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Tactical Mission REPORT

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By authority of
C.G., Twentieth Air Force

18 Mar 49 *RLS*

(Date)

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MISSION NO. 257 261

FLOWN 9 JUL 1945

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HEADQUARTERS
XXI BOMBER COMMAND
APO 334

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F O R E W O R D

Mission 256 was a mining operation
that will be reported in a separate
Tactical Mission Report which receives
only limited distribution.

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HEADQUARTERS
XXI BOMBER COMMAND
APO 234

TACTICAL MISSION REPORT

Field Order No. 97

Missions No. 257 through 261

Targets on the Island of Honshu,

Japan

9/10 July 1945

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Prepared by: A-2 Section
XXI Bomber Command

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By Auth. of the C.G.
XXI Bomber Command.
9 July 45 J.D.G.
Date Initials

HEADQUARTERS
XXI BOMBER COMMAND
APO 234

SUBJECT: Report of Attacks on 4 Urban Areas and 1 Oil Refinery
on the Island of Honshu on 9/10 July 1945.

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

1. IDENTIFICATION OF MISSIONS:

a. Field Order Number 97, Headquarters XXI Bomber Command, dated 8 July 1945, directed the 58th, 73rd, 313th, 314th and 315th Bombardment Wings to attack 4 urban and 1 industrial targets on Honshu in Missions Number 257 through 261.

b. Targets Specified:

(1) Primary Visual and Radar Targets:

<u>Mission</u>	<u>Wing</u>	<u>Target</u>
257	58th	Sendai Urban Area
258	73rd	Sakai Urban Area
259	313th	Wakayama Urban Area
260	314th	Gifu Urban Area
261	315th	Utsube River Oil Refinery (Target 90.20-1684)

(2) No secondary or last resort targets were specified.

2. STRATEGY AND PLANS OF OPERATION:

a. Selection of D-Day: Weather conditions were the principal factor in the selection of the 4 urban areas for night incendiary attack. Planning of these missions was similar to that of other recent XXI Bomber Command strikes, each of 4 wings being assigned to attack a city by radar bombing. The size, location, and light defenses of the Utsube River Oil Refinery made it an excellent choice for a night radar synchronous bombing attack.

b. Importance of Targets:

(1) Mission Number 257: Sendai is a transportation center of northern Honshu, with railroads running north-south and east-west carrying coal and lumber. Its industries include locomotive repair shops, marshalling yards south of the city, a new 280-acre factory (possibly aircraft assembly) on the eastern outskirts, an aircraft parts plant, a large shell-filling and powder plant in the northeast section, and a military barracks and an academy across Hirose River to the west.

(2) Mission Number 258: The chief value of Sakai lies in its proximity to Osaka and the probable integration of its industry with that of the parent city. The city also houses workers of the Osaka war plants. Because of the damage to the Osaka plants, the

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war plants of Sakai are important as possible dispersal points.

(3) Mission Number 259: Wakayama is a city of 195,000 population that is now probably integrated with the Japanese war economy. It has 3 new plants, including probable heavy ordnance and chemicals. Wakayama is also a junction point of steam and electric railroad lines to Osaka, to cities of the south, and inland.

(4) Mission Number 260: Gifu is the site of 10 large textile mills reported to be converted to making component parts for the Kagamigahara aircraft plants 5 miles to the south. Gifu also probably houses a good percentage of the 25,000 employees at these plants. The built-up area between the railroad yards north to the Nagara River is congested, with a population density of approximately 50,000 per square mile. Destruction of the city would have the triple effect of destroying or damaging aircraft component parts plants, dehousing large numbers of employees at the important Kagamigahara Plants, and disrupting mainline transportation facilities.

(5) Mission Number 261: The Utsube River Oil Refinery; originally on a par with oil production centers at Tokuyama and Otake, now ranks as the leading center of aviation gasoline production in Japan proper. Its installations include facilities for synthetic oil refining (estimated to be 37 per cent of the total Japanese synthetic production), natural oil refining (output not known), production of tetra-ethyl lead (estimated to be 25 per cent of the Japanese total) and extensive oil storage.

c. Details of Planning--Operational:

(1) Bombing Plans:

(a) Determination of Bomb Load:

1. Sendai Urban Area--Mission Number 257:

a. Four Groups of the 58th Wing were scheduled to strike this target, 2 Groups carrying M47 incendiary bombs and 2 Groups carrying M17 incendiary clusters. The main force was to be preceded by 12 pathfinder aircraft carrying M47 incendiary bombs.

b. The target included mixed wooden and plaster buildings in the residential area, with numerous steel and light concrete structures which required moderate penetration. The M47 bombs were selected for the pathfinder force and the first half of the main force to insure starting numerous appliance fires before defenses could overcome the incendiary effect. The M17 clusters were selected for their adequate fire-setting ability, proper penetration, and multiplicity of hits expected within the relatively small fire divisions. A normal effort force of 4 Groups was expected to place sufficient tonnage on the target area to destroy it.

c. Fuzing: The M47 incendiary bombs were to have instantaneous nose fuzes and the M17 incendiary clusters were to be fuzed to open 5000 feet above the target.

d. Intervalometer Settings: The M47 bombs were to be released at 100-foot intervals, and the M17 clusters were to be dropped at 50-foot intervals, settings which were selected to obtain maximum uniform density on the target area.

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2. Sakai Urban Area--Mission Number 258:

a. Four Groups of the 73rd Wing were to attack this target, 2 Groups carrying M47 incendiary bombs and 2 Groups carrying clusters with M69 bombs. Twelve aircraft were designated as pathfinders to precede the main force and were to carry M47 incendiary bombs.

b. Considerations and reasons for munition selections, and fuzings were the same as those listed for the Sendai urban area attack. M69's were also used because the city was not as highly industrialized as others.

c. Intervalometer Settings: Intervalometer settings of 100 feet for the M47 incendiary bombs and 50 feet for the M69 clusters were selected to achieve an adequate density of approximately 225 tons per square mile on the target area.

3. Wakayama Urban Area--Mission Number 259:

a. Three Groups of the 313th Wing were scheduled to attack this target. One Group was to carry M47 incendiary bombs and 2 Groups were to carry M17 incendiary clusters. The main force was to be preceded by 12 pathfinders carrying M47 incendiary bombs. Considerations and reasons for munition selections, fuzings and intervalometer settings were the same as those listed for the Sendai urban area attack.

4. Gifu Urban Area--Mission Number 260:

a. Four Groups of the 314th Wing were directed to attack this target, 2 Groups carrying M47 incendiary bombs and 2 Groups carrying clusters of M69 bombs. Twelve pathfinder aircraft carrying M47 incendiary bombs were to precede the main force. Considerations and reasons for munition selections, and fuzings and intervalometer settings were the same for this mission as those listed for the Sakai urban area strike.

5. Utsube River Oil Refinery--Mission Number 261:

a. Approximately 60 aircraft of the 315th Wing were scheduled to attack this target, carrying 500-pound General Purpose bombs.

b. The target installations were both storage and refinery types and were dispersed within the target area. The 500-pound general purpose bomb was recommended since it was believed that the larger number of bomb hits and fragments made possible by the use of this size bomb should result in maximum damage to both manufacturing and storage facilities.

c. Fuzing: The bombs were to have .025 second delay nose and non-delay tail fuzes. It was believed that these fuzings would give bomb burst just above floor level and would be very effective against the refinery and shop installations of this target. The non-delay tail fuze was selected to give ground level burst to near misses and to obtain maximum blast and fragmentation effect against the refinery installations which constituted the major facilities of the target. Since the majority of the storage tanks in each area were small it was believed that the impact initiation of the non-delay tail fuze would result in sufficient crushing effect to destroy the tanks receiving direct hits and therefore delay fuzing, which would allow penetration of the tanks, was unnecessary.

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d. The bombs were to be released at 25-foot intervals.

(b) Bombing: (For mean points of impact see Annex A, Part.III.)

1. Missions Number 257, 258, 259 and 260 were planned in the same manner as other night incendiary strikes of the XXI Bomber Command. The choice of the axes of attack and altitudes was determined by the best radar approaches and altitudes for radar bombing of these particular targets.

2. Mission Number 261 was planned to take advantage of the coastal features of Nagoya Bay on which the target was located. This made an excellent area for radar navigation and target identification.

3. Bombing altitudes, axes of attack, and other pertinent data were as follows:

a. 58th Wing (Reference XXI Bomber Command
Litho-Mosaic, Sendai 90.10 Urban)

Altitude: 10,000 - 10,800 feet

Axis of Attack: 350 degrees true

Initial Point: 3749N - 1405930E

Mean Point of Impact: 057111

Length of Run: 33 miles

Time of Run: 8 minutes, 15 seconds

Force: 4 Groups

b. 73rd Wing (Reference XXI Bomber Command
Litho-Mosaic, Sakai Area 90.25 Urban)

Altitude: 10,000 - 10,800 feet

Axis of Attack: 68 degrees true

Initial Point: 3419N - 1344130E

Mean Point of Impact: 081079

Length of Run: 49 miles

Time of Run: 11 minutes

Force: 4 Groups

c. 313th Wing (Reference XXI Bomber Command
Litho-Mosaic Wakayama Area 90.25 Urban)

Altitude: 10,000 - 10,800 feet

Axis of Attack: 42 degrees, 30 minutes true

Initial Point: 3351N - 13448E

Mean Point of Impact: 077102

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Length of Run: 38 miles

Time of Run: 8 minutes, 45 seconds

Force: 3 Groups

d. 314th Wing (Reference XXI Bomber Command
Litho-Mosaic, Gifu Area 90.20 Urban)

Altitude: 15,000 - 15,800 feet

Axis of Attack: 83 degrees true

Initial Point: 3520N - 13605E

Mean Point of Impact: 061062

Length of Run: 41 miles

Time of Run: 8 minutes, 40 seconds

Force: 4 Groups

e. 315th Wing (Reference XXI Bomber Command
Litho-Mosaic, Yokkaichi, Utsube River Oil Refinery, Target No. 90.20 -
1684)

Altitude: 15,000 - 16,000 feet

Axis of Attack: 320 degrees

Initial Point: 343430N - 13701E

Mean Point of Impact: 068019

Length of Run: 24 miles

Time of Run: 6 minutes

Force: 60 aircraft

(2) Navigation:

(a) Sendai Urban Area - Mission Number 257:

Base to Iwo Jima
to 3550N - 14110E
to

3749N - 1405930E

to

Target

to
3500N - 14130E

to
Iwo Jima
to
Base

Tactical Doctrine

This dead reckoning point was selected to miss the Chosi Point Flak area.

The initial point selected was a small jutting piece of land northeast of Koriyama which was easily identified for the best radar approach to the target.

A right turn was designated after the attack.

This dead reckoning point was selected to miss incoming aircraft east of Chosi Point.

