B, 1 dropped in the Chinese Quarter of Hankow and the remaining dropped largely in open ground several miles to the northwest of the target area. Damage resulting in Component A was localized and bombs falling in the Chinese Section just north devastated several acres of a heavily built-up area.

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(6) In summary it may be said that only 33 of the 84 attacking aircraft accurately placed their bombs in the designated Components. Damage, however, was heavy and resulted in the virtual destruction of 40-50% of the target area. It is interesting to note that the 40-50% destruction was accomplished by only 38% of the total weight of incendiaries. The major factor contributing to the unsuccessful completion of the mission was the heavy smoke arising from the northern sector of the target area which, driven southwestward by the prevailing wind, effectively screened the southern regions from 6 formations. If it had been possible to attack the Components from south to north in sequence or had the time lag between formations been minimized, greater destruction would undoubtedly have occurred.

For the Commanding General:

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

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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 -- Information on Landings
- \* Prepared by Staff Navigator.  
\*\* Pages A-IV 1 and 2 prepared by Staff Bombardier.

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S E C R E T

I - INFORMATION ON TAKE-OFFS

Mission No. 21

18 December 1944

Group	First A/C Off	Last A/C Off	Elapsed Time	No. A/C Taking Off	Average Take-off Interval
40th	172339Z	180002Z	23 min.	16	92 sec.
444th	180009Z	180057Z	48 min.	25	120 sec.
462nd	180005Z	180044Z	39 min.	23	106 sec.
468th	180008Z	180055Z	47 min	27 - a	108 sec.
Over-all	172339Z	180057Z	78 min	91 - a	-

a. Does not include A/C 494, 424, and 411 that made late take-offs at 0136Z, 0157Z, and 0225Z respectively.

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II - DETAILS OF ROUTES

Mission No. 21

18 December 1944

A. Planned Routes

	40th	444th	462nd	468th
Base	Hsinching	Kwanghan	Kiunglai	Pengshan
Assembly point	Liangshan Airfield 30°42'N - 107°50'E		Peishiyi Airfield 29°30'N - 106°22'E	
Check point	29°14'N - 113°06'E			
Check point	29°54'N - 115°27'E			
Initial point	North tip of Island at 30°23'N - 115°04'E			
Target	Dock and Storage Area, Hankow, China			
Route back	Direct to bases			
Base	Hsinching	Kwanghan	Kiunglai	Pengshan

B. Deviations from Planned Route

1. 40th Group:

a. A/C 294 was forced to return to Hsinching a short time after take-off as a result of mechanical difficulties. All bombs were returned.

b. A/C 297 released 15 bombs on FT but was unable to release the balance due to rack malfunction. It then proceeded to LRT but malfunctions continued and bombs were jettisoned in 3 attempts in widely separated spots.

2. 444th Group:

a. A/C 376 flew briefed route to 29°25'N - 112°25'E at which point the aircraft developed engine trouble. It turned back at 0220Z. Bombs were dropped at 0230Z at 29°45'N - 111°54'E.

b. In the briefing, 12 A/C were told to land at Chengkung and Luliang for refueling before continuing to the rear area base at Dudhkaundi. However, while the aircraft were en route to the FT, all planes scheduled

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II - DETAILS OF ROUTES

Mission No. 21

18 December 1944

A. Planned Routes

	40th	444th	462nd	468th
Base	Hsinching	Kwanghan	Kiunglai	Pengshan
Assembly point	Liangshan Airfield 30°42'N - 107°50'E		Peishiyi Airfield 29°30'N - 106°22'E	
Check point	29°14'N - 113°06'E			
Check point	29°54'N - 115°27'E			
Initial point	North tip of Island at 30°23'N - 115°04'E			
Target	Dock and Storage Area, Hankow, China			
Route back	Direct to bases			
Base	Hsinching	Kwanghan	Kiunglai	Pengshan

B. Deviations from Planned Route

1. 40th Group:

a. A/C 294 was forced to return to Hsinching a short time after take-off as a result of mechanical difficulties. All bombs were returned.

b. A/C 297 released 15 bombs on PT but was unable to release the balance due to rack malfunction. It then proceeded to LRT but malfunctions continued and bombs were jettisoned in 3 attempts in widely separated spots.

2. 444th Group:

a. A/C 376 flew briefed route to 29°25'N - 112°25'E at which point the aircraft developed engine trouble. It turned back at 0220Z. Bombs were dropped at 0230Z at 29°45'N - 111°54'E.

b. In the briefing, 12 A/C were told to land at Chengkung and Luliang for refueling before continuing to the rear area base at Dudhlandi. However, while the aircraft were en route to the PT, all planes scheduled

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to land at Luliang were told via air-ground communications to land at Kwanghan. Of the aircraft scheduled to land at Chengkung, only A/C 492 flew the briefed route. The other 2 returned to Kwanghan as a result of minor mechanical difficulties.

3. 462nd Group;

a. A/C 461 took off from Kiunglai but returned immediately to obtain oil filler cap. It then took off again to the LRT, which it bombed. Route was as follows;

<u>Time</u>	<u>Place</u>	<u>Altitude</u>	<u>IAS</u>
180225Z	Kiunglai	0-16,000	200
180324Z	Liangshan	16,000	200
180357Z	30°37'N - 111°07'E	20,500	193
180407Z	30°51'N - 111°41'E	20,500	193

Route back was direct to Kiunglai.

b. Six aircraft dropped bombs on the PT and returned direct to Chengkung (as briefed), where they refueled and returned to the rear area base at Fiardoba.

c. A/C 362 dropped 12 bombs on the PT and then proceeded to the LRT, where it dropped 12 bombs that had hung up over the PT.

4. 468th Group;

a. A/C 546 with a feathered propeller flew from Peishiyi to **Yochow** (which it bombed) to Enshin (30°17'N - 109°30'E), where it landed. It returned direct to Pengshan later.

b. A/C 464 returned to Pengshan approximately 1 hour after take-off after having jettisoned its bombs as a result of mechanical difficulty.

c. A/C 409 could not release its bombs on the PT and flew a course of 278°M to the LRT but it could not bomb this target either. It then headed for Liangshan and then to Pengshan, jettisoning its bomb load on the way. This aircraft was accompanied all the way on the route back by A/C 445.

d. A/C 354 had 5 bombs hang up over the PT. It flew from there to Ichang where its bombs were dropped. The remainder of the course was as briefed.

e. A/C 429 blew a stack on its #2 engine and returned to Pengshan, jettisoning its bombs on the way.

f. A/C 494 and 424 bombed the ST at Yochow.

g. A/C 411 bombed the LRT at Tangyang.

A-II-2

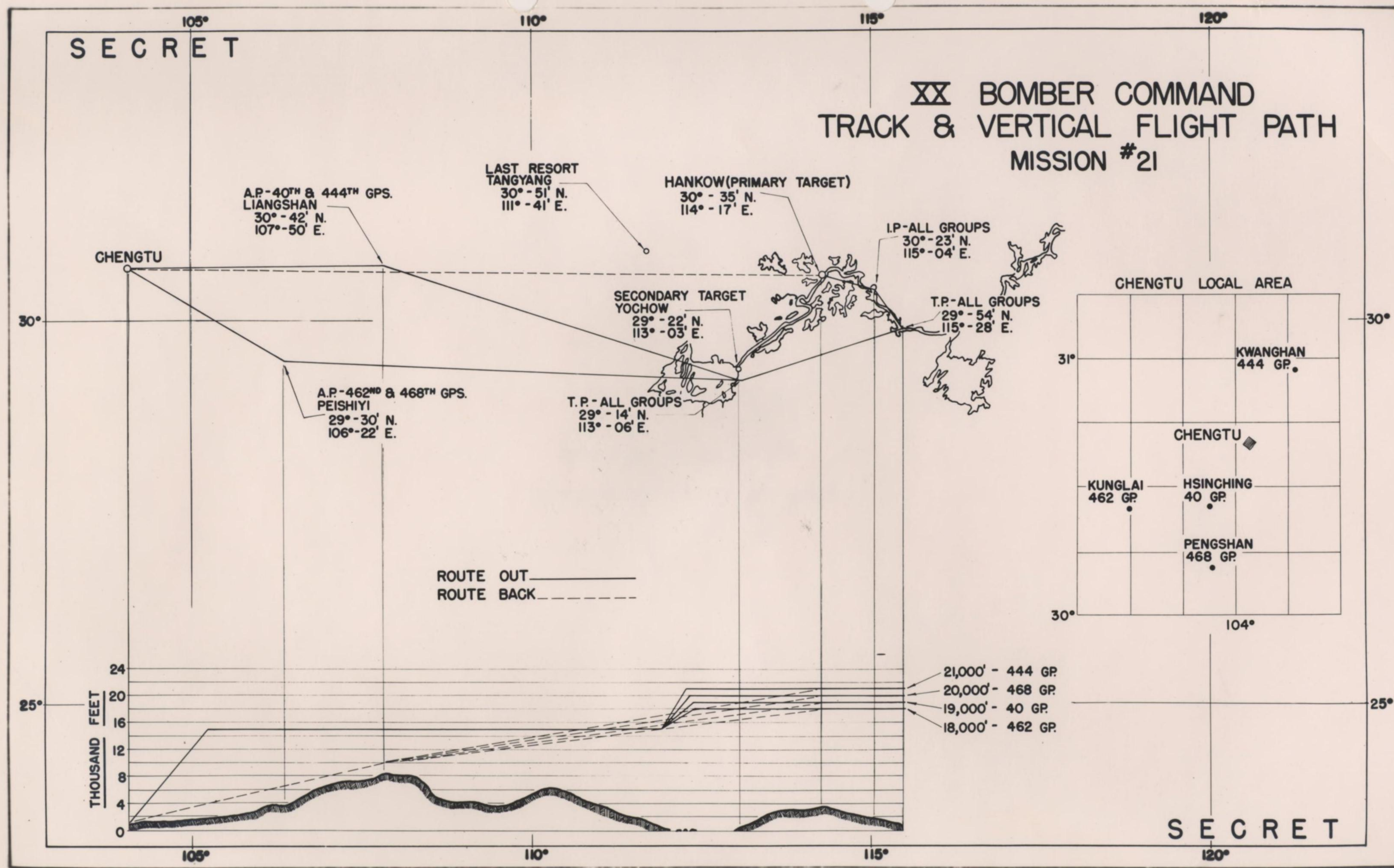
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HEADQUARTERS  
XX BOMBER COMMAND  
APO 493

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By Auth: CG, XX BC  
Date 28 Dec 44  
Initials C. Hill

CONSOLIDATED  
SPECIALIST MISSION REPORT OF  
STAFF BOMBARDIER

Date Prepared: 27 December 1944

Field Order No.: 21  
Date of Mission: 18 Dec 44

1. Weather conditions over the primary target were C.W.U, however smoke resulting from fires started by the first formation over made locating their aiming points difficult for several succeeding formations. Although take-off times were planned to put the Groups with downwind aiming points over the target first, an error in transmission and receipt of the message resulted in one of the central aiming points being hit first.

2. M47.2 incendiary bombs were carried clustered six to a five hundred pound station by using cluster adapters developed by this Command. No difficulty was encountered due to the cluster arrangement, however considerable wobbling of bombs after release was reported.

3. Three cases of arming wires breaking were reported by airplanes carrying 17 Incendiary Clusters. XX Bomber Command Ordnance Technical Letter No. 30, dated 27 November 1944, sets forth steps to be taken to prevent this occurrence.

4. Malfunctions of bombing equipment were as follows:

a. 40th Group.

- (1) Bombs would not release electrically from airplane #3420 and were immediately salvoed over the target. Cause - Unknown. Equipment ground checked O.K.
- (2) Nine bombs failed to release electrically from airplane #6297. Repeated salvo attempts released bombs in groups of 2, 3, and 3. One bomb had to be released manually. Cause - (1) Improper tension on select-salvo cable system. (2) Shackle on one bomb was installed backwards.

b. 444th Group.

- (1) Three bombs on top station center racks of airplane #378 failed to release in salvo. Cause - Control rod twisted.
- (2) Three bombs failed to release by salvo from airplane #422 and were later dropped by toggle switch. Cause - Bomb control bell crank caught on stiffener of cat walk when bomb release bar was moved upward.
- (3) One bomb failed to release from airplane #472. Cause - Ears on release not tripping shackle.
- (4) Front doors would not close on airplane #732. Cause - Burned out bomb bay door motor.

c. 462nd Group.

- (1) Twenty bombs failed to release in salvo from airplane #362. Eight were dropped with the emergency wheel and the remainder on the last resort target electrically. Cause - Unknown.
- (2) One bomb failed to release from airplane #285. Cause - Unknown.

-1-

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- (3) Right door on rear bomb bay of airplane #316 wouldn't close.  
Cause - Emergency wheel was not tightened back far enough.  
(Bombardier error).

d. 468th Group.

- (1) Electrical release failed in airplanes #6265 and 6407. Cause - Unknown.
- (2) Toggle switch inoperative in #3445. Bombs were dropped by automatic release switch in the bombsight. Cause - Unknown.
- (3) Thirty stations failed to release electrically in airplane #4494, and were salvaged later. Cause - Unknown.
- (4) Four bombs failed to release from airplane #4737. Cause - Loose cannon plug in bomb rack.
- (5) Three stations failed to release electrically. Cause - Unknown.
- (6) One station in airplane #3354 failed to release electrically. Cause - Defective release unit.
- (7) Three bombs failed to release from airplane #3355. Cause - Unknown.



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IV - BOMBING DATA (continued)

Mission No. 21

18 December 1944

A. Times of Bomb Release at Primary Target

Z time	40th	44th	462nd	468th	Total
0308	11	-	-	-	11
0309	4	-	-	-	4
0320	-	10	-	-	10
0338	-	10	-	-	10
0345	-	-	-	4	4
0347	-	-	9	-	9
0350	-	-	-	10	10
0354	-	4	-	-	4
0404	-	-	-	9	9
0408	-	-	13	-	13
Total	15	24	22	23	84

B. Bombing Altitudes at Primary Target

Altitude (feet)	40th	44th	462nd	468th	Total
18,000 - 18,999	7	-	21	-	28
19,000 - 19,999	8	-	1	2	11
20,000 - 20,999	-	2	-	8	10
21,000 - 21,999	-	22	-	11	33
22,000 - 22,999	-	-	-	2	2
Total	15	24	22	23	84
Briefed altitude (indicated)	19,000	21,000	18,000	20,000	

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C. Axes of Attack at Primary Target

Degrees	40th	444th	462nd	468th	Total
240	-	-	13	-	13
270 - 279	1	4	-	1	6
280 - 284	3	3	-	5	11
285 - 289	2	15	9	6	32
290 - 294	9	2	-	8	19
295 - 300	-	-	-	2	2
Unreported	-	-	-	1	1
Total	15	24	22	23	84

Note: Briefed axis of attack was 292° Magnetic.