Tactical Doctrine

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(b) Saiki Urban Area - Mission Number 258:

Base to Iwo Jima	Tactical Doctrine
to	
3331N - 13346E	Landfall was to be a jutting point of land east of Kochi and making almost a straight route into the target through the initial point.
to	
3419N - 134413OE	The initial point was an easily identified point on the west side of Owaji Shima making the best approach to the target.
to	
Target	A right turn was designated after hitting the target.
to	
Iwo Jima	Tactical Doctrine
to	
Base	

(c) Wakayama Urban Area - Mission Number 259:

Base to Iwo Jima	Tactical Doctrine
to	
331530N - 13410E	The easily identified southern tip of Shikoku was selected as landfall.
to	
3351N - 13448E	Initial point was to be Benton Jima, an easily identified island off the western coast of Shikoku.
to	
Target	A right turn was designated after the attack on the target.
to	
Iwo Jima	Tactical Doctrine
to	
Base	

(d) Gifu Urban Area - Mission Number 260:

Base to Iwo Jima	Tactical Doctrine
to	
3353N - 13608E	Landfall was to be the easily identified point of land southwest of Nagoya.
to	
3520N - 13605E	Initial point was to be Funoki Saki on the western side of Biwa Ko Lake to make the best radar approach to the target.
to	
Target	
to	
3528N - 13710E	This point was selected to avoid flak areas.
to	
343730N - 13803E	This point was designated as landsend
to	
Iwo Jima	Tactical Doctrine
to Base	

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(e) Utsube River Oil Refinery - Mission Number 261:

Base to	
Iwo Jima	Tactical Doctrine
to	
343430N - 13701E	The initial Point was to be Irako Saki, easily identified point on the entrance to Nagoya Bay, which was to be used for land-fall and initial point.
to	
Target	A left turn was specified after the attack to avoid flak areas.
to	
Iwo Jima	Tactical Doctrine
to	
Base	

(3) Flight Engineering:

(a) Flight Plan: Altitudes and speeds, except for bombing runs and compression of striking forces were to be for maximum fuel economy and safety. No assemblies were to be effected.

(b) Loading:

1. Fuel reserve data indicated that the 73rd, 313th, 314th and 315th Wings would require no bomb bay tanks for a total fuel load of approximately 6600 gallons. The 58th Wing was to carry 1 bomb bay tank.

2. No maximum or minimum loads were specified.

3. Potential bomb loads were as follows:

<u>Wing</u>	<u>Potential Capacity</u> (pounds)	<u>Expected Average</u> (pounds)
a. 58th	11,000	11,000
b. 73rd	17,000	15,000
c. 313th	17,000	14,000
d. 314th	16,000	15,000
e. 315th	18,000	16,000

4. Ammunition load was estimated to be 300 pounds.

(4) Radar: (For radar approach charts see Annex A, Part VI)

(a) The initial point selected for Sendai is easily identified since the route from Choshi Point slides along the coast and offers many checkpoints. The city signal of Sendai can be identified from the initial point. Two aircraft factories, 1 east of the city and 1 just south, give bright returns and aid in identifying the city return.

(b) Sakai is the southern section of the city return of Osaka. Because of the absence of any good reference points to determine the Sakai return and to aid in killing course, it was decided that a downwind run with a low drift factor would give the best results. All operators would be able to obtain excellent wind runs from the prominent peninsula on the coast of Kii-Suido. Fixed offset or offset synchronous bombing could be used, employing the harbor for an offset release line.

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(c) The best approach to Wakayama is from the west or southeast. Heavy mountain shadows prevent the use of an initial point in the eastern section. By using the southeast tip of Shikoku as a departure point, aircraft have a straight course into the target. The initial point, Benton-Jima, is easily identified. The target is fairly large and gives an excellent radar return. A small peninsula, a few miles southeast of the city, is a good offset check point which could be used to kill drift and course into the center of the city.

(d) Gifu gives the best radar return at an altitude of 12,000 feet. The best initial points are from a westerly sector. A downwind run from the west would eliminate the dangers and bombing errors caused by the heat thermals. The small hills on the northeast tip of the city give some return and shadow, but, with careful study, operators could distinguish between the 2 returns. The altitude was raised to 15,000 feet to permit good radar synchronous bombing to be accomplished.

(e) The Utsube River Oil Refinery is located on the coast of Nagoya Bay on a promontory south of Yokkaichi. From the peninsula initial point the approach to the target was to be from water to land, which would give the best return. A good check for course was to be along the coast of Chita Hanto peninsula between Utsumi and Toyohama.

(5) RCM:

(a) Four special jamming airplanes were to be used for the attack on Sakai because of the intense flak in that area. These planes were to orbit the point 3431N - 13524E with a 10-mile radius at altitudes of 14,000 to 17,000 feet. The 72-84 and 190-210 megacycle regions were to be barrage jammed and spot jamming was to be employed against any gun-laying or searchlight radars that appeared outside the barrage. Additional quantities of rope were to be carried by these special aircraft.

(b) The other 3 urban area targets were believed to have meager flak and searchlight defenses and no special RCM airplanes were recommended. All strike aircraft were to carry electronic jammers tuned to barrage the 72-84 and 190-210 megacycle regions. Rope was to be carried and dispensed in accordance with existing regulations.

(c) Search of enemy radars from 20-3000 megacycles was to be continued and enemy communications were to be recorded.

(d) Aircraft attacking the Utsube Oil Refinery were to carry rope to be dispensed when protection was needed from radar-controlled flak and searchlights. Search and jamming could not be conducted because 315th Wing planes did not have RCM equipment.

(6) Air-Sea Rescue: (See Annex A, Part VIII for chart)

(a) Naval: The Navy was furnished with details of these missions and the following air-sea rescue facilities were made available:

1. Nine submarines were to be stationed during the entire missions at 3520N - 14110E, at 3440N - 14010E, at 3000N - 14125E, at 3400N - 13815E, 3200N - 13855E, at 3000N - 13935E, at 3300N - 13625E, at 3130N - 13720E, and at 3000N - 13815E.

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2. Four surface craft were to be stationed during the entire missions at 2830N - 13910E, at 2800N - 14120E, at 2630N - 14030E, and at 1800N - 14430E.

3. Thirteen Dumbos were assigned to the following points at the times indicated to remain on stations until all strike aircraft passed on the return route: at 3520N - 14110E from 091520Z, at 3000N - 14125E from 091700Z, at 3200N - 13855E from 091525Z, at 3000N 13935E from 091605Z, at 3130N - 13720E from 091435Z, at 3000N - 13815E from 091500Z, at 3300N - 14130E from 091600Z, at 2830N - 13910E from 091535Z, at 2800N - 14120E from 091740Z, at 2630N - 14030E from 091615Z, at 2000N - 14330E from 091830Z, at 1800N - 14430E from 091930Z, and at 1600N - 14520E from 091945Z.

(b) Army: This Command assigned 5 Super-Dumbos to the following points at the times indicated to remain on stations until all strike aircraft passed on the return route: at 3400N - 13815E from 091445Z, at 3300N - 13625E from 091400Z, at 3300N - 13625E from 091400Z, at 3810N - 14110E from 091445Z, and at 3810N - 14110E from 091445Z.

d. Details of Planning - Intelligence:

(1) Enemy Fighter Opposition:

(a) Sendai (Mission Number 257): It was estimated that approximately 15 aircraft would be airborne, probably offering no opposition.

(b) Sakai (Mission Number 258): It was believed that 20-25 enemy fighters would furnish negligible opposition to this mission.

(c) Wakayama (Mission Number 259): Approximately half of the fighters opposing the attack against Sakai were believed to be capable of being diverted against B-29's attacking Wakayama.

(d) Gifu (Mission Number 260): Approximately 10 to 15 aircraft were expected to offer negligible opposition to this strike.

(e) The Utsube River Oil Refinery, Yokkaichi (Mission Number 261): An estimated 25 to 35 enemy fighters were expected to furnish negligible to weak opposition to this attack.

(2) Enemy Antiaircraft:

(a) Mission Number 257 - Sendai Urban Area: The defenses of Sendai were believed to be extremely light, consisting of only 4 heavy antiaircraft guns and 10 medium antiaircraft weapons. Consequently, flak was not a consideration in planning the axis of attack. Routes were planned to avoid other flak defenses and a base altitude of 10,000 feet was specified.

(b) Mission Number 258 - Sakai Urban Area:

1. Antiaircraft defenses: Since Sakai lies within the defense boundaries of Osaka, it was believed that 135 heavy antiaircraft guns and 35 searchlights would be effective against the B-29's on the planned approach.

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E. Axis of Attack and Altitude: An approach from the west-southwest was planned. This was an optimum approach from a flak standpoint since it was downwind, avoided other flak areas, and provided for most of the bomb run to be over water. The break-away designated from the target was to the southeast to avoid other flak areas. The planned altitude of attack was 10,000 feet.

(c) Mission Number 259 - Wakayama Urban Area: No antiaircraft defenses had been pinpointed from photographs of the Wakayama area but weak and inaccurate flak had been encountered there. The planned altitude of 10,000 feet was expected to result in nil to meager and inaccurate flak. The route was planned to avoid other flak areas.

(d) Mission Number 260 - Gifu Urban Area:

1. Antiaircraft Defenses: No antiaircraft defenses appeared on photographs of Gifu, but at Kagamigahara, just east of Gifu, there were believed to be 18 heavy antiaircraft guns, 49 medium antiaircraft weapons, and 4 searchlights.

2. Axis of Attack and Altitude: An approach from the west was planned with a breakaway to the northeast on leaving the target. This was expected to avoid about half of the defenses at Kagamigahara. At the planned attack altitude of 15,000 to 15,800 feet it was expected that medium antiaircraft fire would not be effective and that only meager heavy flak would be encountered.

(e) Mission Number 261 - Utsube River Oil Refinery: There were believed to be only 2 heavy antiaircraft guns in the Yokkaichi area. At the planned attack altitude of 15,000 to 16,000 feet only meager and inaccurate flak was expected. Flak was not a factor in planning except in determining a route to and from the target to avoid other flak areas.

3. EXECUTION OF THE MISSIONS:

a. Take-off:

(1) Take-off was accomplished as follows:

<u>Mission No.</u>	<u>Wing</u>	<u>Pathfinders</u>	<u>Main Force</u>	<u>First Off</u>	<u>Last Off</u>
257	58th	12	119	090703Z	090841Z
258	73rd	12	112	090906Z	091038Z
259	313th	12	97	090800Z	090848Z
260	314th	12	123	090700Z	090809Z
261	315th	—	64	090645Z	090739Z
	TOTAL	48	515*	090645Z	091038Z

* This total does not include 9 Superdumbo and weather reconnaissance aircraft.

b. Route Out: Navigation for these missions was excellent. Only 1 aircraft failed to bomb the primary target because of navigational error.

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c. Over Targets:

(1) Mission Number 257:

(a) Primary Target: One hundred twenty three aircraft dropped 911.3 tons of bombs on the Sendai urban area from 091503Z to 091705Z at altitudes ranging from 10,000 to 10,700 feet.

(b) Targets of Opportunity: One aircraft dropped 6.3 tons of bombs on Katsuura.

(2) Mission Number 258:

(a) Primary Target: One hundred sixteen aircraft (including weather aircraft) dropped 778.9 tons of bombs on the Sakai urban area from 091633Z to 091806Z at altitudes ranging from 10,000 to 11,350 feet.

(b) Targets of Opportunity: Two aircraft dropped 13.3 tons of bombs on Kochi and 1 aircraft dropped 6.3 tons of bombs on Susaki.

(3) Mission Number 259:

(a) Primary Target: One hundred eight aircraft dropped 800.3 tons of bombs on the Wakayama urban area from 091458Z to 091648Z at altitudes of from 10,200 to 11,600 feet.

(4) Mission Number 260:

(a) Primary Target: One hundred twenty-nine aircraft dropped 898.8 tons of bombs on the Gifu urban area from 091434Z to 091620Z at altitudes ranging from 14,720 to 17,700 feet.

(b) Targets of Opportunity:

1. One aircraft dropped 6.3 tons of bombs on Shingu.

2. One aircraft dropped 2.4 tons of bombs on Nakazumi. This aircraft also bombed the primary target.

(5) Mission Number 261:

(a) Primary Target: Sixty-one aircraft dropped 468.7 tons of bombs on the Utsube River Oil Refinery from 091340Z to 091438Z at altitudes ranging from 15,550 to 16,950 feet.

(b) Targets of Opportunity: One aircraft dropped 8 tons of bombs on Honshu Island.

(6) Twenty-one aircraft were non-effective on these 5 missions.

d. Route Back: There were no difficulties encountered on the route back. Twenty-one aircraft landed at Iwo Jima.

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e. Landing: Aircraft landed at bases as follows:

<u>Mission</u>	<u>Wing</u>	<u>First Aircraft</u>	<u>Last Aircraft</u>
257	58th	092158Z	100123Z
258	73rd	092200Z	100054Z
259	313th	092026Z	092303Z
260	314th	092059Z	092343Z
261	315th	092015Z	092237Z
TOTAL		092015Z	100123Z

f. Two aircraft were lost. One crashed on take-off and the other caught fire on the return trip. All members of both crews were saved.

g. Operational Summary:

(1) Navigation: (See Annex A, Part I, for track chart)

(a) Navigation on these missions was considered excellent. Long range navigation was accomplished by individual aircraft proceeding to primary targets. Target area wind determination and navigation were accomplished by radar.

(b) Time control was good. Approximately 90 per cent of all aircraft were over the target in 70 minutes.

(2) Bombing: (See Annex A, Part II, and Part III, for details) Bombing on the missions against Sendai, Sakai, Wakayama, and Gifu was chiefly visual. Aircraft attacking the Utsube River Oil Refinery bombed primarily by radar.

(3) Flight Engineering: (See Annex A, Part IV, for charts)

(a) Narrative of the missions as flown:

1. Cruise to the mainland: Individual climbs were made immediately after take-off at altitudes between 4000 and 8000 feet where the initial cruise was flown. No assemblies were made. Compression of the forces was effected by varying cruise altitudes and air speeds.

2. Bomb Run: Bombing was conducted by individual aircraft at altitudes between 10,000 and 17,700 feet.

3. Return to Base: Return to base was conducted by individual aircraft, cruising at 14,000 to 16,000 feet for minimum fuel consumption, and descending into the traffic pattern.

(b) Comments: No airplanes carried bomb bay tanks. All Wings carried full loads of bombs except the 315th which carried an average of 77 per cent of full load capacity and landed with an average of 1233 gallons of fuel per aircraft.

(4) Radar: (See Annex A, Part V, for details)

(a) Two hundred thirty-five aircraft made radar runs.

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(b) Fifty-two aircraft made radar runs with visual correction.

(c) Three aircraft used visual sighting on reference or offset aiming points.

(d) Two hundred fifty-four aircraft used visual sighting only.

(5) Gunnery: (See Annex A, Part VII, for details) There were no outstanding problems during these operations.

(6) Air-Sea Rescue: There were no ditchings on these missions. The crew of 1 B-29 bailed out west of Saipan on the return trip when fire broke out following the backfire of its Number 4 engine. A strike aircraft spotted the sea markers of the survivors and immediately made contact with a destroyer which rescued all crew members within 3 hours after bailout.

i. Communications:

(1) Radar Counter Measures: (See Annex C, Part I, for details). Twenty-five RCM observers participated and logged a total of 61 intercepts.

(2) Radio: (See Annex C, Part II, for details) No unusual communications problems were encountered and net discipline was good.

j. Intelligence Summary:

(1) Enemy Air Opposition: (See Annex D, Part I, for details) Only 11 attacks were made against B-29's on the 5 missions. Four aircraft were damaged by these attacks. There were no claims.

(2) Enemy Antiaircraft: (See Annex D, Part II, for details) Thirteen aircraft were damaged by flak.

(3) Damage Assessment: (See Annex D, Part III, for details)

(a) On Mission Number 257, 1.22 square miles of Sendai (27 per cent of the built-up area) were destroyed.

(b) On Mission Number 258, 1.02 square miles of Sakai (44 per cent of the built-up area) were destroyed.

(c) On Mission Number 259, 2.1 square miles of Wakayama (52.5 per cent of the built-up area) were destroyed.

(d) On Mission Number 260, 1.93 square miles of Gifu (74 per cent of the built-up area) were destroyed.

(e) On Mission Number 261, 292,610 square feet (15.4 per cent of the total roof area) of Utsube River Oil Refinery were damaged. Tanks with a capacity of 50,370 barrels (2.4 per cent of the original refinery capacity) were destroyed.

Curtis E. LeMay
CURTIS E. LeMay
Major General, U.S.A.
Commanding

S E C R E T

ANNEX

A

OPERATIONS

Part I - Navigation Track Chart

Part II - Bombing

Part III - Mean Points of Impact

Part IV - Flight Engineering Chart

Part V - Radar

Part VI - Radar Approach Charts

Part VII - Gunnery

Part VIII - Air-Sea Rescue Chart

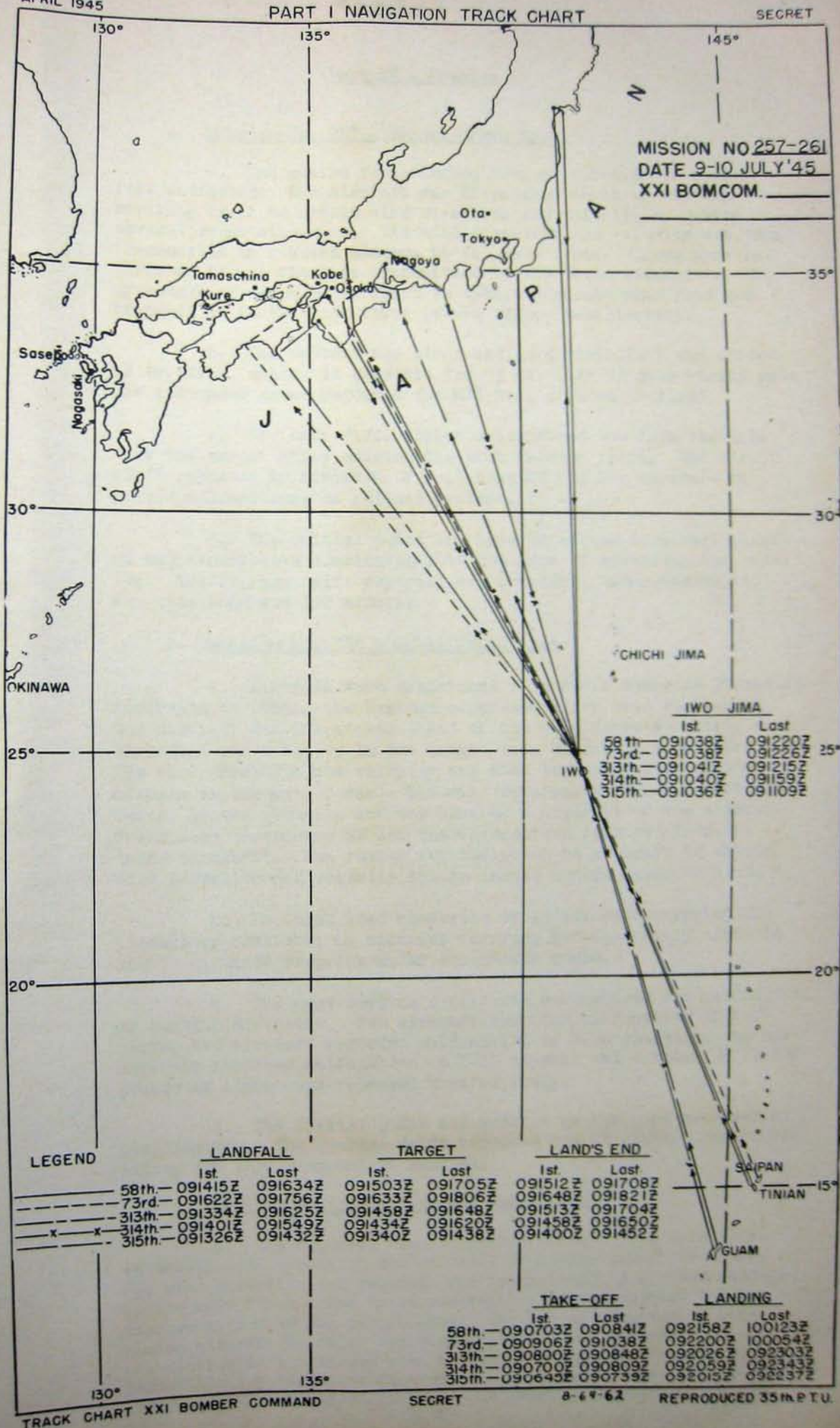
Missions No. 257, 258, 259, 260 and 261

9/10 July 1945

APRIL 1945

PART I NAVIGATION TRACK CHART

SECRET



SECRET

Part II - Bombing

1. Mission No. 257 - Sendai Urban Area:

a. The entire force bombed from an altitude of 10,000 feet indicated. One aircraft was dispatched ahead of the main striking force to obtain wind direction and velocity by making several radar wind runs. The wind direction and velocity was then transmitted in a coded message to the main force. Crews were instructed to use the data transmitted by the "wind aircraft". The procedure of using an aircraft to obtain accurate wind runs and transmit it to the main force proved highly satisfactory.

b. The weather was clear and good visibility was afforded by fires, making it possible for 93 aircraft to make visual runs. The returning crews reported the MPI well covered by fires.

c. The only difficulties encountered was from thermals over the target after passing the bomb release point. One aircraft reported malfunction of T-19 adapter and six aircraft reported malfunctions of release systems.

d. The initial point and axis of attack were well planned and contributed considerably to the ease of executing the mission. The average drift reported was 4° right. Compressibility for this wing was 122 minutes.

2. Mission No. 258 - Sakai Urban Area:

a. Aircraft were dispatched from their bases at 30-second intervals to obtain the minimum compressibility over the target. One aircraft was dispatched ahead of the main force to obtain wind direction and velocity in the target area by making radar wind runs. The wind direction and velocity was then transmitted in a coded message to the main force. The wind obtained by the aircraft assigned, proved accurate and was used by a majority of the aircraft. Crews were instructed to use the information received from the "wind aircraft". The reason for assigning an aircraft to obtain wind direction and velocity was to insure a more accurate wind.

b. The bomb load consisted of 20 aircraft carrying E46 incendiary clusters, 41 aircraft carrying E36 incendiary clusters and 64 aircraft carrying M47A2 incendiary bombs.

c. The most serious difficulty encountered was malfunction of bombing equipment. Two aircraft reported malfunction of bomb racks, two aircraft reported malfunction of B-10 shackles, and one aircraft reported malfunction of T-19 adapter and a total of 22,200 pounds of bombs were released ineffectively.

d. The initial point and axis of attack were reported as satisfactory. The average drift reported was 2° right. Compressibility for this wing was 90 minutes.