D. Indicated Air Speeds at Primary Target

mph	40th	444th	462nd	468th	Total
190	1	-	2	4	7
192	-	1	-	1	2
193	1	-	1	-	2
194	-	1	-	-	1
195	7	14	12	16	49
196	-	1	-	-	1
197	2	2	-	-	4
198	2	1	-	1	4
200	1	3	4	1	9
201	1	-	-	-	1
203	-	1	1	-	2
205	-	-	1	-	1
206	-	-	1	-	1
Total	15	24	22	23	84

A-IV-4

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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	IAS (mph)
			M17	M47	M76					
462nd	461	Tangyang	-	-	40	visual	0407Z	20,500	120°	193
	362*	Tangyang	-	-	12	visual	0432Z	17,000	272°	195
468th	546	Yochow	-	132	-	visual	0246Z	18,500	62°	180
	354**	Ichang	-	5	-	visual	***	***	***	***
	494	Yochow	-	184	-	visual	0331Z	20,000	107°	195
	424	Yochow	-	-	32	visual	0407Z	20,700	289°	200
	411	Tangyang	-	104	-	visual	0403Z	20,800	119°	200

\* A/C 362 also dropped 12 M-76 bombs on FT.

\*\* A/C 354 also dropped 99 M-47 bombs on FT.

\*\*\* Not reported.

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V - BOMB LOADING

Mission No. 21

18 December 1944

A. M-17 Incendiary Clusters\*

No. bombs	447th		Lbs. per A/C **
	A/C	M-17	
23	1	23	10,557
24	4	96	11,016
26	1	26	11,934
27	6	162	12,393
28	1	28	12,852
40	8	320	18,360
Total	21	655	14,316

\* Fused to burst at 5000 feet.

\*\* Actual weight - 459 pounds.

B. M-47 Incendiary Bombs\*

No. bombs	40th		468th		Total		Lbs. per A/C **
	A/C	M-47	A/C	M-47	A/C	M-47	
100	1	100	-	-	1	100	6910
101	-	-	1	101	1	101	6979
104	-	-	5	520	5	520	7186
106	-	-	1	106	1	106	7325
112	1	112	-	-	1	112	7739
128	7	896	-	-	7	896	8845
132	1	132	7	924	8	1056	9121
136	2	272	1	136	3	408	9398
140	1	140	-	-	1	140	9674
182	-	-	1	182	1	182	12576
184	-	-	3	552	3	552	12714
Total	13	1652	19	2521	32	4173	9011

\* Fused instantaneous nose and non-delay tail.

\*\* Actual weight - 69.1 pounds.

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By SG NARA Date 11/8/05



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C. M-76 Incendiary Bombs\*

No. bombs	40th		44th		462nd		468th		Total		Lbs. per A/C **
	A/C	M-76	A/C	M-76	A/C	M-76	A/C	M-76	A/C	M-76	
20	-	-	-	-	4	80	1	20	5	100	9660
24	3	72	4	96	4	96	2	48	13	312	11592
27	-	-	-	-	1	27	1	27	2	54	13041
28	-	-	-	-	2	56	1	28	3	84	13524
30	-	-	-	-	1	30	-	-	1	30	14490
31	-	-	-	-	-	-	1	31	1	31	14973
32	-	-	-	-	2	64	5	160	7	224	15456
40	-	-	-	-	9	360	-	-	9	360	19320
Total	3	72	4	96	23	713	11	314	41	1195	14078

\* Fused instantaneous nose and non-delay tail.

\*\* Actual weight - 483 pounds.

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S E C R E T



S E C R E T

VI - DISPOSITION OF BOMBS

Mission No. 21

18 December 1944

	40th				44th			
	A/C	M-47	A/C	M-76	A/C	M-17	A/C	M-76
All targets	13	1652	2	39	20	606	4	96
Primary	13	1652	2	39	20	606	4	96
Secondary	-	-	-	-	-	-	-	-
Last Resort	-	-	-	-	-	-	-	-
Opportunity	-	-	-	-	-	-	-	-
Jettisoned	-	-	-	9-a	1	49-b	-	-
Brought back	-	-	1	24	-	-	-	-
Total	13	1652	3	72	21	655	4	96

- a. A/C 297 dropped 15 bombs on PT and jettisoned 9.
- b. A/C 378 dropped 37 bombs on PT and jettisoned 3.
- A/C 376 jettisoned 40 bombs.
- A/C 422 dropped 24 bombs on PT and jettisoned 3.
- A/C 472 dropped 37 bombs on PT and jettisoned 3.

	462nd		468th			
	A/C	M-76	A/C	M-47	A/C	M-76
All targets	23	711	17	2279	10	278
Primary	22	659	14	1854	9	246
Secondary	-	-	2	316	1	32
Last Resort	1	52-a	1	104	-	-
Opportunity	-	-	-	5-c	-	-
Jettisoned	-	-	2	236	1	32
Brought back	-	2-b	-	6-d	-	4-e
Total	23	713	19	2521	11	314

- a. A/C 461 dropped 40 bombs on LRT.
- A/C 362 dropped 12 bombs on PT and 12 on LRT.
- b. A/C 285 dropped 19 bombs on PT and brought back 1.
- A/C 711 dropped 29 bombs on PT and brought back 1.
- c. A/C 354 dropped 99 bombs on PT and 5 on target of opportunity.
- d. A/C 407 dropped 103 bombs on PT and brought back 3.
- A/C 355 dropped 98 bombs on PT and brought back 3.
- e. A/C 737 dropped 24 bombs on PT and brought back 4.

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S E C R E T



S E C R E T

	All Groups						Total lbs.*	Total tons
	A/C	M-17	A/C	M-17	A/C	M-76		
All targets	20	606	30	3931	39	1124	1,092,679	546.34
Primary	20	606	27	3506	37	1040	1,022,739	511.37
Secondary	-	-	2	316	1	32	37,292	18.65
Last Resort	-	-	1	104	1	52	32,302	16.15
Opportunity	-	-	-	5	-	-	346	.17
Jettisoned	1	49	2	236	1	41	58,601	29.30
Brought back	-	-	-	6	1	30	14,904	7.45
Total	21	655	32	4173	41	1195	1,166,184	583.09

\* Weights: M-17 - 459#;  
M-17 - 69.1#;  
M-76 - 483#.

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By SG NARA Date 11/8/05



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VII - FORMATIONS FLOWN

Mission No. 21

18 December 1944

A. Formation Required

Aircraft were to be flown individually to the respective assembly points (Liangshan Airfield - 40th and 444th; Peishiyi Airfield - 462nd and 468th), where, insofar as possible, 12-plane formations were to be formed. Formations were to be so composed that all aircraft in each formation were to carry the same type of bomb load.

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 reported by 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;

W-579  
W-466 W-738  
W-420 W-859 W-620  
W-269 W-233 W-729 W-404 W-752 W-541  
W-348

Time: 0308Z  
Altitude: 19,100' I  
Heading: 291° M  
No. A/C in formation - 13  
Bombs dropped by this formation - 1652 (M-47)

W-319  
W-297  
Time: 0309Z  
Altitude: 19,000' I  
Heading: 270° M  
No. A/C in formation: 2  
Bombs dropped by this formation - 39 (M-76)

X-538  
X-464 X-451  
X-492 X-524  
X-202 X-292 X-485 X-324  
X-378

Time: 0320Z  
Altitude: 21,000' I  
Heading: 285° M  
No. of A/C in formation - 10  
No. bombs dropped by this formation - 325 (M-17)

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S E C R E T

X-122  
X-399 X-732 X-472 X-731  
X-584 X-462 X-857 X-375 X-724

Time: 0338Z  
Altitude: 21,000'I  
Heading: 286°M  
No. of A/C in formation: 10  
No. bombs dropped by this formation 281 (M-17)

Z-227  
Z-272 Z-407 Z-445  
Z-409\*

Time: 0345Z  
Altitude: 21,300'I  
Heading: 279°M  
No. A/C in formation: 5  
No. bombs dropped by this formation - 471 (M-47)

\* A/C 409 later jettisoned its bombs after bombs hung up over the primary target.

Y-448  
Y-506 Y-479  
Y-362 Y-581  
Y-232 Y-273 Y-311 Y-472

Time: 0347Z  
Altitude: 18,000'I  
Heading: 285°M  
No. A/C in formation: 9  
No. bombs dropped by this formation - 263 (M-76)

Z-525  
Z-704 Z-354  
Z-469 Z-265 Z-487  
Z-208 Z-460 Z-486 Z-355

Time: 0350Z  
Altitude: 20,500'I  
Heading: 290°M  
No. A/C in formation: 10  
No. bombs dropped by this formation: 1383 (M-47)

X-352  
X-340 X-423  
X-341

Time: 0354Z  
Altitude: 21000'I  
Heading: 278°M  
No. of A/C in formation: 4  
No. bombs dropped by this formation: 96 (M-76)

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Z-715

Z-691

Z-284

Z-442

Z-542

Z-397

Z-454

Z-737

Z-417

Time: 0404Z

Altitude: 21,300' I

Heading: 294° M

No. A/C in formation: 9

No. bombs dropped by this formation - 246 (M-76)

Y-457

Y-463

Y-393

Y-285

Y-316

Y-287

Y-711

Y-505

Y-312

Y-456

Y-830

Y-386

Y-475

Time: 0408Z

Altitude: 18,000' I

Heading: 240° M

No. A/C in formation - 13

No. bombs dropped by this formation - 396 (M-76)

A-VII-3

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By SF NARA Date 11/8/05



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Auth: CG XX BC

Initials: \_\_\_\_\_

Date: 25 Dec 44

HEADQUARTERS  
XX BOMBER COMMAND  
APO 493

CONSOLIDATED  
SPECIALIST MISSION REPORT  
OF XX BOMBER COMMAND  
NAVIGATION OFFICER

Date Prepared: 25 December 1944

Field Order No. 21.

Date of Mission: 18 De

1. Navigation on this mission presented a simple problem to the Navigators with radio bearings being used extensively for on course checks. Cooperation between radar operator and navigator was necessary, and employed with gratifying results.

a. Average Navigation times out and back:

	<u>NAV. TIME OUT</u>	<u>NAV. TIME BACK</u>
40th	3h 16m	3h 10m
444th	2h 54m	3h 02m
462nd	3h 25m	3h 15m
468th	3h 11m	3h 21m

b. Forecast winds were excellent. Computed wind and data at the target was as follows:

	<u>ALTITUDE</u>	<u>WIND</u>
40th	19000	275° 65k
444th	21000	270° 60k
462nd	18000	265° 59k
468th	18000	265° 60k

c. The following statistical information on navigation aids is presented:

	<u>CEL</u> <u>LOP'S</u>	<u>RADIO</u> <u>FIXES</u>	<u>QDM'S</u>
40th	19	23	0
444th	20	16	1
462nd	5	20	5
468th	18	10	0

2. Comments by Groups. None.

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S E C R E T

IX - INFORMATION ON LANDINGS

Mission No. 21

18 December 1944

A. Landed at XX Bomber Command Bases;

1. A/C bombing primary target;

	<u>40th</u>	<u>444th</u>	<u>462nd</u>	<u>468th</u>	<u>Overall</u>
First down	0625Z	0632Z	0658Z	0645Z	0625Z
Last down	0641Z	0723Z	0739Z	0739Z	0739Z

2. A/C failing to bomb primary target;

a. 40th Group;

(1) A/C 294 - 0142Z - brought bombs back.

b. 444th Group;

(1) A/C 376 - 0509Z - jettisoned bombs.

c. 462nd Group;

(1) A/C 461 - 0632Z - bombed LRT.

d. 468th Group;

(1) A/C 546 - 0852Z - bombed ST.  
(2) A/C 464 - 0119Z - jettisoned bombs.  
(3) A/C 409 - 0700Z - jettisoned bombs.  
(4) A/C 429 - 0619Z - jettisoned bombs.  
(5) A/C 494 - 0627Z - bombed ST.  
(6) A/C 424 - 0712Z - bombed ST.  
(7) A/C 421 - 0630Z - bombed LRT.

B. Landed At Chengkung as Briefed;

	<u>Landed Chengkung</u>	<u>Took-off Chengkung</u>	<u>Landed Rear Area Base</u>
<u>1. 444th Group;</u>			
a. A/C 492	180756Z	-	181528Z
<u>2. 462nd Group;</u>			
a. A/C 312	180858Z	181352Z	181931Z
b. A/C 273	180745Z	210230Z	210750Z
c. A/C 262	180814Z	181051Z	181609Z
d. A/C 330	180915Z	210207Z	210701Z
e. A/C 285	180903Z	181227Z	181750Z
f. A/C 287	180852Z	210218Z	210729Z

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S E C R E T

ANNEX

B

ENEMY ANTI-AIRCRAFT

\* \* \* \* \*  
\* Prepared by: \*  
\* Flak Officer \*  
\* XX Bomber Command \*  
\* \* \* \* \*

S E C R E T



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 \*  
\*                      \*  
\*Date            Initials            \*  
\* \* \* \* \*

28 December 1944

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

ANTI-AIRCRAFT OPPOSITION

MISSION NUMBER 21, (DAYLIGHT), 18 DECEMBER 1944

Primary Target - HANKOW, Secondary Target - YOCHOW  
Target of Last Resort - TANGYANG

A. ANTI-AIRCRAFT FIRE ENCOUNTERED

1. HANKOW (30°35'N - 114°17'E)

Meager to moderate and inaccurate to accurate heavy anti-aircraft fire was reported for 85 percent (83 out of 98) of the aircraft-runs over the area. Fire was reported from 0308Z to 0410Z at altitudes varying from 18,000 to 21,000 feet under CAVU and haze conditions. Two aircraft reported phosphorous anti-aircraft bursts, seven reported white, and all crews observed black heavy anti-aircraft fire.