3. Mission No. 259 - Wakayama Urban Area:

a. One aircraft was dispatched ahead of the main force to obtain wind direction and velocity by making radar wind runs. The wind direction and velocity was transmitted in a coded message to the main force. The "wind aircraft" also transmitted the weather condition in the target area. The use of a master of ceremonies aircraft to relay the wind direction and velocity and also the weather in the target area is deemed essential, because it is impossible for all aircraft to obtain an accurate wind run in one attempt on the specified route to the initial point. The use of

S E C R E T

this procedure has shown a marked improvement in the compressibility for the wing.

b. The bomb load consisted of 38 aircraft carrying M17A1 incendiary clusters and 71 aircraft carrying M47A2 incendiary bombs.

c. The weather in the target area was CAVU and the majority of the aircraft bombed visually. The mission was accomplished as briefed. All aircraft bombed the primary and reported excellent results. Five aircraft reported malfunction of B-10 shackles, 2 aircraft reported malfunction of A-4 release, 2 aircraft reported malfunction of A-2 release, and 2 aircraft reported malfunction of T-19 cluster adapter.

d. The initial point and axis of attack were considered highly satisfactory. The average drift reported was 5° right. Compressibility for this wing was 110 minutes.

4. Mission No. 260 - Gifu Urban Area:

a. A master of ceremonies aircraft was dispatched ahead of the main force to obtain wind direction and velocity at the target and transmit it to the main force in a coded message. The master of ceremonies aircraft also transmitted the weather condition at the target area. The procedure of using a master of ceremonies aircraft ahead of the main force is considered highly satisfactory. Weather in the target area was CAVU and the majority of the bombing was accomplished by visual sighting. Crews reported results of bombing as excellent.

c. The only difficulty encountered were malfunctions of bombing equipment. Three aircraft reported malfunction of bomb racks, 3 aircraft reported malfunction of B-10 shackles and 2 aircraft reported malfunction of arming wires. One aircraft reported a malfunction of undetermined cause.

d. The initial point and axis of attack were reported as satisfactory and well planned. The average drift reported was 7° right. Compressibility for this wing was 106 minutes.

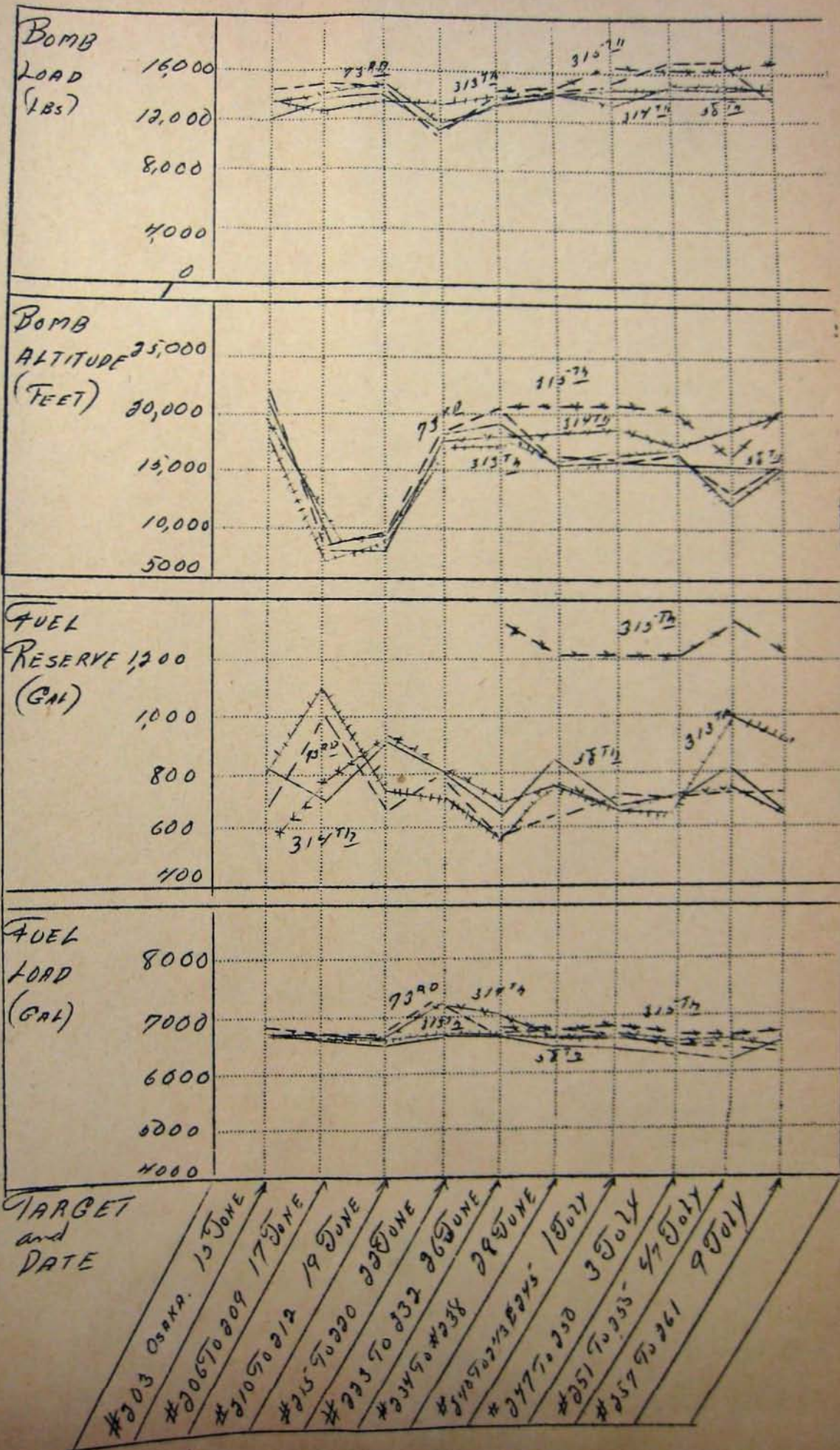
5. Mission No. 261 - Utsube River Oil Refinery:

a. Bombing was accomplished primarily by radar. Ten aircraft bombed by visual means when the radar equipment became inoperative.

b. The greatest difficulty encountered was malfunction of bomb bay door relay fuse. Two aircraft aborted and jettisoned bombs when engine failure occurred prior to reaching the target area.

c. The IP and axis of attack were reported as highly satisfactory, however, several aircraft failed to make the briefed axis of attack good. The average drift reported was 2 degrees right. Compressibility for the wing was 59 minutes.

FLIGHT ENGINEERING CHART



Part V - Radar

1. Radar Bombing AN/APQ-13:

- a. Number of sets operative at take-off: 491
- b. Number of sets operative over target: 469 (98%)
- c. Number of sets operative on landing: 460
- d. Number of planes using azimuth stabilization: 364 (77.6%)
- e. Number of set failures in lead aircraft: None.
- f. Slight interference from other sets was encountered.
- g. Average maximum range (in nautical miles) of targets:
 - 76 - 5,000 to 10,000 feet.
 - 72 - 10,000 to 15,000 feet.
- h. Average maximum range (in nautical miles) of targets:
 - 121 - 5,000 to 10,000 feet.
 - 148 - 10,000 to 15,000 feet.
- i. Average maximum range of Japanese Coast: 60 nautical miles.
- j. Remarks:
 - (1) The briefing material was reported as excellent. The 58th Wing reported short range scope photos were needed, as their target, Sendai, broke up at short ranges.
 - (2) Methods of release:
 - (a) Radar direct non-synchronous.
 - (b) Radar direct synchronous.

2. Radar Bombing AN/APQ-7:

- a. Number of sets operative on take-off: 60.
- b. Number of sets operative over the target: 57.
- c. Number of sets operative on landing: 56.
- d. Average maximum range of radar beacon reception: 120 nautical miles at 11,000 feet.
- e. Average maximum range of radar targets: 60 nautical miles at 15,000 feet.
- f. Average maximum range of Japanese Coast: 65 nautical miles.
- g. Equipment failures: 3.
- h. Remarks:

(1) There were 51 individual radar releases; 6 bombed visually; and 4 made direct radar releases.

- (2) Landfall and IP were easily identified.
- (3) Comments on briefing were satisfactory.
- (4) Aiming point was identified at 30 nautical miles.

3. Radar Navigation APN 4 and APN 9:

- a. Number of fixes reported: 3278.
- b. Antenna used and useable maximum range (in nautical miles) were as follows:

	Fixed	Trailing	Command
(1) Ground-Wave	487	667	556
(2) Sky-Wave	1175	1325	1319

- c. Inoperative sets: 14.

4. IFF - SCR 695:

- a. Sets tuned on and off as per SOP.
- b. Number of times checked: average 38 times.
- c. No malfunction was reported.

5. Absolute Altimeter - SCR-718:

- a. Number of operative sets: 233.
- b. Number of inoperative sets: 2.

S E C R E T

Part VII - Gunnery

1. No. of A/C firing: 8

2. Average turret load:

<u>UF</u>	<u>UA</u>	<u>T</u>	<u>LA</u>	<u>LF</u>
437.5	293.75	366.6	293.75	300
(315th Wg-1425rds)				

3. Average No. of rounds fired in Combat per turret:

$\frac{UF}{0}$	$\frac{UA}{90}$	$\frac{T}{140}$	$\frac{LA}{0}$	$\frac{LF}{0}$
----------------	-----------------	-----------------	----------------	----------------

4. No. of rounds fired in combat: 330.

5. No. of rounds used for test firing: 4475.

6. Guns loaded: 58th Wing 73rd Wing 313th Wing 314th Wing 315th Wing
Hot Cold Hot Hot Cold

7. Malfunctions: C.F.C. Servo had elevation tube cut. Cal. .50 M.G.
Belt twisted,
weak firing spring and
30 APG-malfunctions.

8. Percentage of equipment operative:

C.F.C.

99.86%

CAL. .50 M.G.