Automatic weapons fire was also observed at 0308Z by three aircraft. It was reported as originating from gunboats on the river and as bursting at altitudes varying from 5,000 to 15,000 feet. The colors of bursts were reported as both black and white.

Bombing was accomplished by ten formations generally consisting of from nine to thirteen aircraft as follows:

<u>Formation</u>	<u>Aircraft</u>	<u>BRT Time</u>	<u>Heading</u>	<u>Altitude</u>
1	13	0308Z	291°M	18,600 - 19,300 Ft.
2	2	0309Z	270°M	19,000 Ft.
3	10	0320Z	285°M	21,000 Ft.
4	10	0338Z	286°M	21,000 Ft.
5	5	0345Z	279°M	20,000 - 21,000 Ft.
6	9	0347Z	285°M	18,000 - 18,900 Ft.
7	10	0350Z	290°M	20,000 Ft.
8	4	0354Z	278°M	21,000 Ft.
9	9	0404Z	294°M	20,000 Ft.
10*	13	0408Z	240°M	18,000 Ft.

\*Two runs were made by Formation #10, at 0400Z and at 0408Z.

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 . . . . . 7 ( 9 percent)	Intense . . . . . 0 ( 0 percent)
Rocked . . . . . 5 ( 6 percent)	Moderate . . . . . 29 (35 percent)
Within 150' . . . . 25 (30 percent)	Meager . . . . . 54 (65 percent)
Outside 150' . . . 46 (55 percent)	

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Reports of Deviations

Above . 41 (28 percent) Ahead . . 41 (41 percent) Left . . . 39 (38 percent)  
Level . 66 (44 percent) Abreast . 24 (24 percent) In Line . . 23 (22 percent)  
Below . 41 (28 percent) Behind . . 35 (35 percent) Right . . . 41 (40 percent)

The type of fire could not be definitely determined although it is possible that the enemy used either Barrage or a poor Continuously Pointed type. The number of bursts observed at any one instant varied from three to five while the total observed in the area varied from 25 to 50.

Several enemy aircraft were reported on the same course and altitude but there was no evidence of any change in the accuracy or deviations of fire at those times as compared to formations reporting no "shadow" or "thistle" aircraft.

Aircraft #316 of the 462nd Group reported phosphorous antiaircraft bursts at 0408Z (Formation #10). Two ordinary black flak bursts were first observed followed by two phosphorous bursts, then two normal flak bursts and so on. There was a large red flash as the shell bursts followed by white streamers projected in all directions.

Aircraft #456 of the same Group also reported possible phosphorous AA bursts 200 feet below the aircraft at 0408Z (Formation #10). Bursts were accompanied by white streamers and no enemy aircraft were observed which could have initiated these bursts.

The 40th Group also reported large white antiaircraft bursts, bursting at the correct altitude and compared "in size to a B-29!" No mention, however, was made of its resembling phosphorous AA.

2. YOCHOW (29°22'N - 113°04'E);

Twenty-eight aircraft encountered meager and generally inaccurate black and some white heavy antiaircraft fire from 0205Z to 0407Z at altitudes varying from 17,000 to 21,000 feet under CAWU conditions. Fire is believed to have been of the Barrage type and no enemy aircraft were reported on the same course and altitude.

Three of the aircraft encountering HAA fire bombed YOCHOW, while the remainder strayed within range of the HAA defense at that location. The flight plan specified a course passing approximately half-way between YOCHOW and SIMTSLANG in a eastward direction enroute to the IP and HANKOW.

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;

Reports of Accuracy

Rocked . . . . 1 ( 4 percent)  
Within 150' . . 1 ( 4 percent)  
Outside 150' . 26 (92 percent)

Reports of Intensity

Intense . . . . 0 ( 0 percent)  
Moderate . . . . 2 ( 7 percent)  
Meager . . . . . 26 (93 percent)

Reports of Deviations

Above . 2 ( 6 percent) Ahead . . 3 (15 percent) Left . . . 15 (68 percent)  
Level . 13 (39 percent) Abreast . 3 (15 percent) In Line . . 2 ( 9 percent)  
Below . 18 (55 percent) Behind . . 14 (70 percent) Right . . . 5 (23 percent)

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3. Vicinity of SHIHWEIYAO (30°14'N - 115°04'E)

Six aircraft of a formation of nine reported meager and inaccurate black and some white heavy antiaircraft fire at 0346Z at an altitude of 20,000 feet under CAVU conditions. Bursts were level or below, generally abreast, and to the left. It is believed that Continuously Pointed fire was used and no enemy aircraft were observed on the same course and altitude.

4. Vicinity of HANCHWAN (30°35'N - 113°48'E)

Meager and accurate (bursts were within 150 feet and the aircraft was rocked) black heavy antiaircraft fire was encountered by one plane at 0356Z at an altitude of 20,000 feet under CAVU conditions. Fire is believed to have been Barrage and no enemy aircraft were observed on the same course and altitude.

5. Southeast of ICHANG (30°42'N - 111°18'E)

One aircraft observed ground flashes southeast of ICHANG at 0502Z from an altitude of 17,000 feet, but no bursts were seen.

B. BARRAGE BALLOONS

One aircraft of the 444th Group reported from 10 to 12 barrage balloons flying at an altitude of from 3,000 feet to 5,000 feet on the east bank of the YANGTZE River opposite the HANKOW Dock Area at 0320Z. The observation was made from 21,000 feet.

C. HIGH-ALTITUDE BALLOONS

Seven high-altitude balloons were reported at 0410Z by Formation #10 of the 462nd Group in the vicinity of HANKOW flying at approximately 19,000 feet. They were observed from an altitude of 18,000 feet and were from 1/2 to one mile distant from the aircraft. The balloons were reported as having tail fins similar to the conventional barrage balloon and were silver in color but very small.

D. GROUND-TO-AIR ROCKETS AND SMOKESCREENS

None reported.

E. BLACKOUT

None - daylight mission.

F. DAMAGE FROM HEAVY ANTI-AIRCRAFT FIRE

Eight aircraft sustained minor damage from heavy antiaircraft fire while one aircraft (#6399 of the 444th Group) received major damage as follows:

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<u>Group</u>	<u>A/C</u>	<u>Location</u>	<u>Time</u>	<u>Altitude</u>	<u>Heading</u>	<u>Extent</u>
40th	63404	HANKOW	0308Z	19,000'	291°M	Damage to leading edge and front spar of right outboard wing panel.
444th	24584	HANKOW	0338Z	21,000'	286°M	Damage to radar set.
444th	63375	HANKOW	0338Z	21,000'	286°M	Damage to vertical stabilizer.
462nd	93830	HANKOW	0400Z	18,500'	240°M	Damage to leading edge of wing between #3 and #4 engines.
468th	24487	HANKOW	0350Z	20,500'	290°M	Damage to #1 engine.
468th	65227	HANKOW	0345Z	21,300'	279°M	Damage to outer skin of radar compartment
468th	65208	HANKOW	0350Z	20,500'	290°M	Damage to fuselage
468th	6265	HANKOW	0350Z	20,500'	290°M	Damage to leading edge of wing.
444th	6399	HANKOW	0338Z	21,000'	286°M	Major damage to fuselage to the left and rear of pilot.

G. WARNING NETS

It is believed that the enemy had prior warning of the attack as our aircraft were tracked by enemy early warning radar from 109 30'E to HANKOW and on the return to 109 40'E (based on intercepts obtained by ECM Observers).

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

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ANNEX

C

ENEMY AIR OPPOSITION

\* \* \* \* \*  
\* Prepared by: \*  
\* Operational Intelligence Unit \*  
\* XX Bomber Command \*  
\* \* \* \* \*

S E C R E T



S E C R E T

I. JAPANESE FIGHTER TACTICS - MISSION NO. 21

TARGET: Hankow, China.

TIME: Day Mission.

DATE: 18 December 1944.

1. General

a. Weak enemy fighter opposition was encountered by 45 of the 84 B-29's which bombed at Hankow. Four B-29's sustained minor damage, and our preliminary claims against enemy aircraft were 1 destroyed, 3 probably destroyed and 10 damaged. No enemy air opposition was encountered in either the secondary or the last resort target areas.

b. Our aircraft were intercepted by an estimated 28 to 34 enemy fighters which executed 70 single and 6 coordinated attacks, constituting a total of 82 individual encounters. The number of attacks waged by each type of enemy aircraft were as follows: 41 by TOJO, 14 by OSCAR, 13 by TONY, 6 by unidentified S/E fighters, 3 by ZEKE 32 (HAMP), 3 by ZEKE, 1 by DINAH, and 1 by an unidentified fighter. The estimated number of each type of attacking enemy fighters was 12-15 TOJOS, 4-6 TONYs, 4-6 OSCARS, 3 ZEKES, 2-4 unidentified S/E fighters, 2 or 3 ZEKE 32's, 1 DINAH, and 1 unidentified enemy aircraft.

c. All encounters occurred within the target area during a 68 minute period (0310Z to 0418Z) at altitudes from 17,000 to 21,000 feet. Twenty attacks (24%) were made while our planes were approaching the target, 28 (34%) at the target and 34 (42%) while leaving the target. Twenty four attacks (29%) were made before bombs away, 3 (4%) during bombs away, and 55 (67%) after bombs away.

d. Approximately 8 NICKS were sighted airborne in the target area but none of them attacked. Several OSCARS were seen performing aerobatics. About 40 to 50 enemy fighters which did not participate in the interception were also sighted in the vicinity of Hankow. The majority were reported as unidentified single engine aircraft.

2. Direction and Level of Approach

a. Frontal attacks predominated with 42 per cent of the encounters coming from this quarter. Side attacks were divided almost evenly with 28 per cent on the right and 23 per cent on the left. Only 7 per cent of the attacks originated from the rear quarter. Eighteen individual attacks (22%) came from the 11 o'clock direction alone. A greater number than from any other single direction.

b. The high approach was preferred by the attackers from all directions except the rear quarter where 5 of the 6 attacks were low. Frontal, right and left quarter attacks were high in the majority of encounters from these quarters, with no high attacks from the rear quarter.

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Forty-six attacks, or 56 per cent of all encounters came from high positions.

c. The preference of Japanese pilots for the high approach and especially the high frontal approach conforms with the direction and level of attack during several previous missions. Originating the majority of the rear quarter attacks with low approaches is also consistent with previous Japanese tactics. The percentage of attacks from the various directions on this mission is approximately the same as on Mission No. 19. Details of direction and level of approach are shown in Tables No. 1 and No. 2 and diagrammatically on the following page.

Table No. 1 - 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	13	4	2	10	2	1	0	0	0	0	8	6	46(56%)
Level	4	1	1	2	2	0	1	0	0	0	2	1	14(17%)
Low	1	3	5	4	1	1	1	3	1	1	0	1	22(27%)
Total	18	8	8	16	5	2	2	3	1	1	10	8	82(100%)
	34(42%)			23(28%)			6(7%)			19(23%)			

Table No. 2 - Level of Approach

Level of Approach	Front	Right Side	Rear	Left Side
High	19 (56%)	13 (57%)	0	14 (74%)
Level	5 (18%)	4 (17%)	1 (17%)	3 (16%)
Low	9 (26%)	6 (26%)	5 (83%)	2 (10%)
Total	34 (100%)	23 (100%)	6 (100%)	19 (100%)

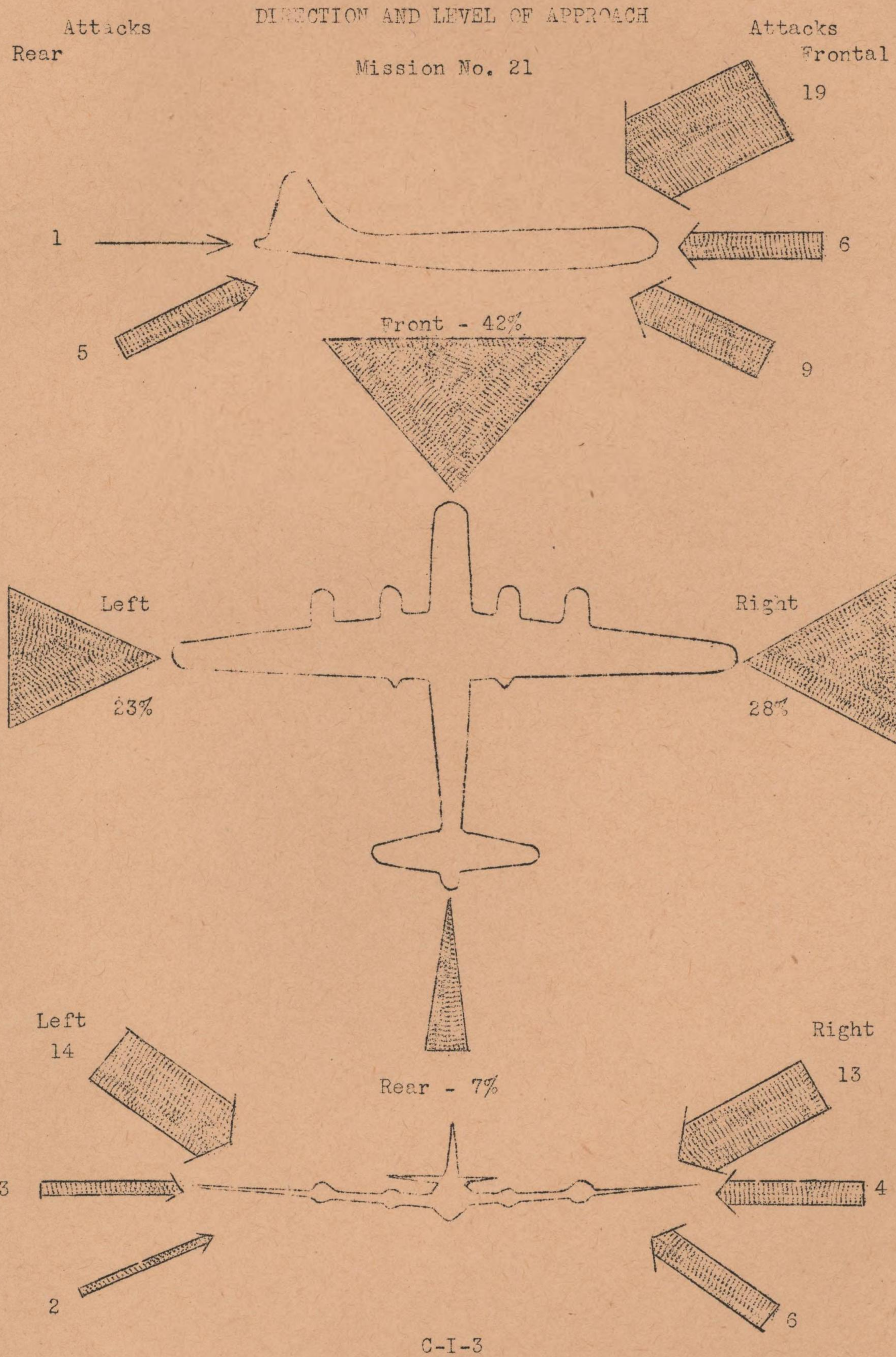
3. Exchange of Fire: Enemy fighters opened fire in 71 per cent of the encounters and B-29's opened fire in 88 per cent of the encounters. (The basis for the percentage of enemy fire excludes 17 encounters lacking data.) This is a slightly higher percentage of enemy fire than has been experienced in the 7 previous missions where this figure has varied between 42 and 67 per cent with the exception of Mission No. 18 in which it was 80 per cent.

C-I-2

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A small majority of enemy fighters opened fire at ranges over 1000 yards and almost as many between 500 to 800 yards. These two range brackets have been prominent also in previous missions. There was a slight tendency for B-29's to open fire at shorter distances than in the past. Details comparing distances at which enemy aircraft and B-29's opened fire are given in Table No. 3.

Table No. 3 - 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	19	21	20	28
500 to 799	12	27	16	23
800 to 999	7	16	11	15
1000 & over	16	36	24	34
Total	44*	100	71	100

\* 2 additional attacks with fire, distances unknown.

4. Aggressiveness of Enemy Attacks: Japanese pilots were aggressive with 51 per cent of their attacks pressed to less than 500 yards and 45 per cent to less than 250 yards. This is comparable with the aggressiveness of the enemy over Rangoon, but less aggressive than the attacks over the Japanese mainland, Mukden, and Bangkok. Of the attacks pressed to less than 250 yards all were within 200 yards and 21 were pressed to less than 100 yards. The 21 attacks represent 26 per cent of all encounters. The distances of closure for these encounters were as follows:

<u>Distance (yards)</u>	<u>No. of Encounters</u>
20	4
25	2
30	1
35	5
50	6
70	2
75	1
Total	21

Although the enemy pilots were aggressive they were lacking in skillfulness as indicated by the slight damage to our aircraft and the general absence of impressive tactics. Distances of closure are shown in detail in Table No. 4 on the following page.

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Table No. 4 - Distances To Which Attacks Were Pressed

<u>Distance(yards)</u>	<u>No. of Encounters</u>	<u>Percent</u>
1000 & over	5	6
800 to 999	8	10
500 to 799	18	23
250 to 499	13	16
0 to 249	36	45
Total	80*	100

\* 2 encounters with incomplete data.

5. Aerial Bombs: Only 1 aerial bombing attack was reported. It was executed by 2 TOJOS flying line astern in a coordinated attack from 11 o'clock. They were almost past the B-29 in their pursuit curve when they turned in, closed to 600 yards where they released their bombs, then broke away in vertical dives. No damage was sustained by the B-29. Additional details of the attack are lacking.

6. Coordinated Attacks: Six coordinated attacks, each with 2 enemy aircraft occurred during the interception. On 3 occasions the typical Chow Line attack was employed. The other 3 attacks were all high from 9, 10 and 11 o'clock. These attacks were executed in similar fashion to ordinary single plane attacks from these directions, merely employing 2 enemy aircraft instead of 1.

7. Breakaway Maneuvers: Enemy pilots brokeaway in dives in 50 per cent of the encounters. Six of the high attackers continued their dives through the B-29 formations. Twenty per cent of the attackers employed the split S in their breakaways and the remaining 30 per cent employed slow rolls, peel-offs and wing-overs.

8. Evasive Action by B-29's: The only evasive action by B-29's was the tightening of formations.

9. Preliminary Claims: Details concerning the encounters in which 1 enemy aircraft is claimed destroyed, 3 probably destroyed and 10 damaged are given in Table No. 5 on the following page.

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Table No. 5 - 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 E/A Brokeaway or Disintegrated (yards)
TOJO	Destroyed	9	1 high	1500	500
TONY	Prob Dest	5	1 low	1000	200
TONY	Prob Dest	9	3 high	400	25
TOJO	Prob Dest	10	5 level	1000	400
TOJO	Damaged	9	1 low	400	75
TONY	Damaged	9	1 low	1000	400
TOJO	Damaged	10	1 level	250	100
TOJO	Damaged	10	2 low	500	500
TOJO	Damaged	10	3 level	200	200
TONY	Damaged	10	10 high	700	150
ZEKE 32	Damaged	10	10 high	500	35
TOJO	Damaged	13	11 high	300	100
TOJO	Damaged	9	11 high	1000	15
S/E	Damaged	9	12 level	270	20

10. New Tactics: No new or unusual enemy tactics were observed.

11. Summary

- a. Weak Japanese fighter opposition.
- b. 28 to 34 enemy fighters intercepted 45 B-29's in 82 individual encounters.
- c. 4 B-29's sustained minor damage.
- d. Preliminary enemy aircraft claims: 1 destroyed, 3 probably destroyed and 10 damaged.
- e. Opposition confined to the primary target area.
- f. High frontal attacks predominated; 42 per cent of the attacks were frontal and 56 per cent high.
- g. Enemy fighters opened fire in 71 per cent of the encounters and B-29's opened fire in 88 per cent of the encounters.
- h. Japanese pilots generally aggressive but not skillful.
- i. Aerial bombs observed in 1 encounter.
- j. 6 coordinated attacks reported; 3 employed the Chow Line attack.

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S E C R E T



S E C R E T

11. Summary (continued)

k. Breakaways were dives in 50 per cent of the encounters and split S's in 20 per cent.

12. Enemy Aircraft Markings

<u>Color</u>	<u>Enemy Aircraft</u>	<u>Wing and Fuselage Markings</u>	<u>Tail Markings</u>
Silver	TOJOS	Red balls on wings.	
"	TOJO	Red circles on wings.	
"	TOJO	Red stripes under wings.	
"	TOJOS	No markings observed.	
"	TONY	White spinner.	
"	ZEKE 32	No markings observed.	
Black	OSCAR	White diagonal stripes on wings.	
"	TOJO	Yellow wings.	
Blue	TOJO	Yellow wings.	
Green	S/E	No markings observed.	
Camouflaged	TOJO	Red and yellow markings on wing tips.	
" (sandy)	TONY	Red dots on underside of left wing.	
Olive-drab	TONYS	Orange wings with red ball insignia.	
" "	TOJOS	No markings observed.	
" "	ZEKE 32's	No markings observed.	
Unreported color	TONY	yellow spinner.	2 diagonal stripes on vertical stabilizer.
"	TOJO	Red cowling.	
"	TOJOS	Vertical red stripe on fuselage.	
"	ZEKE	Yellow nose, suns under wings and on cockpit.	

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S E C R E T

ANNEX

D

WEATHER INFORMATION

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

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* * * * *
* Prepared by: *
* Weather Section *
* XX Bomber Command *
* * * * *
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S E C R E T



S E C R E T

A. Winds Aloft - Forecast

Altitude	Base	Target
5000'	40 deg. - 15K	. . . . .
10,000'	40 deg. - 20K	30 deg. - 22K
15,000'	250 deg. - 50K	270 deg. - 55K
20,000'	270 deg. - 75K	270 deg. - 80K
25,000'	270 deg. - 100K	270 deg. - 105K

B. Winds Aloft - Encountered

Altitude	108 deg. E	Target
15,000'	260 deg. - 50K	
18,000'		270 deg. - 55K
21,000'		260 deg. - 80K

C. Target Temperatures

As Forecast

Altitude	Temperature
5000'	-10 deg. C.
10,000'	-17 deg. C.
15,000'	-05 deg. C.
20,000'	-15 deg. C.
25,000'	-25 deg. C.

Mean temperature from 21,000' to surface; -11 deg. C

As Encountered

Altitude	Temperature
21,000'	-17 deg. C.

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S E C R E T



S E C R E T

I - WEATHER INFORMATION

Mission No. 21

18 December 1944

	As Forecast	As Encountered
Base (Take-off)	Overcast, base 8000', tops 12,000'. Scattered stratocumulus base 3000', tops 5000'. Light rime icing in clouds. Visibility 3 miles in haze.	Hsinching; Overcast at 8000'. Visibility 4 miles in haze. Wind south 5 mph. Kwanghan; Overcast at 8000'. Visibility 4 miles in haze. Wind North 5 mph. Kiunglai; Overcast at 10,000'. Visibility 2 1/2 miles in light fog. Wind north 5 mph. Pengshan; Overcast at 8000'. Visibility 2 miles in light ground fog. Wind south 5 mph.
Route Out	The overcast will extend to beyond the mountains becoming broken at 111° E. and scattered from there to target. The stratocumulus layer will increase to broken over the hills and merge with the upper layer, giving tops to 13,000' over the hills. Moderate icing in clouds over the mountains.	Base to Mountains; Overcast altostratus with base at 11,000', and tops at 12,000'. Overcast altostratus with base at 8000', and tops at 9000'. Mountains to Target; Scattered altostratus and altocumulus at 10,000'. Scattered cumulus and stratocumulus at 4000'. Visibility 10 miles in haze. Light to moderate turbulence through inversion at 12,000'.
Target Area	Scattered to broken cirrostratus at 23,000'. Visibility 10 miles in haze. The haze layer will extend to 10,000' over the target. Surface winds northeast 10 mph. Mean bombing temperature from 21,000' to Surface; -11° C. Target Pressure; 30.54	All Targets; Clear. Visibility ranging from 7 to 15 miles in haze layer which extended to 16,000'.
Route Back	Similar to route out.	Target to Mountains; Scattered altocumulus at 10,000'. Visibility 10 miles. Mountains to Base; Broken to overcast altocumulus and altostratus at 10,000'. Scattered cumulus at 6000'.
Base on Return	Broken to overcast at 9000'. Scattered stratocumulus, base 3000'. Visibility 5 miles in haze.	Hsinching; Broken at 12,000'. Visibility unlimited. Wind SSW 4 mph. Kwanghan; 2/10 altostratus at 11,000' and 1/10 cumulus at 6000'. Visibility 10 miles. Wind NE 5 mph. Kiunglai; Overcast at 11,000'. Visibility 7 miles. Wind NE 3 mph. Pengshan; Overcast with breaks at 10,000'. Visibility 7 miles. Wind SE 5 mph.

D-I-1

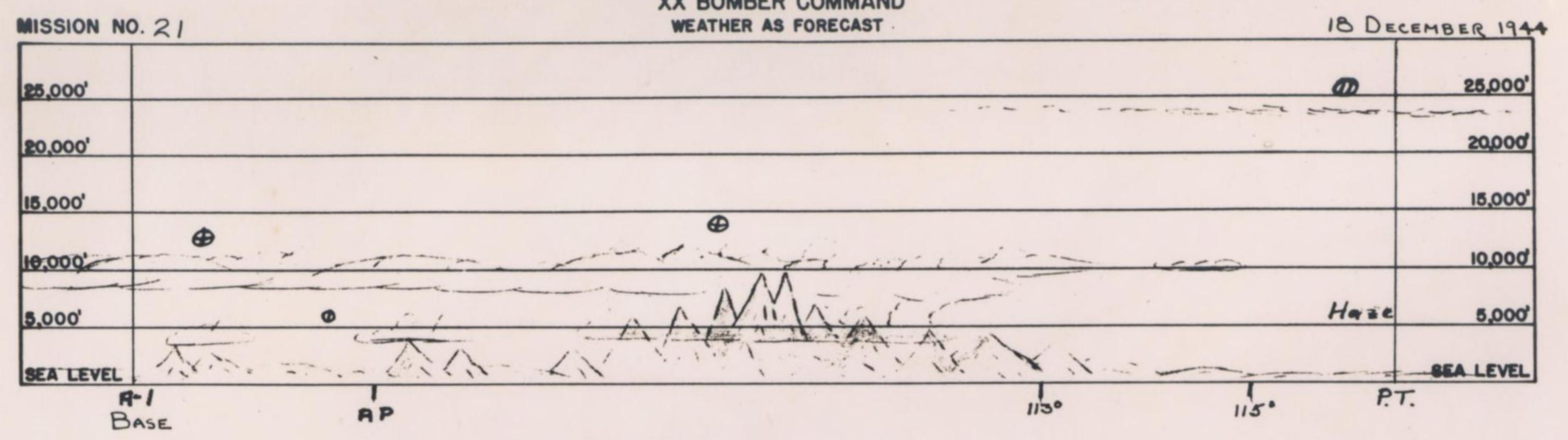
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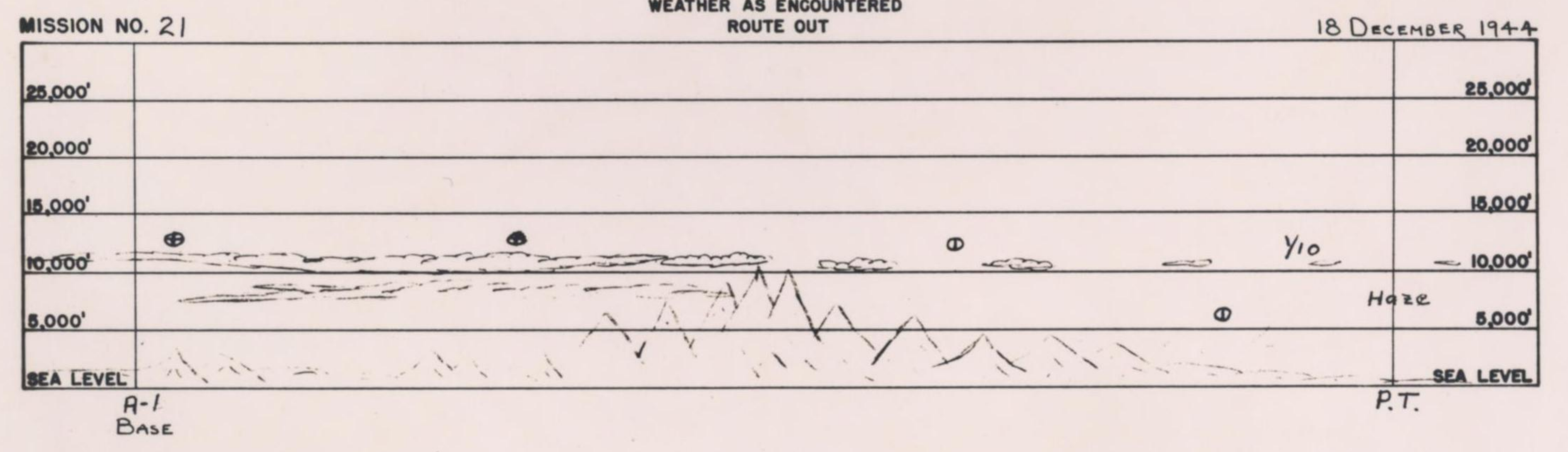
By SG NARA Date 11/8/05