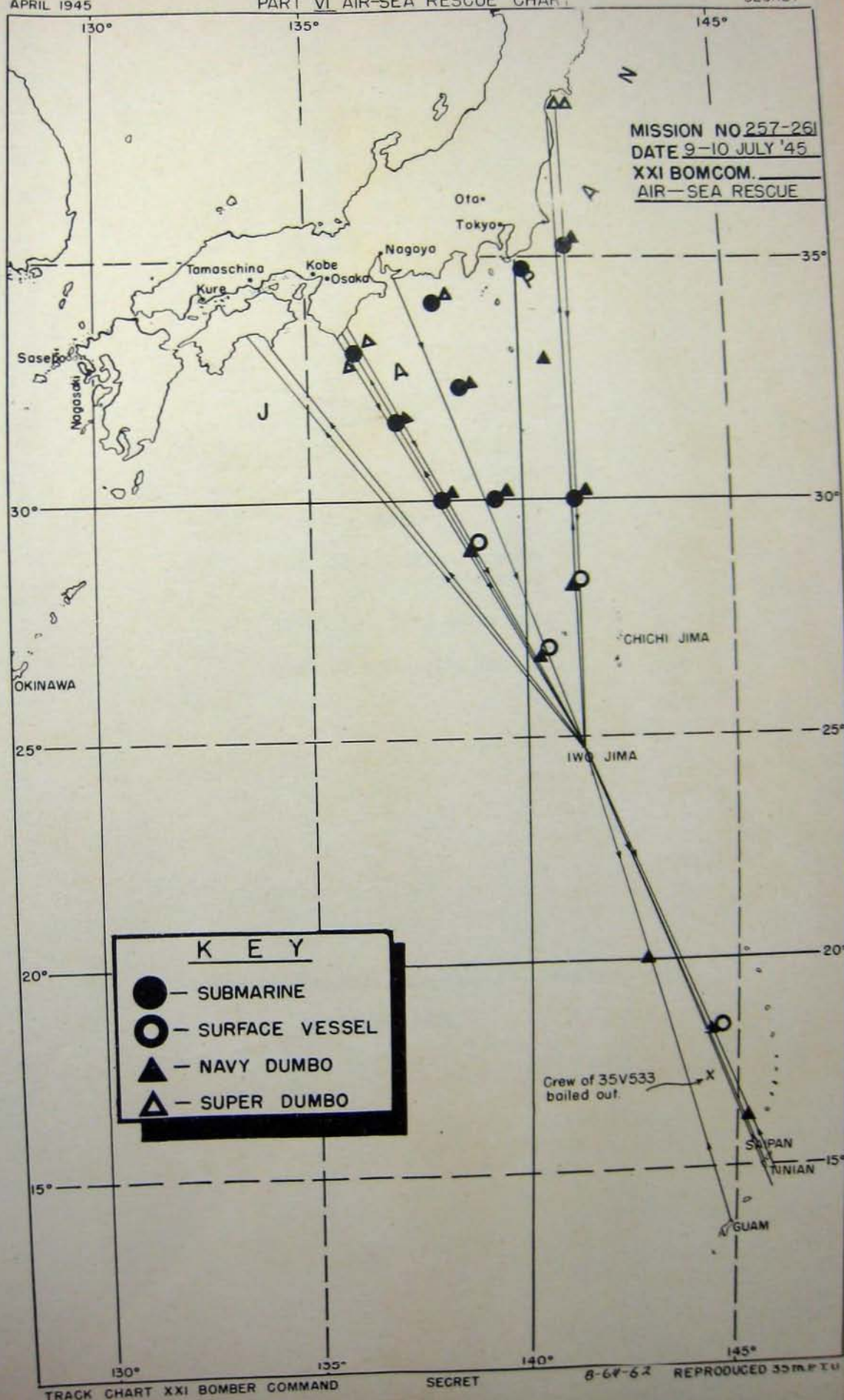
99.9%

9. Remarks: Gunnery discipline was excellent. When enemy fighters were seen fire was withheld until positive attack was made by the enemy. An unsuccessful bombing attempt was made by one enemy plane.

APRIL 1945

PART VI AIR-SEA RESCUE CHART

SECRET



TRACK CHART XXI BOMBER COMMAND

SECRET

8-64-62 REPRODUCED 35MPTU

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

ANNEX

B

WEATHER

Part I - Weather

Part II - Chart - Forecast vs -
Observed Weather

Part III - Prognostic Map

Part IV - Synoptic Map

Missions No. 257, 258, 259, 260 and 261

10 May 1945

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

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

Part I - Weather Summary

Planning Forecast - Missions No. 257 through 261

Bases: 4/10 low clouds, base 2000 ft, top 6000 ft in morning increasing by 0800Z to 6/10 base 1400 ft, tops 12-20,000 ft. with moderate showers and some thunderstorms.

Route: To 20°N: as bases.
To 33°N: 4-7/10 low clouds, base 2500 ft, tops 6000 ft. with few tops to 20,000 ft. in narrow bands across route.
To coast: 10/10 low, middle and high clouds in front with tops to 28,000 ft. Layers well defined and well spaced except in narrow zone 33 to 34°N.

Targets: All: Broken layers of low, middle and high clouds. Layers well spaced and well defined with few scattered areas where cloud diminishes to scattered especially on north coast.

OPERATIONAL FORECAST

Bases at Scattered low clouds, broken middle and high clouds with
Take-Off: scattered shower, reducing visibility to 2 miles.

Route: Scattered low and middle clouds and broken high clouds to 20°N. From 20°N to 22° there will be broken low clouds with towering cumulus to 20,000 ft. and showers; scattered middle clouds and broken high clouds. From 22°N to 28°N there will be scattered low and high clouds. There will be scattered low and broken and high clouds between 28°N and 30°N. A frontal zone between 30°N and 32°N will give broken low clouds and overcast middle and high clouds, with light to moderate rain. There will be broken low and high clouds and scattered middle clouds from 32°N to target area.

Targets: Gifu: 3/10 stratocumulus, base 2500 ft, top 5000 ft; 1/10 altostratus at 16,000 ft; 3/10 cirrus at 32,000 ft. Winds at 16,000 ft. will be 310° at 35 knots.
Wakayama: 2/10 stratocumulus, base 3000 ft, top 5000 ft; 2/10 altostratus at 15,000 ft; 4/10 cirrus at 32,000 ft. Winds at 10,000 ft. will be 300° at 20 knots.
Sendai: 3/10 stratocumulus, base 2500 ft, top 5000 ft. Winds at 10,000 ft. will be 310° at 35 knots.
Yokkachi: 4/10 cumulus, base 2000 ft, top 6000 ft; 3/10 altostratus at 15,000 ft; 3/10 cirrus at 30,000 ft. Winds at 15,000 ft. will be 310° at 40 knots.
Sakai: 2/10 cumulus, base 2000 ft, top 5000 ft; 2/10 altostratus at 14,000 ft; 4/10 cirrus at 32,000 ft. Winds at 10,000 ft. will be 310° at 35 knots.

Bases on
Return: Scattered low middle and high clouds.

OBSERVED WEATHER

Bases at 4-5/10 low clouds, base 1800 ft, tops 6000 ft. with scattered light showers and 7/10 middle clouds at 14,000 ft.

Take-Off: Visibility 6 miles in showers, otherwise unrestricted.

Route to 20°N: 4-5/10 low clouds, with base 2000 ft, tops 6-8000 ft. and few tops to 15,000 ft. Visibility unrestricted except in light rain showers to 3 miles.

Targets: To 22°N: 5-7/10 low clouds, base unknown, tops 8-20,000 ft. with thunder showers visible and scattered middle clouds associated with tops of low clouds.
To 31°N: 2-4/10 low clouds, base 2000 ft, tops 4-5,000 ft.
To 33°N: low clouds increased to 5-7/10 flat type with tops 6000 ft. and with scattered to broken middle cloud in very weak frontal zone.

Targets: Low cloud decreased slowly to target condition.

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

Targets: Sendai: 3/10 low clouds, no upper clouds, visibility unrestricted. Winds at 10,000 ft. were 320° at 25 knots.
Sakai: Clear to 1/10 low clouds with scattered middle clouds to 15,000 ft. and visibility unrestricted. Winds at 10,000 ft. were 265° at 20 knots.
Wakayama: Clear to 1/10 low clouds with scattered middle clouds to 15,000 ft. and visibility unrestricted. Winds at 10,000 ft. were 315° at 18 knots.
Gifu: Clear. Visibility unrestricted. Winds at 16,000 ft. were 315° at 35 knots.
Yokkaichi: Clear except for scattered middle clouds. Visibility unrestricted. Winds at 15,000 ft. were 315° at 35 knots.

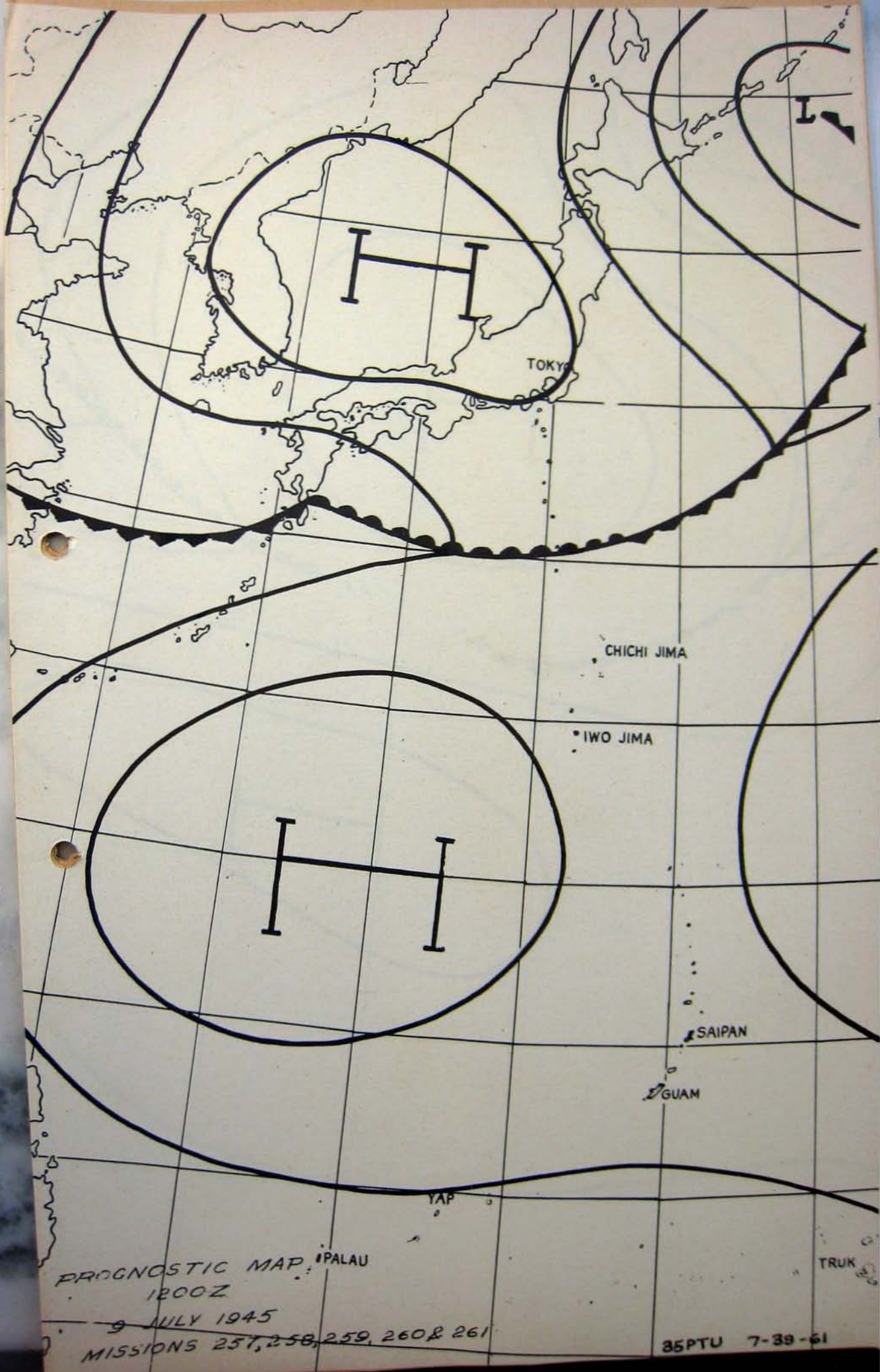
Bases on 3-5/10 low clouds, base 1800 ft, tops 7000 ft. with scattered
Return: middle and high clouds and light showers. Visibility unrestricted except 4 miles in showers.

FORECAST WEATHER

25,000					
20,000					
15,000					
10,000					
5,000					
SURFACE					

OBSERVED WEATHER

35 PTU 7-39-61





SYNOPTIC MAP
1200Z
9 JULY 1945

MISSIONS 257, 258, 259, 260 & 261

35PTU 7-39-61

S E C R E T

ANNEX

C

COMMUNICATIONS

Part I - Radar Counter Measures

Part II - Radio

Missions No. 257, 258, 259, 260 and 261

9/10 July 1945

- 35 -

S E C R E T

S E C R E T

Part I - RCM

1. Purpose:

- a. To D/F early warning and gun-laying radars.
- b. To conduct a general search in the 20-3000 mc. region.
- c. To barrage jam the enemy gun-laying and searchlight radar in the 72-84 mc. and 190-210 mc. regions and to spot jam any gun-laying or searchlight signals appearing outside the barrage.
- d. To confuse enemy searchlight and gun-laying radars by the use of rope.