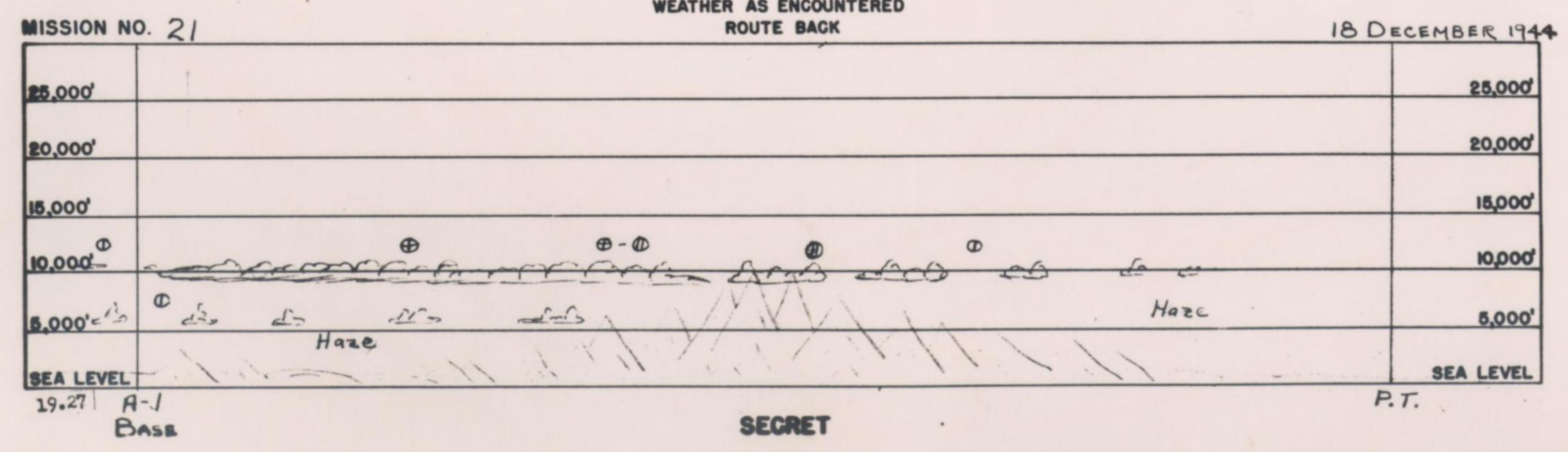
**SECRET**  
 XX BOMBER COMMAND  
 WEATHER AS FORECAST



**SECRET**  
 WEATHER AS ENCOUNTERED  
 ROUTE OUT



**SECRET**  
 WEATHER AS ENCOUNTERED  
 ROUTE BACK

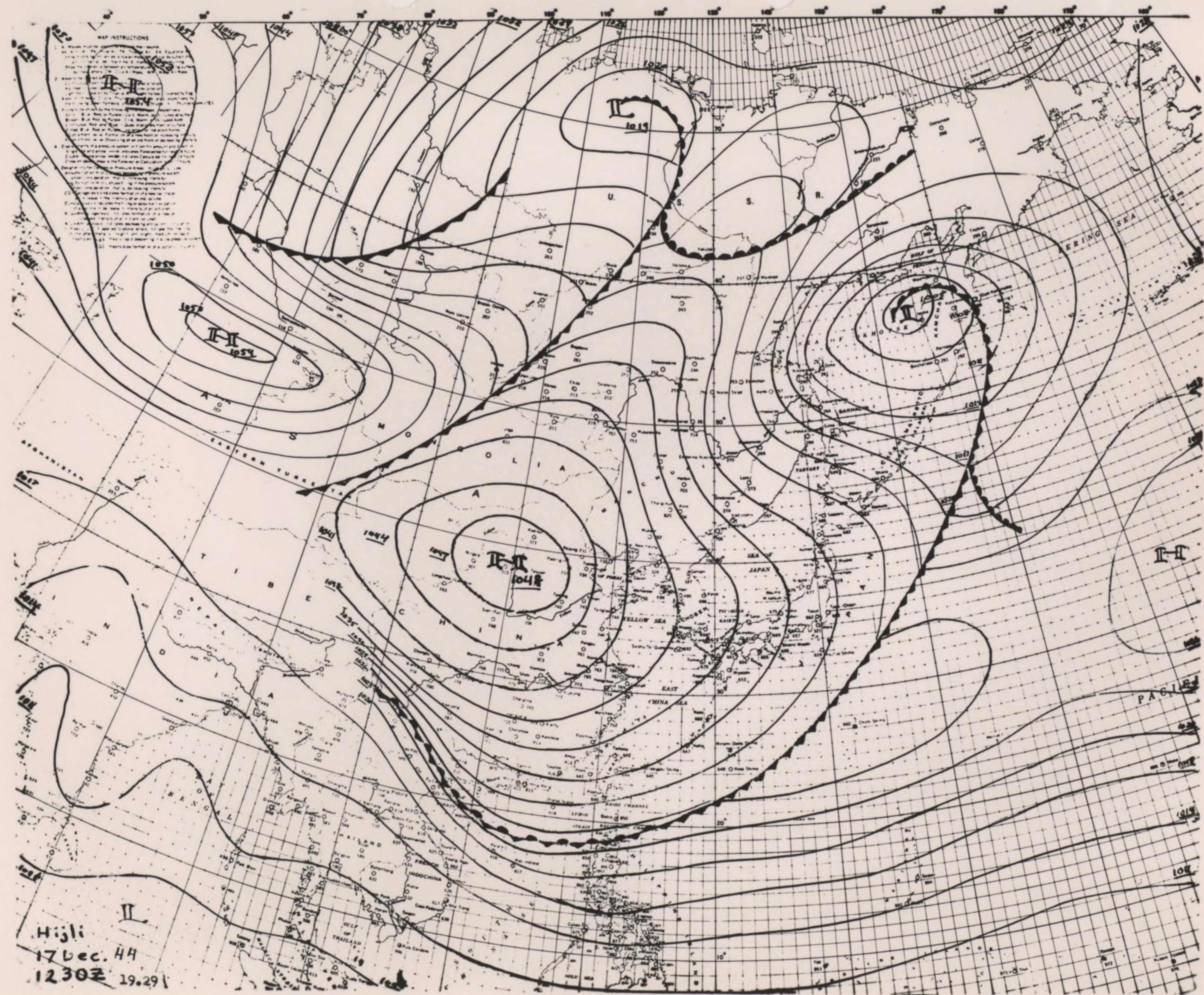






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S E C R E T

ANNEX

E

COMMUNICATIONS INFORMATION

\*\*\*\*\*  
\* Prepared by: \*  
\* Communications Section \*  
\* XX Bomber Command \*  
\* \*\*\*\*\*

S E C R E T

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E.O. 11652, Sec. 3(E) and 5(D) or (E)  
By NND 740120  
By CS/MT NARS, Date OCT 21 1975

DECLASSIFIED  
Authority 760063  
By SG NARA Date 11/8/05



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: SECRET :  
: Auth: CG XX BC :  
: Date: 28 Dec 44 :  
: Initials: : : : : : : : :  
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HEADQUARTERS  
XX BOMBER COMMAND  
APO 493

CONSOLIDATED  
SPECIALIST MISSION  
REPORT OF

XX BOMBER COMMAND COMMUNICATIONS (RADIO) OFFICER

Date Prepared: 26 December 1944.

Field Orders No: 21

Date of Mission: 18 December 1944.

1. Communications for Mission number twenty-one (21) were in general satisfactory. Once again the assigned frequencies proved highly satisfactory, offering continuous communications throughout the entire mission, which can be attributed to good weather and the relatively short distance flown.

2. As on past missions a Dummy Message was transmitted from the Command Post to all groups, for relay to all aircraft. A time study of the handling of this message is contained in Annex Number One (1) to this report.

3. Due to wide dispersal of A/C when returning to the forward bases there were some deviations from provisions of the Tactical Doctrine as pertains to the transmission of YYY Messages. Some duplications existed and all planes were not accounted for, in some cases due to the confusion on the part of formation leaders as to the actual number of A/C in their formations.

a. 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>
(1) Aborts:	1	1	1	1
(2) Bombs Away:	2	3	3	8
(3) Attack:	1	2	2	1
(4) Position:	3	4	6	8
(5) Intelligence:	0	0	0	0

4. 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>0000-0200</u>	<u>0200-0400</u>	<u>0400-0600</u>	<u>0600-0800</u>
2807.5 kcs	S3 R3 W3	-- -- --	-- -- --	-- -- --
4825 kcs	S5 R4 W2	S4 R4 W2	S4 R4 W1	-- -- --
4995 kcs	-- -- --	-- -- --	S2 R3 W3	-- -- --
8260 kcs	S5 R5 W1	S4 R4 W1	S4 R4 W2	S4 R5 W1
8310 kcs	S5 R5 W1	S3 R4 W2	S4 R4 W2	S5 R5 W0
8495 kcs	S3 R4 W2	S4 R4 W2	S4 R4 W3	-- -- --
8545 kcs	S4 R4 W1	S5 R5 W0	S5 R5 W0	-- -- --
12285 kcs	-- -- --	S5 R5 W3	S4 R4 W3	-- -- --
12415 kcs	S2 R3 W2	S2 R2 W4	-- -- --	S5 R5 W0

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GROUND STATION TO AIRCRAFT

<u>Frequency</u>	<u>0000-0200</u>	<u>0200-0400</u>	<u>0400-0600</u>	<u>0600-0800</u>
2807.5 kcs	S3 R3 W3	-- -- --	-- -- --	-- -- --
4825 kcs	S4 R4 W1	S4 R4 W2	S4 R4 W2	-- -- --
4995 kcs	-- -- --	-- -- --	S3 R3 W3	-- -- --
8260 kcs	S4 R4 W3	S3 R3 W3	S5 R5 W0	S4 R5 W1
8310 kcs	S4 R4 W1	S3 R4 W2	S4 R4 W2	S4 R5 W1
8495 kcs	S4 R4 W2	S4 R4 W1	S4 R4 W2	-- -- --
8545 kcs	S4 R4 W1	S4 R4 W0	S5 R5 W0	-- -- --
12285 kcs	-- -- --	S4 R4 W1	S5 R5 W1	-- -- --
12415 kcs	S3 R3 W2	S3 R3 W2	-- -- --	S5 R5 W0

5. 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)	5	210	500	---
Suining (SI)	7	77	130	---
Hsinching (CU)	42	129	160	---
Pengshan (MV)	12	75	100	255
Enshih (SH)	3	60	100	10
Peishiyi (PY)	26	93	275	---
Liangshan (LM)	49	161	250	---
Kiunglai (OD)	8	113	300	206
Kwanghan (LK)	7	88	150	---
Chengkung (DB)	2	90	100	265
Kunming (AW)	1	200	200	90
Chanyi (CY)	1	50	50	120

b. Radio Ranges:

Hsinching (CU)	7	80	175	---
Kunming (RQ)	1	150	150	---
Kwanghan (LK)	1	150	150	270

c. YJ Beacons:

Kiunglai (OD)	1	60	60	---
---------------	---	----	----	-----

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

<u>Station</u>	<u>Frequency</u>	<u>Number of Requests</u>	<u>Type Bearing</u>		
			<u>I</u>	<u>II</u>	<u>III</u>
468th 5D5	8260 kcs	1			1

e. Air-to-air homing was utilized by the 462nd Bomb Group. A/C 448 transmitted homing signals on 1320 kcs and A/C 457 transmitted homing signals on 1180 kcs. Four A/C homed on these signals at an average distance of 40 miles and with extreme distance of 50 miles. The remaining A/C homed visually. Results were considered excellent.

6. A negligible amount of man made interference was encountered on air-ground and air-to-air command frequencies. The interference noted was both CW and voice broadcasts, but, in no instance was it severe enough to disrupt communications.

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7. No violations of cryptographic security were logged.

8. Malfunctions of equipment:

a. 40th Bomb Group:

(1) A/C 752 lost Radio Compass sense antenna.

b. 444th Bomb Group:

(1) A/C 538 sense antenna broke. Used whip antenna.

(2) A/C 340 number two command transmitter inoperative. Not repaired in flight.

(3) A/C 857 number one command receiver inoperative. Not repaired in flight.

(4) A/C 464 sense antenna broke. Changed to whip.

(5) A/C 376 BFO on liaison receiver went out for about 30 minutes, then came on again. Reason not determined.

c. 462nd Bomb Group:

(1) A/C 830 right gunners' microphone switch shorted. Not repaired in flight.

(2) A/C 285 had radio compass out. No signal on loop position, indicator needle failed to settle down but antenna position was ok.

d. 468th Bomb Group:

(1) A/C 4719 broken compass antenna.

(2) A/C 525 had a bad liaison receiver because of a bad keying relay in liaison transmitter. Not repaired in flight.

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By SG NARA Date 11/8/05



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: : : : : : : : : :  
: SECRET :  
: Auth: CG XX BC :  
: Date: 28 Dec 44 :  
: Initials:        :  
: : : : : : : : :

HEADQUARTERS  
XX BOMBER COMMAND  
APO 493

ANNEX NO. 1

TO

CONSOLIDATED  
SPECIALIST MISSION  
REPORT OF

XX BOMBER COMMAND COMMUNICATIONS (RADIO) OFFICER

Date Prepared: 26 December 1944.

Field Orders NO: 21

Date of Mission: 18 December 1944.

1. The following is a time study involving message handling time of the practice message sent on mission number twenty one (21).

2. The message was filed for transmission 180506Z, and was transmitted via 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>
0535Z	0536Z	0534Z	0534Z

a. The delay shown between filing time and time of receipt by groups is accountable for, in that, after transmission of the message to the groups it was found that message contained an encoding error, which required a service to be sent.

b. 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>
579	Direct	0542Z	
420	"	0543Z	
269	"	0544Z	
541	"	0545Z	
620	"	0546Z	
859	"	0547Z	
297	"	0547Z	
729	"	0548Z	
752	"	0548Z	
233	"	0550Z	
319	"	0551Z	
348	"	0553Z	
466	"	0602Z	
404	"	0605Z	

Time of first transmission: 0538Z  
Time of receipt by first A/C: 0542Z  
Time of receipt by last A/C: 0605Z  
Total elapsed time: 27 minutes.  
Average transmission time: 11.35 minutes.

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(2) 444th Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
341	Direct	0545Z	
423	"	0548Z	
732	"	0556Z	
462	"	0559Z	
202	"	0600Z	
292	"	0600Z	
399	"	0604Z	
485	"	0604Z	
857	"	0604Z	
422	"	0608Z	
724	"	0608Z	
584	"	0620Z	
340	"	0624Z	
731	"	0627Z	
472	"	0616Z	

Time of first transmission: 0542Z  
Time of receipt by first A/C: 0545Z  
Time of receipt by last A/C: 0627Z  
Total elapsed time: 45 minutes.  
Average transmission time: 23.53 minutes.

Nine A/C of this group did not receive this message. Reason given in Group Communication Specialist Report is that message was addressed to the flight leaders one of which could not be contacted and that some A/C were not in any formation. This excuse clearly shows that the provisions of the Tactical Doctrine in handling dummy message traffic were not carried out by this group.

(3) 462nd Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
457	Direct	0550Z	
448	"	0540Z	
312	"	0545Z	
461	"	0549Z	
362	"	0545Z	
285	"	0550Z	
830	"	0545Z	
479	"	0550Z	
232	Relay	0600Z	
472	Direct	0550Z	
581	Relay	0620Z	
311	Direct	0550Z	
456	"	0545Z	
393	"	0550Z	
711	"	0545Z	
463	"	0550Z	
505	"	0545Z	
316	"	0550Z	
386	"	0545Z	
475	"	0545Z	
287	"	0550Z	

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Time of first Transmission: 0537Z  
Time of receipt by first A/C: 0540Z  
Time of receipt by last A/C: 0620Z  
Total elapsed time: 43 minutes.  
Average transmission time: 11.15 minutes.

All A/C received message with the exception of A/C 506. The radio operator in this A/C was sent back to the CFC compartment to get flight rations. While the radio operator was there the pilot de-pressurized, without notifying the radio operator of the intended action. This left the radio operator in the rear of the plane for 45 minutes on oxygen until the plane was re-pressurized. It was during this time that the practice message was sent.

(4) 438th Bomb Group:

<u>A/C Call Sign</u>	<u>How Received</u>	<u>Time of Receipt</u>	<u>Remarks</u>
424	Not received	----	Unable to read ground Station
691	" "	----	Not on Radio watch
272	Direct	0540Z	
4546	Not received	----	trying to contact emergency field
397	Direct	0555Z	
3355	"	0549Z	
4487	"	0540Z	
284	Not received	----	Requesting QDM
525	Direct	0545Z	
442	"	0540Z	
417	"	0550Z	
454	"	0545Z	
460	Not received	----	Not on radio watch using homing beacon
5227	" "	----	Requesting weather and using radio compass
542	Direct	0545Z	
265	"	0545Z	
3354	"	0545Z	
486	"	0545Z	
411	"	0608Z	
494	"	0545Z	
469	"	0545Z	
6407	"	0545Z	
737	"	0550Z	
6409	"	0543Z	
5208	"	0545Z	
445	"	0542Z	
704	"	0542Z	

Time of first transmission: 0535Z  
Time of receipt by first A/C: 0540Z  
Time of receipt by last A/C: 0608Z  
Total elapsed time: 33 minutes.  
Average transmission time: 10.86 minutes.

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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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SECRET

Auth: CG XX BC

Initials: YK

Date 26 Dec 44

HEADQUARTERS  
XX BOMBER COMMAND  
APO 493

CONSOLIDATED  
SPECIALIST MISSION  
REPORT OF

XX BOMBER COMMAND RADAR OFFICER

Date Prepared 26 December 44 Field Orders Number 21  
Date of Mission 18 December 44

I - Radar Information

A - Navigation and Bombing

1. The turning points and Initial Point were easily identified by radar, and although conditions were mostly CAVU, radar aided measurably. The target itself was excellent for radar. Many operators reported that they would have had no difficulty in bombing entirely by radar.

2. In one particular case, the radar operator directed the lead ship of a formation to the target. Although it was a visual run, the radar operator synchronized the sight without any difficulty. "Bombs away" of radar operator and bombardier coincided. Another formation reaching the target area found it obscured by smoke. The radar operator and bombardier cooperated on this run. The radar operator synchronized the sight and the bombardier put in drift and rolled back the sight the correct amount for off-set. Preliminary reports indicate good results. On the whole, this type of target, located on a wide river with distinctive bends and forks makes an excellent radar target.

B - Scope Photography

1. Considerable difficulty was encountered in securing radar scope pictures on this mission. The main failures may be due to the new automatic K-24 camera installation; however, a great many failures were encountered in radar and camera equipment. These failures are being investigated and corrective action taken. It is believed the new K-24 camera operation will be improved with the standardization of the camera installation and also the securing of needed supplies.

2. Of the six (6) sets of radar scope pictures returned three (3) sets were useable. The pictures useable were good to excellent and many were useable for plotting purposes.

C - Serviceability

1. Serviceability of the radar equipment over the target, 87 per cent operational, is considered average. Of those sets inoperative, one-third were due primarily to inverter failures. This is still one of the major malfunctions. The majority of complete failures of APQ-13 took place between take-off and target. This is usually the case. Partial failures, although somewhat more spread over time in operation, occurred mostly before the target.

2. Some interference from other APQ-13 systems was encountered. It was mostly reported as slight. However, the radar operator of one formation lead ship requested all other systems in the formation to be switched to stand-by position as a precautionary measure. This radar operator made an excellent run.

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Authority 760063

By SG NARA Date 11/8/05



S E C R E T

II - RADAR TABLES

A - BOMBING DATA

TOTAL A/C BOMBING - TARGETS 89  
 TOTAL A/C BOMBING - TARGETS VISUALLY 80  
 TOTAL A/C BOMBING - TARGETS BLIND 9  
 TOTAL A/C BOMBING - TARGETS BY RADAR 0

B - PHOTOGRAPHIC RESULTS

DATA	40TH GP		444TH GP		462ND GP		468TH GP		TOTAL	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
NO. CAMERAS INSTALLED	2	--	7	--	3	--	10	--	22	--
K-35 CAMERAS	0	--	0	--	0	--	1	--	1	--
K-24 CAMERAS	2	--	6	--	1	--	9	--	18	--
H2X CAMERAS	0	--	1	--	2	--	0	--	3	--
NO. CAMERAS IN ABORT, EARLY RETURN & MISS- ING AIRCRAFT *	0	0	0	0	0	0	1	10	1	10
NO. CAMERAS COM- PLETING MISSION *	2	100	7	100	3	100	9	90	21	95
NO. CAMERAS IN RADAR & CAMERA MALFUNCTION AIRCRAFT #	1	50	3	43	0	0	4	44	8	36
SETS PICS RETURNED #	1	50	4	57	0	0	1	11	6	20
NEGATIVES RET.	27	--	169	--	0	--	6	--	202	--
SETS PICS USEABLE **	1	100	2	50	0	0	0	0	3	50
SETS PICS TRACING BOMB RUN **	1	100	1	25	0	0	0	0	2	33

\* PERCENTAGE BASED ON CAMERAS INSTALLED.  
 # PERCENTAGE BASED ON CAMERAS COMPLETING MISSION.  
 \*\* PERCENTAGE BASED ON SETS OF PICTURES RETURNED.



S E C R E T

C - NAVIGATIONAL RANGES

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 No. Reporting	Weighted Average Range
MAPPING	12	37	22	42	14	42	27	35	75	39
HANKOW (P.T.)	12	32	14	36	11	31	20	30	57	32
YOCHOW (S.T.)	1	35	3	27	0	0	3	20	7	25
N. TIP OF ISLAND (IP) 30°23'N, 115°04'E	12	25	17	28	10	21	18	26	57	25
YANGTZE RIVER (A.P.)	5	29	11	26	13	23	23	34	52	29
CHANG CHIANG	0	0	0	0	0	0	4	33	4	33
TCHANG	0	0	4	23	0	0	0	0	4	23
KIALING RIVER	2	23	13	24	0	0	2	17	17	23
KU HO RIVER	1	20	7	18	0	0	2	15	10	18
KUN YANG LAKE	0	0	0	0	3	25	0	0	3	25
LIANGSHAN RIVER	0	0	10	28	0	0	1	10	11	28
TUNG TING LAKE	6	27	11	38	10	33	8	41	35	35
WEIYUAN LAKE	0	0	2	17	0	0	1	30	3	21

D - RADAR SERVICEABILITY

DATA	40TH GP		444TH GP		462ND GP		468TH GP		TOTAL	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
A/C AIRBORNE	16	--	25	--	23	--	30	--	94	--
A/C REPORTING	16	--	25	--	22	--	30	--	93	--
AN/APQ-13 OPERATIVE ON TAKE-OFF*	16	100	23	92	21	95	29	96	89	96
A/C BOMBING	15	--	24	--	23	--	27	--	89	--
A/C REPORTING BOMBING	15	100	24	96	22	100	27	90	88	95
AN/APQ-13 OPERATIVE OVER TARGET #	12	80	20	83	21	95	24	89	77	87
AN/APQ-13 UNREPAIRABLE FAILURES #										
COMPLETELY INOPERATIVE	3	20	6	25	1	4.5	4	15	14	16
PARTIALLY INOPERATIVE	2	13	3	13	1	4.5	1	4	7	8
TOTAL	5	33	9	38	2	9	5	19	21	24
APQ-13 REPAIRED IN FLIGHT *	2	13	0	0	2	9	0	0	4	5
NO FAILURES OF AUXILIARY EQUIPMENT	0	0	0	0	0	0	0	0	0	0

\* PERCENTAGE BASED ON A/C REPORTING.

# PERCENTAGE BASED ON A/C REPORTING BOMBING.



S E C R E T

E - MALFUNCTIONS

DATA	40TH GP	444TH GP	462ND GP	468TH GP	TOTAL
AT TAKE-OFF					
INVERTER	0	2	0	1	3
MODULATOR	0	0	1	0	1
TOTAL	0	2	1	1	4
BETWEEN TAKE-OFF & TARGET					
COMPLETE:					
INVERTER	1	0	0	0	1
AFC	1	0	0	0	1
PRESSURIZATION	0	1	0	0	1
SPOKING	1	0	0	0	1
NO GAIN	0	1	0	1	2
NO TRACE	0	1	0	1	2
TOTAL COMPLETE	3	3	0	2	8
PARTIAL:					
BLANK SECTORS	1	0	0	0	1
BOMB RELEASE PIP OUT	0	1	0	0	1
OPR'S SCOPE DEFOCUSED	0	1	0	0	1
AZIMUTH STAB. OUT	0	0	0	1	1
TRANSTAT	0	0	1	0	1
TOTAL PARTIAL	1	2	1	1	5
TOTAL COMPLETE & PARTIAL	4	5	1	3	13
BETWEEN TARGET & LANDING					
COMPLETE:					
NO TRACE	0	1	0	0	1
ENEMY ACTION	0	0	0	1	1
TOTAL COMPLETE	0	1	0	1	2
PARTIAL:					
HEADING LINE OFF	1	0	0	0	1
PRESSURIZATION	0	1	0	0	1
TOTAL PARTIAL	1	1	0	0	2
TOTAL COMPLETE & PARTIAL	1	2	0	1	4
REPAIRED IN FLIGHT					
CHANGED INVERTERS	1	0	0	0	1
REPLACED F-1108	1	0	0	0	1
REPLACED CRT	0	0	1	0	1
CABLES TIGHTENED,					
NO TRACE	0	0	1	0	1
TOTAL	2	0	2	0	4
AUXILIARY EQUIPMENT					
NO FAILURES					

NOTE: DIFFERENT FAILURES IN SAME SET ARE ALL LISTED.

S E C R E T



S E C R E T

ANNEX

G

RCM INFORMATION

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* * * * *  
* Prepared by: *  
* RCM Section *  
* XX Bomber Command *  
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\* E C R E T \*  
.Auth: CG, XX BC  
.Initials: *MOP*  
.Date: 29 Dec. 44  
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HEADQUARTERS  
XX BOMBER COMMAND  
APO 493

29 December 44

SUBJECT: RCM Report - Combat Mission No. 21, Hankow, China,  
18 December 44 - Daylight.

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

A. General

RCM activities on this mission, as on previous missions, were confined to searching. Eight RCM equipped aircraft, each with one RCM Observer, participated in the mission. The Observers searched for enemy Early Warning Radar sites enroute to and from the target. Within the target area, possible frequencies of enemy Radar Fire Control Equipment and fighter control communications were monitored.

B. Results

On this mission, an attempt was made to verify the location of radar sites previously reported at Hankow, Yochow, Anlu and Shasi. Unfortunately, the cuts obtained on this mission were so broad that verification of the present sites by means of D'F'ing, was impossible.

1. Yochow Radar: 71.5/510/36. This signal was first intercepted at 29°55'N 110°45'E. The signal was strongest near Yochow and was weakly intercepted while the aircraft were at the "IP".