2. Method:

a. Twenty-five RCM Observers participated and used the following equipment to accomplish the search and jamming: 337-AFT-1, 168-AFQ-2, 11-ARQ-8, 21-AFT-3, (Modified), 22-AFR-4, 8-APA-11, 5-ARR-7, 4-AFR-5, 7-APA-24, 4-MM-18 and 8-APA-6.

b. Rope was dispensed at the rate of 3 bundles per 10 seconds when protection was needed from searchlights.

c. Four special jamming airplanes were employed by the 73rd Wing, target Sakai, to cover the strike airplanes since at night flight squadrons are not able to produce an effective barrage. One special jamming airplane was not effective due to abort. These special jamming airplanes were equipped to barrage the 72-84 mc. and 190-210 mc. regions and to spot jam any gun-laying or searchlight radars appearing outside the barrage. In addition each strike aircraft carried at least 1 jammer tuned to frequency with the barrage band.

3. Results:

a. The special jamming aircraft appeared to be successful. Gun-laying and searchlight radars in both bands were jammed and many were reported to have been turned off. There seemed to be a lack of coordination between searchlights and flak.

b. Sixty-one intercepts were recorded and are listed at the end of this section.

c. The 315th Wing, target Utsube Oil Co. Refinery, was not equipped with electronic jammers and rope was the only counter-measure employed.

4. Remarks:

a. Eight signals were D/F'd to points in the sea and are assumed to be shipborne.

b. A 123 mc. carrier modulated by a 8000 cycle tone was intercepted at 3506N - 13606E.

c. Five sine wave modulated signals at 42, 45.5, 46, 47.5 and 52 mc. were intercepted and were believed to be early warning radars.

d. Enemy communications were intercepted on frequencies of 870 kc, 1.4 mc, and 15.22 mc, 13 mc, 10.2 mc, 6.01 mc, 8.1 mc, 9.4 mc, and 1.36 mc.

S E C R E T

LIST OF INTERCEPTS

00042	0000	00	2740N	14140E	071045	0303	21	121	S		
00046	0000	00	3600N	14130E	071045	0555	21	121	S		
00046	0000	00	3600N	14110E	071045	0555	21	121	S		
00048	0000	00	3620N	14110E	071045	0556	21	121	S		
00052	0000	00	3620N	14110E	071045	0557	21	121	S		
00069	0450	30	3225N	14030E	071045	0424	21	121	P	EW	CHI
00071	0450	38	3510N	13950E	071045	0507	21	122	P	EW	CHI
00076	1000	80	3150N	13530E	071045	0105	21	121	S	EW	CHI
00078	1000	55	3200N	13515E	071045	0108	21	121	S	EW	CHI
00078	0000	08	3250N	14150E	071045	0630	21	121	P	GL	OTAO3
00078	0750	99	3205N	13510E	071045	0110	21	121	S	EW	CHI
00080	1920	18	3350N	13628E	071045	0045	21	121	S		
00084	0500	50	3210N	13500E	071045	0112	21	121	S	EW	CHI
00090	0368	24	2900N	13750E	070945	2321	21	121	S	EW	001010202
00091	0450	40	3507N	14000E	071045	0500	21	122	P	EW	001010202
00095	0750	18	3220N	13500E	071045	0114	21	121	S	EW	CHI
00097	0750	20	3230N	13455E	071045	0116	21	121	S	EW	CHI
00098	0750	15	3235N	13450E	071045	0117	21	121	S	EW	CHI
00103	0480	14	3439N	13801E	071045	0146	21	121	S	EW	001010202
00106	0360	28	3535N	13651E	071045	0125	21	121	S	EW	001010202
00108	0485	16	3514N	13604E	071045	0110	21	121	S	EW	001010202
00109	0791	27	3355N	13818E	071045	0147	21	121	S	EW	CHI
00110	1490	15	3370N	13630E	071045	0040	21	121	S	EW	001010002
00142	0492	04	3405N	13607E	071045	0050	21	121	S	EW	001030003
00145	1000	40	3235N	13450E	071045	0118	21	121	S	EW	
00145	0497	03	3355N	13550E	071045	0147	21	122	P	EW	001030003
00147	1000	15	3240N	13630E	071045	0224	21	121	S	EW	00604
00147	1100	10	3330N	13430E	071046	0136	21	121	S	EW	00604
00148	1000	10	3245N	13620E	071045	0222	21	121	S	EW	00604
00148	0490	04	3350N	13450E	071045	0130	21	121	S	EW	001030003
00148	0750	15	3235N	13450E	071045	0119	21	121	S	EW	
00148	0490	07	3225N	14200E	071045	0435	21	122	P	EW	001030003
00148	0495	05	3504N	14000E	071045	0508	21	122	P	EW	001030003
00148	0490	12	3354N	13607E	071045	0044	21	121	S	EW	001030003
00150	0492	10	3244N	13527E	071045	0030	21	122	P	EW	001030003
00152	1000	10	3330N	13430E	071045	0137	21	121	S	EW	00604
00152	1000	10	3255N	13615E	071045	0221	21	121	S	EW	00604
00152	0494	07	3352N	13608E	071045	0042	21	121	S	EW	001030003
00152	0530	07	3320N	13630E	071045	0030	21	121	S	EW	001030003
00153	0488	05	3704N	14100E	071045	0650	21	122	P	EW	001030003
00153	0485	04	3332N	13513E	071045	0110	21	122	P	EW	001030003
00155	0485	07	3245N	14030E	071045	0419	21	122	P	EW	001030003
00155	0000	06	3230N	14130E	070945	2349	21	122	S	EW	001030003
00156	0492	05	3459N	13955E	071045	0505	21	122	S	EW	001030003
00157	1000	10	3255N	13615E	071045	0220	21	121	S	EW	00604
00158	0490	06	3430N	14130E	071045	0015	21	122	P	EW	001030003
00158	0492	09	3245N	14000E	071045	0436	21	122	P	EW	001030003
00158	0482	07	3540N	14105E	071045	0516	21	122	P	EW	001030003
00158	0600	08	3330N	13430E	071045	0138	21	121	S	EW	001030003
00159	0490	12	3704N	13313E	071045	0152	21	121	S	EW	001030003
00159	0490	09	3605N	14015E	071045	0720	21	121	P	EW	001030003
00159	0491	08	3245N	14200E	071045	0755	21	122	P	EW	001030003
00160	0498	11	2625N	14245E	071045	0500	21	122	P	EW	00604
00160	0750	03	3330N	13430E	071045	0138	21	121	S	EW	
00160	0750	12	3235N	13450E	071045	0120	21	121	S	EW	006040003
00163	0483	05	3330N	13880E	071045	0158	21	121	S	EW	006040003
00178	0000	05	3347N	13608E	071045	0038	21	121	S	EW	001020002
00186	1024	15	3545N	13640E	071045	0115	21	121	S	EW	
00290	0750	08	3235N	13450E	071045	0121	21	121	S	EW	
00292	0750	18	3300N	13415E	071045	0132	21	121	S	EW	

S E C R E T

Part II - Radio

1. Strike Reports: There were 41 Strike Reports transmitted by aircraft over the target. All were received by the Ground Station. One aircraft of the 73rd Wing, unable to contact the Ground Station, relayed its report through another aircraft. Following are the number of reports received by each Wing: 73rd, 8; 313th, 6; 58th, 9; 314th, 10; and 315th, 8.

2. Fox Transmissions: The 314th Wing reported one "F" type message was transmitted from the Ground Station. Out of 130 radio operators interrogated, 118 received the message. The 58th Wing transmitted 2 Fox messages. One hundred and twenty-two aircraft operators received the first message. One hundred received the second message for an average of 89.3 per cent. The 313th Wing transmitted 2 Fox messages, with 98 percent on all operators logging these transmissions. The 73rd Wing reported two "F" type messages were transmitted from the Ground Station, with 87 per cent of the operators logging both messages correctly. Reasons given by all Wings for failure to log these messages were fundamentally the same. These reasons included, dispensing rope, eating, frequency interference and working on equipment malfunctions.

3. Frequencies: Atmospheric interference during these missions were moderate on all strike frequencies. The CMI station at Saipan was reported as being effectively jammed over the Japanese mainland. Following is a percentage breakdown of traffic per frequency; 19 per cent on 3 megacycles; 48 per cent on 7 megacycles, and 33 per cent on 11 megacycles.

4. Navigational Aids: Two HF/DF bearings were requested and received. Four VHF/DF bearings requests were received. All were obtained. Ranges, homers and broadcast stations were used with satisfactory results. The 314th Wing reported 1 aircraft dropped an CBN-1 transmitter buoy close to a ditched aircraft which aided rescue facilities in locating the survivors.

5. Net Discipline and Security: Good net discipline was maintained during these missions with only a few minor discrepancies, such as failure to monitor before transmitting and tuning enroute to the target. The 58th Wing reported 1 serious breach of security which was logged by air-ground station operators as well as many aircraft operators. At 0853Z, 62V667 transmitted to OOV665 in the clear, "Who Sends Strike Reports". This was approximately one and one half hours after take-off. Corrective action was taken to prevent recurrence of security violations of this type.

6. Enemy Transmissions: The following incidents of enemy jamming and interference were recorded during these missions:

a. 3020 kcs:

- (1) CW numbers and letters between 1110Z and 1145Z were partially effective.
- (2) Unidentified CW between 1137Z and 1337Z was effective.
- (3) Steady CW at 1238Z was effective.
- (4) CW keying between 1400Z and 1500Z was partially effective.

b. 6615 kcs:

- (1) Meaningless code between 1100Z to 1800Z was partially effective.

S E C R E T

(2) V's and Jap characters between 1300Z and 1800Z were very effective.

(3) Jap code from a powerful transmitter between 1300Z and 1900Z was very effective.

(4) Speed key sending between 1430Z and 1600Z was ineffective.

c. 10305 kcs: Negligible.

d. 3145 kcs:

(1) Unidentified CW at 1335Z was partially effective.

(2) Jap net operating between 0900Z and 2000Z was very effective.

e. 6055 kcs:

(1) Intermittent Jap CW at 1736Z, 1905Z and 2102Z was partially effective.

(2) Steady CW signal and English voice in background at 1145Z was partially effective.

(3) Steady signal and V's with music in background was partially effective.

f. 10880 kcs:

(1) Steady buzzing sound with V's in the background between 1405Z and 1630Z was partially effective.

(2) V's and dashes by station using call sign "12F" were effective.

g. 3410 kcs: Negligible.

h. 7310 kcs:

(1) Heavy tone blocking out Ground Station between 1410Z and 1430Z was very effective.

(2) Buzzing sound from 1300Z to 1500Z was effective.

(3) Series of V's and dashes from 0930Z and 1140Z was partially effective.

i. 11160 kcs: High pitched continuous tone from 1330Z to 1500Z was effective.

j. 3990 kcs: Negligible.

k. 7415 kcs:

(1) Station 5DP sending traffic was ineffective.

(2) Test and tuning signal from unknown station at 2345Z was ineffective.

l. 10820 kcs: Negligible.

m. 3810 kcs: Negligible.