2. Hankow (Wuchang): 77/510/35. Interception of this signal first occurred in the yochow area. Maximum signal strength was recorded in the Hankow area. One RCM Observer, while monitoring the Hankow radar frequency, noticed that the 77 Mc. radar locked on and continued to track the formation. Shortly afterwards, a group of fighters attacked the formation from 12 o'clock low. The 77 Mc. radar signal disappeared soon after the fighters withdrew. Intercepts of this signal, enroute home, were recorded to the longitude of 111°E.

3. Shasi: 66.5/510/35. The strongest signal recorded on this mission. Intercepted after leaving the target area and recorded to the longitude of 109°30'E.

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4. Anlu: No definite radar intercepts were made, with the Anlu radar site characteristics, when in the Anlu area.

5. 73/510/29: The location of intercepts of this signal coincide with those of the Yochow radar and it is possible that the 73 Mc. radar site may be located in the Yochow area. An attempt to verify this assumption will be made on future missions into this area.

6. 98/790/41: This radar intercept was made at 29°N 113°E and is probably the radar site located in the Changsha area.

C. Radar Fire Control

There were no radar intercepts made with fire control characteristics.

D. Enemy Communications

No intercepts, which could be definitely identified as fighter control signals were intercepted in the target area.

E. Enemy Countermeasures

No unusual enemy activity was reported and no jamming was encountered.

F. Equipment Malfunctions

One EB-218 Inverter had poor voltage regulation, probably due to a faulty carbon pile.

For The Commanding General:

*Leo I. Herpin*  
LEO I. HERPIN  
Colonel, Air Corps  
Actg. Adjutant General

-2-

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Authority 760063

By SG NARA Date 11/8/05



S E C R E T

ANNEX

H

CENTRAL STATION FIRE CONTROL AND GUNNERY

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

S E C R E T



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Auth: CG XXBC  
Initials: *RM*  
Date: 26 Dec 44

HEADQUARTERS  
XX BOMBER COMMAND  
APO 403

CONSOLIDATED  
SPECIALIST MISSION REPORT  
OF STAFF GUNNERY OFFICER

Date Prepared: 26 December 1944

Field Order Number 21  
Date of Mission: 18 Dec 44

1. On the mission directed by Field Order No. 21, fighter opposition is considered to be moderate as the majority of attacks were made by single aircraft which broke away at long range. There was no unusual or new tactics reported and since the majority of attacks as on previous missions originate from the high frontal area we must assume that this is the standard method of approach on our B-29 airplanes.

2. The mission is considered as satisfactory from the gunnery aspect. No airplanes were lost and only very slight damage was sustained to two of our airplanes by enemy fighters.

3. The following statistical data is submitted:

	<u>40th</u>	<u>444th</u>	<u>462nd</u>	<u>468th</u>
Ammunition used test firing	659	1675	2520	1890
Ammunition used in combat	1,555	3520	4005	6630
Malfunctions of C.F.C. System	1	1	5	5
Total turrets on mission	80	125	110	125
Malfunction of cal. 50 M. G.'s	3	2	3	5
Total cal. 50 M.G. on mission	160	250	220	250
Total airplanes (included in report)	16	25	22	25
Total percent malfunctions all groups	C.F.C. 2.7% cal. 50 M.G. 1.4%			

Claims by our gunners:

Destroyed	Probably Destroyed	Damaged
1	3	10

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S E C R E T

ANNEX

I

CAMERAS AND PHOTOGRAPHS

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I - CAMERAS AND PHOTOGRAPHS

Mission No. 21

18 December 1944

	40th			444th			462nd			468th			Total		
	K-18	K-20	K-22	K-18	K-20	K-22	K-18	K-20	K-22	K-18	K-20	K-22	K-18	K-20	K-22
Cameras airborne	3	7	4	5	4	5	3	11	8	5	7	7	16	29	24
In missing and non-reporting A/C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Completing mission	3	7	4	5	4	5	3	11	8	5	7	7	16	29	24
Photographing targets	3	3	4	4	3	4	2	d	4-e	3	6-h	6	12	j	18
Failure to photograph-mechanical	0	0	0	0	0	0	0	d	3-f	1-g	0	0	1	j	3
Failure to photograph-other reasons	0	4	0	1-c	1	1	1	d	1	1	1	1-i	3	j	3
Usable negatives	32-a	15	42-b	28	0	48	10	d	29-e	13	40-h	26	83	j	145

- a. One camera produced no usable negatives because master switch was not on.
- b. One camera produced no usable negatives because camera doors closed.
- c. Bombardier too busy to take pictures.
- d. Information not available. Film not received from forward area.
- e. One camera photographed Tangyang Airfield with 5 usable negatives resulting.
- f. Blank film, malfunction not specified, in 2 cases; shutter out of time in third.
- g. One camera attempting to photograph Yochow had its magazine freeze.
- h. One camera photographed Tangyang with 40 usable negatives resulting; one photographed Yochow with no usable negatives; and four photographed Hankow with no usable negatives.
- i. Bombardier forgot to take photographs.
- j. Information not complete.

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

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ANNEX I  
D.A. REPORT NO.32  
HANKOW, CHINA

1000' 500' 0' 1000' 2000' 3000'

TARGET UNIT. XX BC.  
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AREA VII  
468TH GROUP  
0404Z  
9 A/C  
59.4 TONS M-76

AREA V  
462ND GROUP  
0347Z  
9 A/C  
63.5 TONS M-76

AREA VI  
462ND G  
0354Z  
4 A/C  
23.2 TONS

COMPONENT





AREA VI  
462ND GROUP  
0354Z  
4 A/C  
23.2 TONS M-76

AREA II  
40TH GROUP  
0309Z  
2 A/C  
9.4 TONS M-76

AREA I  
40TH GROUP  
0308Z  
13 A/C  
57 TONS M-47A2

AREA III

DAMAGE KEY

- DESTROYED
- PREVIOUS DAMAGE

D GROUP  
Z  
ONS M-76









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101M PHOTO TECH. UNIT



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ANNEX

J

AIRCRAFT LOSSES AND DAMAGE

There were no battle losses, operational losses, or missing aircraft resulting from this operation. For details of battle and operational damage by aircraft, see Consolidated Mission Statistical Summary, Annex M, Table V.

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ANNEX

K

FUNCTIONING OF EQUIPMENT

I - Functioning of Equipment

II - Performance Data\*

\* Prepared by Staff Flight Engineer.

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S E C R E T

I - FUNCTIONING OF EQUIPMENT

Mission No. 21

18 December 1944

A. Summary

	<u>40th</u>	<u>44th</u>	<u>462nd</u>	<u>468th</u>	<u>Total</u>
Total A/C on hand in Group	<u>37</u>	<u>39</u>	<u>40</u>	<u>40</u>	<u>156</u>
Less: A/C undergoing acceptance check	2	1	1	1	5
A/C in depot	3	1	0	0	4
A/C in fwd area-non-operational	2	1	0	0	3
Photo reconnaissance A/C	0	1	1	1	3
A/C undergoing repairs	13	8	11	4	36
Other reasons	0	0	1	3	4
A/C airborne - rear area	17	27	26	31	101
Less: A/C returning to rear area bases	0	2	0	1	3
A/C landing in forward area	17	25	26	30	98
Less: A/C failing to take off on mission	1	0	3	0	4
A/C airborne on mission	16	25	23	30	94
Less: A/C failing to bomb PT-mechanical	1	1	1	7	10
A/C bombing PT	15	24	22	23	84

B. Details by Aircraft

1. Total combat A/C on hand 156
2. Less: A/C not becoming airborne - rear area 55
  - a. A/C undergoing acceptance check (5)
  - b. A/C in depot (4)
    - (1) A/C 295 (40th); battle damage.
    - (2) A/C 418 (40th); installing engines.
    - (3) A/C 508 (40th); battle damage (Cox's Bazaar)
    - (4) A/C 403 (44th); wing, fuselage, and fuel cell repairs.
  - c. A/C in forward area - non-operational (3);
    - (1) A/C 298 (40th); changing 2 engines and 4 props
    - (2) A/C 322 (40th); at Anhang.
    - (3) A/C 251 (44th); could not pressurize; battle damage.
  - d. Photo reconnaissance aircraft (3)
  - e. A/C undergoing repairs (36);
    - (1) 40th Group (13);
      - (a) A/C 276; changing #1 carburetor
      - (b) A/C 313; checking #1 engine; #1,2,4 fuel booster pump change.
      - (c) A/C 331; changing #1 cylinder.
      - (d) A/C 503; miscellaneous 3rd echelon maintenance.
      - (e) A/C 582; miscellaneous 3rd echelon maintenance.
      - (f) A/C 587; miscellaneous 3rd echelon maintenance.

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- (g) A/C 589; #1-4 engine change.
- (h) A/C 685; aileron assembly.
- (i) A/C 379; retiming; valve check #1 engine.
- (j) A/C 394; #2 engine change.
- (k) A/C 396; #2-3 engine change; #1 prop gov. change.
- (l) A/C 225; miscellaneous 3rd echelon maintenance.
- (m) A/C 407; sheet metal repair #4 engine.

- (2) 444th Group (8);
  - (a) A/C 343; fuel cell leak.
  - (b) A/C 507; #1-4 engine change.
  - (c) A/C 580; #2 engine change.
  - (d) A/C 730; #2 engine change.
  - (e) A/C 360; oil cooler change.
  - (f) A/C 411; battle damage.
  - (g) A/C 226; #4 engine change.
  - (h) A/C 228; fuel cell and prop change.

- (3) 462nd Group (11);
  - (a) A/C 209; #2 engine change.
  - (b) A/C 213; #2 prop out; left landing gear repair; oil leaks.
  - (c) A/C 329; #3 engine change.
  - (d) A/C 338; changing short stacks #4 engine.
  - (e) A/C 346; #2-3-4 engine change.
  - (f) A/C 382; electrical trouble #1 engine.
  - (g) A/C 728; #4 cylinder of #2 engine out.
  - (h) A/C 450; sheet metal repair.
  - (i) A/C 452; electrical trouble #4 engine.
  - (j) A/C 473; #4 engine change and plug change.
  - (k) A/C 873; removing de-icer boots.

- (4) 468th Group (4);
  - (a) A/C 217; #3 inboard supercharger change; 500-hour inspection.
  - (b) A/C 279; repairing hole in left wing - battle damage.
  - (c) A/C 471; #1 engine change; modifying cowl flaps.
  - (d) A/C 353; #2-3 engine changes; 50- hour inspection.

- f. Other reasons (4);
  - (1) A/C 434 (462nd); arrived too late for mission.
  - (2) A/C 678 (468th); became combat operational too late.
  - (3) A/C 703 (468th); became combat operational too late.
  - (4) A/C 719 (468th); became combat operational too late.

3. A/C airborne - rear area 101

4. Less: A/C returning to rear area bases 3

- a. A/C 353 (444th); APOC door assembly - gunner's emergency.
- b. A/C 458 (444th); engine change.
- c. A/C 415 (468th); oil leak #1 engine

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S E C R E T



S E C R E T

5. A/C landing in forward area 98
6. Less: A/C failing to take off on mission 4
- a. A/C 522 (40th): initial run up split #9 cylinder #2 engine.
  - b. A/C 347 (462nd): changing #3 engine.
  - c. A/C 354 (462nd): #2 tachometer out; #3 cylinder head temp. gage out; oil pressure low on #2-3-4 engines.
  - d. A/C 454 (462nd): engine cutting out completely
7. A/C airborne on mission 94
8. Less: A/C failing to bomb PT - mechanical 10
- a. Bombing secondary target (3):
    - (1) A/C 546 (468th): oil cooler instrument and electrical trouble.
    - (2) A/C 494 (468th): prop governor and fuel transfer system malfunction.
    - (3) A/C 424 (468th): late take-off due to dead batteries.
  - b. Bombing last resort target (2):
    - (1) A/C 461 (462nd): lost cap off oil tank and returned to base, taking off too late to bomb PT.
    - (2) A/C 411 (468th): late take-off due to dead batteries.
  - c. Jettisoning bombs (4):
    - (1) A/C 376 (444th): lost #1 engine and feathered prop.
    - (2) A/C 464 (468th): feathering line broke #3 engine.
    - (3) A/C 409 (468th): bomb rack malfunction.
    - (4) A/C 429 (468th): blown stack #3 engine.
  - d. Bringing bombs back (1):
    - (1) A/C 294 (40th): right landing gear would not retract.
9. A/C bombing primary target 84

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SUMMARY OF 'AL' GROUPS  
F. O. #21

Group	Overall	47th	444th	462nd	468th
Target	Primary	Primary	Primary	Primary	Primary
*Number of Aircraft	74	15	22	16	21
Total Time	6:42	7:02	6:16	7:22	6:44
Time to Target	3:49	3:32	3:30	3:53	3:28
Fuel Burned	Ave 3540	3700	3470	3780	3320
	Max 4200	4200	3950	4200	3800
	Min 3100	3125	3100	3310	3100
Fuel Carried	Ave 4210	5445	4760	5510	4225
	Max 6000	5800	5400	6000	4600
	Min 4000	5360	4700	5400	4000
Burnable	Ave 1330	1730	1325	1650	825
Reserve	Max 2800	2375	2250	2300	1500
	Min 500	1200	750	1200	500
**Air Miles	1575	1580	1544	1645	1585
Ground Miles	1475	1497	1455	1453	1464
**Gas Air Miles	2.2	2.3	2.2	2.3	2.1
***Bombing Altitude	19,600	18,400	21,000	19,600	20,100
	Ave. 104,500	124,740	124,800	131,225	118,500
Takeoff	Max. 134,980	127,200	129,500	134,980	123,000
Gross Wt.	Min. 114,175	122,709	120,360	127,590	114,175
	Ave: 11,720	9050	13,540	15,160	10,800
Weight of	Max. 18400	10,800	18,400	18,000	14,400
Bombs	Min. 6900	6900	11,050	9000	6970
No. of	M-76 9.9	3.2	0	27.3	11.9
Bombs	M-47A2 59	123	0	0	77
	M-17 10	0	29.4	6.2	0

\* That returned to home base for which logs are available.  
 \*\* Accuracy is doubtful due to methods in determination  
 \*\*\* Pressure Altitude

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S E C R E T

ANNEX

L

TARGET DAMAGE ASSESSMENT

\* \* \* \* \*  
\* Prepared by: \*  
\* Target Intelligence Unit \*  
\* XX Bomber Command \*  
\* \* \* \* \*

S E C R E T



C O N F I D E N T I A L

HEADQUARTERS  
XX BOMBER COMMAND  
Intelligence Section  
APO 493

8 January 1945

DAMAGE ASSESSMENT REPORT NO. 32

TARGET: Hankow Dock and Storage Area, Hankow, China. (30° 34' N - 114° 20' E).