S E C R E T

n. 6640 Kcs: Intermittent CW transmissions from 1030Z to 1400Z were ineffective.

c. 10965 Kcs: Possible noise jamming from 1330Z to 1731Z was ineffective.

7. Distress: Several aircraft transmitted messages concerning the sighting of a crashed aircraft and survivors, giving position and other needed information. One aircraft transmitted information to Air-Sea Rescue Station at Iwo Jima and 1 buoy transmitter was dropped at the scene of the crash.

8. Equipment Malfunctions: AN/ART-13: 1 fixed antenna broken; 1 no side tone; 1 dynamotor burned out; 1 keying relay stuck; 1 channels 1 and 2 would not channel. BG-348; 1 inoperative; 1 CW oscillator inoperative. ARN-7; 1 antenna lead-in broken; 1 loop antenna inoperative; 1 sense antenna broken; 1 inoperative. Interphone: 3 microphone buttons inoperative; 1 dynamotor noisy; 2 shorted jack boxes; 2 interphone systems inoperative; 1 jack box leakage; 1 microphone switch shorted; 1 amplifier tube burned out; 1 foot switch inoperative; SCR-522; 2 inoperative; 1 dynamotor burned out; 1 Channel C inoperative, 1 Transmitter inoperative. SCR-274, 1 inoperative, 2 intermittent operation. RL-42, 4 inoperative, 1 sticking.

S E C R E T

ANNEX

D

INTELLIGENCE

Part I - Enemy Air Opposition

Part II - Enemy Antiaircraft

Part III - Damage Assessment

Missions No. 257, 258, 259,
260 and 261

9/10 July 1945

- 41 -

S E C R E T

SECRET

PART I - ENEMY AIR OPPOSITION

1. Summary: An estimated 50 Jap aircraft made 11 attacks on the Sendai-Sakai-Wakayama-Gifu-Yokkaichi night strikes of 9/10 July 1945. The interceptors damaged at least 3 B-29's. Superfort crews made no claims.

2. Observations:

a. Mission 257, 58th Wing, Sendai:

(1) Fighter opposition was extremely light and very ineffective. Of the 10 interceptors only 1 attacked.

(2) From reports of returning crews it was believed that all fighters in Sendai area depended on coordination and control of searchlights or the use of landing lights for night attacks. The blinking of navigation lights indicated the continued use of trickery to attract B-29 fire.

b. Mission 258, 73rd Wing, Sakai:

(1) An estimated 10 to 15 enemy aircraft were encountered and 5 attacks were sustained while the B-29's were illuminated by searchlights or were in the vicinity of the target. One of the B-29's received minor damage as a result of combined E/A and A/A activity.

(2) Evasive action taken consisted of slight turns and changes in altitude.

(3) Two crews at 10,800 feet observed the Tokushima and Akenogahara airfields to be illuminated and enemy aircraft taking off.

c. Mission 259, 313th Wing, Wakayama:

(1) A maximum of 10 enemy aircraft were sighted, all but 1 in the target area.

(2) One possible attack was sustained by the B-29's. The enemy aircraft was believed to be a T/E which fired 2 quick bursts from 5 o'clock. The attack was so sudden and unexpected that fire was not returned.

d. Mission 260, 314th Wing, Gifu: A probable 10 to 15 aircraft made 3 attacks. Most of the enemy aircraft encountered were flying around in the target area with their lights on. They were reported to be shooting at random rather than attacking an individual B-29. One case was reported of an attack being made on a plane picked up by a searchlight near Kitagata. Suddenly the searchlight held the attacking fighter in its beam and not the B-29. It was believed by some of the crew that the night fighters were attempting to locate possible targets visually. The enemy fighters passed the B-29's, high, low or on either side. They also crossed the course of the bombers behind, in front, above or below. They had much difficulty in locating a B-29 and making an attack. The fighters were believed to fire tracers in order to draw fire so the bomber would disclose its position.

e. Mission 261, 315th Wing, Yokkaichi (Utsube River Oil Refinery):

(1) An estimated 15 Jap fighters made 2 attacks and also performed several simulated attacks, firing no ammunition.

S E C R E T

(2) Just before bombs away 1 B-29 was caught in 6 or 7 searchlight beams which intersected over the target. The aircraft was at an altitude of 15,000 feet. Rope was thrown out but appeared to be ineffective. The enemy aircraft came in from 5 o'clock low. Examination of the B-29 indicated penetration by a projectile in the fuselage.

(3) There was a considerable decrease in the number of coordinated simulated attacks as compared with the last mission.

(4) One possible attempt at ramming was reported. When the B-29 was 75 miles out from land's end, the enemy aircraft, identified as an Irving, came in from 5 o'clock level at 17,000 feet. It closed to within less than 50 yards. The enemy aircraft was close enough for its insignia to be seen. The enemy aircraft had 2 lights on its wing on the port side. These were turned off and a large light appeared.

* * * * *

PART II - ENEMY ANTI-AIRCRAFT

1. Mission No. 257 - Sendai Urban Area:

a. The primary target was bombed by 123 aircraft of the 58th Wing between 1503Z-1705Z from 10,000-10,700 feet. Axis of attack varied from 341°-360°. Weather was reported as CAVU-3/10 undercast with smoke from target fires supplementing the undercast.

b. En route to the target flak was encountered as follows:

<u>Location</u>	<u>Coordinates</u>	<u>Remarks</u>
Hitachi	3635N-14037E	Meager and inaccurate, medium.
Tsukinoki	3805N-14050E	Meager and inaccurate, medium.
Haragama (I.P.)	3750N-14100E	Meager and inaccurate, medium.

c. Over the target flak was described as meager to moderate, inaccurate and medium. Heavy flak was meager and inaccurate. At least 20 searchlights were counted in the general target area. Their employment was well coordinated with the guns, and the fact that 52 aircraft out of 123 were coned by 1 or more lights for periods of 1 to 4 minutes attests to their effectiveness. One aircraft bombed Katsuura as a T.O. and encountered no flak.

d. On withdrawal flak was encountered as follows:

<u>Location</u>	<u>Coordinates</u>	<u>Remarks</u>
Shiogama	3815N-14100E	Meager and inaccurate, medium.
Matsushima	3825N-14120E	Meager and inaccurate, medium. Gun flashes from 4-gun heavy battery observed on ground.
Picket Boat	3815N-14110E	Meager and inaccurate, medium.

e. No aircraft were lost to flak on this mission, and of 123 aircraft bombing the primary target, 6 or 4.88%, sustained flak damage.

S E C R E T

f. Searchlights were reported as follows:

<u>Location</u>	<u>Number</u>
Target	20
Shiogama	5
Tsukinoki	2
Yamagata	2
Mirata	2

g. Miscellaneous Antiaircraft Observations:

(1) One large phosphorus flak burst was reported over the target.

(2) Several crews reported observing brilliant green flashes or glows on the ground in the target area. Their description closely fits the report of similar flashes described in the Tokyo area.

(3) One squadron painted with the jet black paint reported that numerous searchlights flicked their aircraft, but were unable to track them.

2. Mission No. 258 - Sakai Urban Area:

a. The primary target was bombed by 115 aircraft of the 73rd Wing between 1633Z-1806Z from 10,000-11,350 feet. Axis of attack varied from 55° - 89° . Weather was reported as 1/10-2/10 undercast, with winds of 23 knots being from 290° .

b. En route to the target flak was nil.

c. Over the target area flak was generally meager, inaccurate and heavy. As usual, only aircraft which were illuminated by searchlights received fire. Aircraft illuminated for more than 1 minute reported moderate flak. All aircraft sustaining flak damage were illuminated when hit. One RCM aircraft orbited the area for 40 minutes, was illuminated by numerous searchlights, and received moderate and accurate, continuously pointed heavy flak resulting in damage. Two aircraft bombed Kochi as a T.O. and encountered a meager, inaccurate, medium barrage.

d. Searchlight Activity Over the Target:

(1) The searchlight defenses in the target area were extremely effective and well coordinated with the guns. A total of 63 aircraft out of 115 were illuminated for varying lengths of time.

(2) One group reports the following tabulation which is representative of the experience of the entire Wing:

Aircraft over target	30
Aircraft comed by searchlights	20
"Zero" pickups	15
Pickups after 10-second search	2
Aircraft comed for 10 seconds	3
Aircraft comed for 40 seconds	1

S E C R E T

b. En route to the target flak was nil.

c. Over the target area flak was described as meager, inaccurate, heavy and medium by two-thirds of the aircraft. The remaining one-third described flak as nil. Four to six ineffective searchlights were reported 1 to 4 miles NW of Gifu.

d. On withdrawal meager, inaccurate and medium flak was reported as follows:

<u>Location</u>	<u>Coordinates</u>	<u>Remarks</u>
Omae-Sake	3436N-13813E	
Surface Vessel	3352N-13838E	
Surface Vessel	3135N-13845E	
Kagamigahara	3524N-13654E	Meager and inaccurate, heavy.

e. No aircraft were lost or damaged as a result of flak on this mission.

f. Miscellaneous Antiaircraft Observations:

(1) Blackout at the target was complete.

(2) One aircraft reported that medium fire was being directed at falling bombs. This tactic has been reported on a previous strike.

(3) One aircraft reported a parachute bomb over the target. It floated down slowly emitting a red glow and then exploded.

5. Mission No. 261 - Utsube River Oil Refinery at Yokkaichi:

a. The primary target was bombed by 61 aircraft of the 315th Wing between 1340Z-1438Z from 15,550-16,950 feet. Axis of attack varied from 310°-320°. Weather was reported as CAVU-1/10 undercast.

b. En route to the target flak was encountered as follows:

<u>Location</u>	<u>Coordinates</u>	<u>Remarks</u>
Landfall (Nakiri)	3416N-13652E	Meager to moderate and inaccurate, heavy and medium.
Taketoyo	3450N-13655E	Meager and inaccurate, white phosphorus flak.
Hisai	3441N-13630E	Meager and inaccurate, heavy.
Nabari	3437N-13605E	Meager and inaccurate, heavy (2 guns).

c. Over the target flak was described as meager to moderate, inaccurate and heavy. Twelve heavy guns were observed firing in the immediate target area. Ten searchlight beams were observed in the target area. Rope proved very satisfactory in eluding lights which had come aircraft.

d. Flak was nil on withdrawal.

S E C R E T

e. No aircraft were lost to flak on this mission, and of 61 aircraft bombing only one, or 1.64%, sustained flak damage.

f. Additional searchlights were reported at the following locations:

<u>Location</u>	<u>Coordinates</u>	<u>Number</u>
Near Daio Saki	3418N-13650E	1 to 6
Kami Shima	3433N-13659E	4
Irago Saki	3435N-13703E	2
Near Tawara	3439N-13717E	2
Taketoyo	3450N-13655E	3
Kambe	3453N-13636E	8
Near Tsu	3443N-13631E	2
- - -	3415N-13630E	4
Shingu	3345N-13600E	4 to 5
- - -	3424N-13703E	2
NW of Target	- - -	2
S of Target	- - -	4
N of Target	- - -	4

g. Blackout of the target area was good.

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

PART III - SECTION A - SENDAI - DAMAGE ASSESSMENT*

1. Summary of Damage:

Built-up area: Sq. Mi. Total - 4.53; Sq. Mi. destroyed - 1.22
Per cent destroyed - 27

Planned target area 3.0 sq. mi. Per cent destroyed - 41

Total damage to date 1.22 sq. mi. Per cent of built-up area - 27

Targets damaged by current strike: 4 numbered; 2 other.