GENERAL STATEMENT:

This report relates to damage resulting from a daylight incendiary attack conducted by XX Bomber Command on 18 December 1944, Mission No. 21. A total of 84 aircraft dropped approximately 511 short tons of incendiaries consisting of 121.1 tons of the M-47A2 IB, 139 tons of the M-17 Aimable Cluster and 251 tons of the M-76 IB. Assessment of damage was derived from strike photos and good quality post-attack reconnaissance obtained by the 438th Bomb Group on 23 December 1944. The report is preliminary in nature and is concerned largely with a study of the sequence of formations, the type of bomb released together with a delineation of damage resulting. A more detailed study involving details of damage and firebreak analysis is to be published by the Operational Analysis Section, this Headquarters, at a later date.

For this attack the Hankow Dock and Storage Area was divided into 4 Components, 3 of which were practically equal in size (4000' x 2400') and a 4th approximately 1/3 as large. Estimated force requirements consisted of a 12-plane formation for Component A (southern area), three 12-plane formations for Component B (central area) and a 12-plane formation each for Components C and D (northern area).

Bombing was accomplished by 10 formations varying in size from 2 to 13 aircraft over the target from 0308Z to 0408Z. Results obtained by the first 3 large formations were excellent. Fires resulting from the patterns laid down by these 3 formations (33 a/c, 139 tons M-17, 57 tons M-47A2) destroyed approximately 1/3 of Component C and virtually all of Component D. In addition several large areas outside of the Components were devastated.

A 2 plane formation following closely behind the first formation dropped in its designated Component (B) but the small weight of incendiaries carried resulted in a localized fire only.

Subsequent formations were seriously hampered by the heavy smoke arising from the fires in Components C and D. This smoke was driven over the southern regions of the target by a prevailing wind from the northwest which effectively screened the Aiming Points. Of the remaining 6 formations, totalling 49 aircraft, 1 dropped partially in Component A (objective was B Component), 1 dropped in a native hutment area northwest of Component B, 1 dropped in the Chinese Quarter of Hankow and the remaining dropped largely in open ground several miles to the northwest of the target area. Damage resulting in Component A was localized and bombs falling in the Chinese Section just north devastated several acres of a heavily built-up area. Unfortunately the two formations whose bombs fell in the Chinese Residential sections caused widespread destruction.

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In summary it may be said that only 33 of the 84 attacking aircraft accurately placed their bombs in the designated Components. Damage, however, was heavy and resulted in the virtual destruction of 40-50% of the target area. It is interesting to note that the 40-50% destruction was accomplished by only 38% of the total weight of incendiaries. The major factor contributing to the unsuccessful completion of the mission was the heavy smoke arising from the northern sector of the target area which, driven southwestward by the prevailing wind, effectively screened the southern regions from 6 formations. If it had been possible to attack the Components from south to north in sequence or had the time lag between formations been minimized, greater destruction would undoubtedly have occurred.

REFERENCES: (1) Eighteenth P.I.D. Third Phase Report No. 57.

PHOTOGRAPHY: (1) Strike Photos 4MB21, 18 December 1944, quality and scale variable.  
(2) XX Bomber Command Mission 4MR46, 23 December 1944, quality good, scale approximately 1:14000.

PREVIOUS PHOTO COVER: (1) 21FR Mission 4MC47, 22 November 1944, quality excellent, scale approximately 1:15000.  
(2) 35FR Mission 4ME34, 12 December 1944, quality good, scale approximately 1:15000.

ANNEXES: (1) Mosaic "Before".  
(2) Damage Plot.

DETAILS OF PLAN:

1. The Hankow Dock and Storage Area extends more than 3 miles along the west bank of the Yangtze River and has an average depth of almost 1/2 mile. Analysis of the target with respect to its vulnerability resulted in the decision to conduct an incendiary assault designed to neutralize the military installations in the Target Area, while at the same time to minimize the incidental damage that might be inflicted upon those areas adjoining the target and inhabited by the Chinese. Consideration of firebreaks, combustibility, area of roof coverage, structural analysis and the striking force available led to the decision to divide the target into 4 distinct Components as follows: (See Annexes)

a. Component A:

The new Japanese Storage Depot is contained in an area 1800' x 1600' located just north of the Han River. In view of the relative large fire divisions, the possibility that these new structures possess resistant roofs, the size of the target and its proximity to the Chinese Quarter on both the north and west boundary, the decision was made to use the 500# M-76 Incendiary Bomb. The excellent ballistics of the bomb, its penetratability, and immediate fire-raising ability made the M-76 the logical choice. The estimated force required was one 12-plane formation.

b. Component B:

This component consists of an area 3800' x 2400' extending along the Yangtze River north of the Chinese Quarter and separated from it by an effective fire break. This area, estimated at approximately 60% roof coverage, is composed largely of multi-storied fire-resistive structures of modern construction. Numerous buildings within this Component contained roofed areas which would afford considerable resistance to penetration. In order to provide a high assurance that

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immediate appliance fires would be initiated below the roof and in the top stories of these buildings ranging from 2-8 stories, two 12-plane formations loaded with 500# M-73 Incendiary Bombs were to be directed at this Component. In order to increase the number of probable appliance fires to be started in this area and to provide additional assurance that a fairly uniform distribution of fire would be placed within this Component, an additional 12-plane formation loaded with M-47 Incendiary Bombs was required.

c. Component C:

This Component of the target extends northward from Component B and forms a rectangle 4300' x 2400'. This area, estimated at 45% roof coverage, consists largely of 2 and 3 storied structures, closely grouped in large fire divisions bounded by effective firebreaks formed by a rectilinear system of wide streets. Although each fire division contain considerable open areas, the built-up sections within each firebreak are almost contiguous and afforded a strong possibility of spreading local conflagration within each fire division and a possibility of spread from one division to another under favorable conditions. Numerous buildings are known to house contents of high combustibility. The probable resistance to penetration was such that M-47's would penetrate the majority of the structures and come to rest in the first story below the roof. Concrete roofs appear to be present on only 3 or 4 structures within the Component. The estimated force requirement was two 12-plane formations carrying M-47 Incendiary Bombs.

d. Component D:

This target Component is located adjacent to Component C and extends northwards to the end of the dock and warehouse area. Its dimensions are 4050' x 2400'. It was estimated that this Component had a overall roof-coverage of approximately 30%. The preponderance of buildings was of 1 and 2 storied structures, although several multi-storied fire-resistive buildings were contained within the area. While the roof structure in general was not as heavy as in Components A, B and C, it offered considerable resistance. The structures within Component D were contained within small fire divisions and in most cases were not closely grouped together. The possibility of a conflagration spreading from one fire division to another was extremely low, while the probability that local conflagrations would be initiated in more than a few instances seemed doubtful. The bombardment problem therefore was to initiate an appliance fire in each fire division with a bomb which had sufficient penetrability to enter the structures. The weapon selected was the M-17 Aimable Cluster containing 110 M50 Magnesium Incendiary Bombs. The estimated force required was two 12-plane formations.

2. In order to compensate for expected bombing errors, each formation attacking a particular Component was assigned the same Aiming Point. Easily recognizable points were selected, favorably situated with the axis of attack and sufficiently far inland to minimize wastage in the Yangtze.

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3. A 292°M axis of attack was selected to provide the best approach from the IP and to minimize the interference of smoke resulting from earlier formations. A northerly wind was expected making it imperative to attack the Components in quick succession and in the following order: Components A, B, C and D.

DETAILS OF ATTACK:

- (1) First Formation: (See Area I, Annex 2).

Group : 40th  
Time : 0303Z  
Altitude : 19,100' I  
Heading : 291°M  
No. of a/c : 13  
Aiming Point: C  
Bomb Load : 1652 (57 tons) M-47A2 IB fuzed instantaneous nose and non-delay tail.

This formation was directed against Component C encountering CAVU conditions. The pattern obtained covered the Aiming Point but was centered approximately 1000' to the north. Destruction within the blacked-out areas was virtually complete ranging from 95-100% in all cases. In addition several of the unmarked buildings show signs of damage and others in the proximity of the fires may have been gutted.

- (2) Second Formation: (See Area II, Annex 2).

Group : 40th  
Time : 0309Z  
Altitude : 19,000' I  
Heading : 270°M  
No. of a/c : 2  
Aiming Point: B  
Bomb Load : 39 (9.4 tons) M-76 IB fuzed instantaneous nose and non-delay tail.

These 2 aircraft were directed against Component B encountering CAVU conditions. The bombs released from these planes had as a point of impact an area approximately 1600' north of the assigned Aiming Point. Resulting fires destroyed several large business type establishments. Further spread of fire was probably prevented by existing fire-breaks, modern fire-resistive type buildings and perhaps by the efforts of fire-fighters.

- (3) Third Formation: (See Area III, Annex 2).

Group : 444th  
Time : 0320Z  
Altitude : 21,000' I  
Heading : 285°M  
No. of a/c : 10  
Aiming Point: D  
Bomb Load : 325 (74.5 tons) M-17 Aimable Clusters fuzed to open at 5000'.

This formation was to attack Component D. CAVU conditions were encountered and no difficulty was experienced because of smoke from Areas I and III, since the prevailing wind was out of the northeast and moved south-westward over the dock and storage area effectively screening Components A, B and C. The pattern obtained was centered just south of the Aiming Point and effectively covered the area from the river inland to the

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Peking-Hankow Railway. Destruction resultant in the target area was complete. Only one building appears undamaged and that is a multi-storied, modern, fire-resistive structure which may have been gutted. Bombs falling among native hutments northwest of the target devastated several small areas.

(4) Fourth Formation: (See Area IV, Annex 2).

Group : 444th  
Time : 0338Z  
Altitude : 21,000' I  
Heading : 286°M  
No. of a/c : 10  
Aiming Point: D  
Bomb Load : 281 (64.4 tons) M-17 Aimable Clusters fuzed to open at 5000'.

This formation had Component D as its objective. CAVU conditions were encountered and no difficulty was experienced with smoke because of the prevailing winds from the north. The pattern obtained by this formation was centered approximately 1200' NNE of the Aiming Point effectively covering the target area with the exception of the eastern quarter of the Component along the bank of the Yangtze. With the exception of those buildings not blacked-out, 95-100% destruction was accomplished.

(5) Fifth Formation: (Location Unknown)

Group : 468th  
Time : 0345Z  
Altitude : 21,500' I  
Heading : 279°M  
No. of a/c : 5  
Aiming Point: B  
Bomb Load : 471 (16.3 tons) M-47A2 IB fuzed instantaneous nose and non-delay tail.

This formation had Component B as an objective. However heavy smoke from Areas I, III and IV prevented recognition of the Aiming Point and the decision was made by the leader to bomb the "Northern-quarter" of the target area. No strike photos were obtained by this formation and a positive assessment of bomb fall cannot be made. Observations by crew members varied from "very good" to "unobserved" with one claiming hits in the target area and another reporting hits "long" and to the northwest of the Component. A study of the strike and post-strike photos indicate with a considerable degree of certainty that the destruction wrought in Areas I, II and IV are due to the aforementioned formations. The probability therefore is that this formation was "over" with the bombs falling in open ground somewhere to the northwest of Area IV.

(6) Sixth Formation: (See Area V, Annex 2).

Group : 462nd  
Time : 0347Z  
Altitude : 18,000' I  
Heading : 285°M  
No. of a/c : 9  
Aiming Point: B  
Bomb Load : 263 (63.5 tons) M-76 IB fuzed instantaneous nose and non-delay tail.

This formation was directed against Component B. Despite

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heavy smoke which screened virtually all the dock and storage facilities, hits were scored in the target area but the bombs fell just north of Aiming Point A rather than B as was scheduled. Damage resulting was substantial considering the large fire divisions between the principal buildings. Two business/residential sections were heavily damaged with destruction approaching 100% in the blacked-out areas.

(7) Seventh Formation: (Not Shown on Annex).

Group : 469th  
Time : 0350Z  
Altitude : 20,500' I  
Heading : 290° M  
No. of a/c : 10  
Aiming Point : B  
Bomb Load : 1393 (47.8 tons) M-47AE IB fuzed instantaneous nose and non-delay tail.

This formation had Component B as an objective. Heavy smoke, however, prevented early recognition of the target and a late release occurred resulting in a 5300' x 1700' pattern just south of the Hankow Airdrome approximately 11000' west of the Aiming Point. Several small native hutments were destroyed, all the remaining bombs fell in open ground.

(8) Eighth Formation: (See Area VI, Annex 2)

Group : 462nd  
Time : 0354Z  
Altitude : 21,000' I  
Heading : 278° M  
No. of a/c : 4  
Aiming Point : B  
Bomb Load : 96 (23.2 tons) M-76 IB fuzed instantaneous nose and non-delay tail.

This formation had Component B as an objective. Again heavy smoke caused a late recognition of the target and a late release occurred. The bombs from these planes fell in a native hutment area approximately 4500' west of the assigned aiming point. Several large areas were devastated. Several of the bombs which fell on more modern fire-resistive buildings burned only sections of the structures.

(9) Ninth Formation: (See Area VII, Annex 2).

Group : 468th  
Time : 0404Z  
Altitude : 21,300' I  
Heading : 294° M  
No. of a/c : 9  
Aiming Point : A  
Bomb Load : 246 (59.4 tons) M-76 IB fuzed instantaneous nose and non-delaying tail.

This formation was directed against Component A. Heavy smoke prevented recognition of the target with the result that a late release occurred. Bombs from these aircraft fell in the Chinese section of Hankow approximately 5000' west of the Aiming Point. Damage resulting was heavy with 4 large and several small areas devastated.

C O N F I D E N T I A L