Limitations of coverage: Targets 1104 and XXI 6214 lack coverage.

Note: All damage listed is new - figures represent totals.

2. Report:

Damage within limits of built-up area:

<u>a. Area damaged from current strike</u>	<u>Sq. Mi.</u>	<u>Sq. Mi.</u>	<u>Destroyed</u> <u>Per cent</u>
Built-up area (Urban)	4.53	1.22	27
Built-up area (Industrial)	Not measured separately		
Built-up area (Total)	4.53	1.22	27

b. Damage to targets:

<u>Number</u>	<u>Name</u>	<u>Total damage</u>
90.10-XXI 6223 (A)	RR Yards	40%
" XXI 6223 (B)	Gas Works	80%
" XXI 6223 (C)	Government Monopoly	100%
	Military installation	80%
	(N portion of city)	
	Army Buildings	50%

c. Damage outside built-up area (within 5 mile radius of center of city):

d. Area damage from current strike: None.

e. Damage to targets:

<u>Number</u>	<u>Name</u>	<u>Total damage</u>
90.10-1671	Government A/C parts plant	9%

Reference: AAF Air Objective Folder 90.10 18 September 1944

Inclosure: Enlargement annotated to show damage follows this section.

* Based on XXI B.C. CIU D.A. Report No. 147

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Damage Assessment Report
Sendai #147
90.10 - Urban
Mission 257
9-10 July 1945
C.I.U.- 20 A.F.

2618 C 35 PTU 29 JUL 45

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

PART III - SECTION B - SAKAI - DAMAGE ASSESSMENT*

1. Summary of Damage:

Built-up area: Sq. Mi. total - 2.32; Sq. Mi. destroyed - 1.02

Per cent destroyed - 44

Planned target area: 1.8 sq. mi.

Per cent destroyed: 57

Total damage to date: 1.02 sq. mi.

Per cent built-up area: 44

Targets damaged by current strike: 1 numbered, 4 unnumbered and 5 industrial areas.

Note: No previous damage. Photos are good.

2. Damage within limits of built-up area:

a. Area damage from current strike:

	<u>Sq. Mi.</u>	<u>Sq. Mi.</u>	<u>Destroyed Per cent</u>
Built-up area (Urban)	1.75	.94	54
Built-up area (Industrial)	.57	.08	14
Built-up area (Total)	2.32	1.02	44

3. Damage to targets:

90.25- 383 Dai Nippon Celluloid Co.	20% destroyed
90.25-1782 Osaka Metal Industry	No damage

Annotations (Industrial areas)

1. 30% destroyed (Including a paper mill - 100% destroyed).
2. 30% destroyed (including a kiln, drug factory, RR station - all 100% destroyed).
3. 60% destroyed
4. 10% destroyed
5. 60% destroyed

4. Damage outside built-up area (with 5 mile radius of center of city) - no previous damage

5. Area damage from current strike: 3 small, sparsely built-up industrial areas just outside and west of the built-up area - destroyed.

6. Damage to Targets (exclusive of Osaka):

90.25-1710 Takada Aluminum Factory	No damage
Osaka Waterproof Paper Factory	No damage
Hankai Woolen Mill	No damage
Hinomoto Iron Works	No damage
Textile Mill	No damage
Rail & Highway bridges	No damage

Inclosure: Annotated mosaic to show damage follows this section.

* Based on XXI B.C. CIU D.A. Report No. 164.

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KEY

- Urban Built Up Area
- Industrial Built Up Area
- Sparsely Built Up Area
- Damage

Damage Assessment Rpt 164
Sakai
90.25 - Urban
XXI B.C.—Mission 258
9-10 July 1945

2696 C 35PTU 5 AUG 45

One Mile

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

PART III - SECTION C - WAKAYAMA - DAMAGE ASSESSMENT*

1. Summary of Damage:

Built-up area: Sq. Mi. Total - 4.0; Sq. Mi. destroyed - 2.1
Per cent destroyed - 52.5

Planned target area: 2.0 sq. mi. Per cent destroyed - 109

Total damage to date: 2.1 sq. mi. Per cent of built-up area: 52.5

Targets damaged by current strike: 2 numbered, 17 other.

Note: data in this report supersedes that listed in all previous reports.

2. Report:

Damage within limits of built-up area:

<u>a. Area damage from current strike:</u>	<u>Sq. Mi.</u>	<u>Sq. Mi.</u>	<u>Destroyed</u> <u>Per cent</u>
Built-up area (Urban)	3.05	1.64	53.7
Built-up area (Industrial)	.95	.46	48.4
Built-up area (Total)	4.0	2.1	52.5

b. Damage to targets:

Numbered: None in built-up area
Other: 17

<u>Annotation</u> <u>Number</u>	<u>Name</u>	<u>(This is first strike)</u> <u>Damage</u>
2	Dempobashi Plant of Daiwa Boseki	100% gutted
3	Unidentified Industry	90% gutted
5	Unidentified Industry	100% gutted
6	Kanega Fuchi Boseki	100% gutted
7	Ki-No-Kawa Plant of Daiwa Boseki	100% gutted
8	Unidentified Textile Mill	100% gutted
9	Koyosenko KK - Dyeing Plant	80% gutted
10	Sumitomo Kogyo KK - Special Steel	None visible
11	Unidentified Textile Mill	None visible
12	Unidentified Industrial Area	90% destroyed or gutted
13	Toakogyo Textile Mill	90% destroyed or gutted
14	Gunzo Kogyo KK (Spinning)	100% gutted
15	Kiyo Shukuta (Weaving)	100% destroyed or gutted
16	Waterworks	None visible
17	Toho Denryoku DD Power Plant	None Visible
18	Unidentified Industry	90% destroyed
19	Tebina Plant Daiwa Boseki (Spinning)	None visible
20	Koa Boseki (Spinning)	5% damage
30	Commercial District Adjacent to castle	90% destroyed or gutted
29	Castle Grounds	Castle 100% destroyed
21	Nakayama Seiko KK, Yura Seiko KK	5% damage
23	Unidentified Wool Weaving Mill	None visible
24	Unidentified Industry	None visible
25	Unidentified Industry	None visible
22	Wakayama Senko KK Cotton Mill	None visible
4	Nankai RR Terminal - building	40% destroyed
28	RR Station & Yards - N part of city	None visible
31	Gas Works	None visible - probable fire damage
27	Military Hq. & Parade Grounds	Buildings 25% destroyed
26	Hanwa Terminal	None visible

* Based on XXI B.C. CIU D.A. Report No. 145.

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

In addition not less than 26 small unidentified industrial plants of various types were destroyed.

c. Damage outside built-up area: (within 5 mile radius of center of city).

d. Area Damage from current strike: Burned out areas on west bank of river south of highway bridge, barracks area and small industrial and urban area adjacent to Target XXI 5047 amount to .09 sq. mi.

e. Damage to targets:

<u>Number</u>	<u>Name</u>	<u>Damage</u>
XXI 5047	Sumitomo Metal Industry, Ltd.	10% destroyed or removed
XXI 5048	Unidentified Industry	None visible
XXI 5049	Sumitomo Electric Industry (Chemical Plant)	Minor damage
	Wakayama Tekkosho - Lathes (East suburbs)	None visible
	Wakayama Steel Mfg. Co., (East outskirts)	None visible
	Textile Mill (adjacent to Target XXI 5047 - annotated as No. 1)	None visible
	Unidentified Industry (West of Target XXI 5047)	None visible

References: AAF Air Objective Folder 90.25.
XXI Bomber Command Lith-Mosaic, Wakayama Area.

Inclosures: Annotated enlargement showing damage
Annotated enlargement showing location of targets
Post Strike - 3FR5M345

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

PART III - SECTION D - GIFU - DAMAGE ASSESSMENT*

1. Summary of Damage:

a. Damage to the city of Gifu resulting from XXI Bomber Command Mission 260, 9/10 July 1945, totals 1.93 sq. mi., which represents about 74% of the entire built-up portion of the city (2.6 sq. mi., as determined from reconnaissance photos). Only small areas in the northeast, east and south sections remain undamaged.

b. Damage outside the built-up portion of the city amounts to .13 sq. mi., bringing the total area destroyed to 2.06 sq. mi.

c. There are no numbered industrial targets within the limits of the built-up area. However, the railroad station, freight warehouses, and a large industrial plant - Fuji Gas Textile Miss (reported Kawasaki A/C) Ref. A - in the south central section of the city were destroyed. Other small isolated, unidentified industrial plants, probably textile mills (Ref. A) scattered throughout the city were also destroyed.

d. One unidentified industrial plant, probably a textile mill (Ref. A), covering a ground area of approximately 1,900,000 sq. ft., in the east section of the city, is undamaged.

e. Additional damage in isolated sections, particularly in the northeast section of the city, may exist. Haze conditions at time of photography resulted in photos not suitable for complete and accurate assessment.

Reference: AAF Air Objective Folder 90.20 M-8

Inclosure: Mosaic annotated to show damage

* Based on XXI B.C. CIU D.A. Report No. 139.

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

2. Targets within Built-up Area:

Numbered Targets: None

Other Targets:

Damage

Railroad Station and Yards	Station damaged, yards probably damaged
Dai-Nippon Spinning Mill	None visible
Nippon Woolen Mill	90% destroyed
Mine Electric Railway Company	100% destroyed
Kyodo Textile Mill No. 1	100% destroyed
Kyodo Textile Mill No. 2	100% destroyed
Kyodo Textile Mill No. 3	100% destroyed
Kyodo Textile Mill No. 4	100% destroyed
Fuji Gas Yarn Mill	100% destroyed
Nippon Spinning and Weaving Company	100% destroyed
Nippon Woolen Thread Company	100% destroyed
Kanegafuchi Spinning Mill	100% destroyed
Regimental District Headquarters	100% destroyed

3. Targets Outside Built-up Area: (within 5 mile radius of center of city).

Numbered Targets:

90.20- 240	Kawasaki Aircraft Works	60.2% damaged by previous mission
90.20- 249	Kagamigahara Military Airport	75.4% damaged by previous mission
90.20-1811	Osaki Iron Works	None visible
90.20-1812	Kagamigahara Machine Works	None visible
90.20-1833	Mitsubishi Aircraft Works, Kagamigahara Plant	77.5% damaged by previous mission

Other Targets:

Powder Magazine and Infantry Barracks	None visible
Important Transformer Station	None visible
Textile Mill (reported 3.5 miles south of Gifu)	None visible
Two small industries in town 3.5 miles south of Gifu, also two small industries west of Gifu	None visible

References: AAF Air Objective Folder 90.20, 6 July 1944.
Emergency Provisional Edition, Gifu Prefecture,
Janis 84-1.

END

Area
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GIFU C-1
Damage Assessment
XXI B.C. - Mission No. 260
9-10 July '45
GIU-XXI Bom. Com.

2520 C 35 PTU 28 JUL 45

1 MILE

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

PART III - SECTION E - UTSUBE RIVER OIL REFINERY - DAMAGE
ASSESSMENT*

1. Summary of Damage:

a. This report assesses damage to the above target resulting from XXI Bomber Command Missions 209, 218, 232 and 261 of 18, 22, 26 June and 9/10 July 1945.

b. Roof area damage, as a result of these missions, is 938,370 sq. ft., or 49.4% of the total roof area. Tanks with a combined capacity of 84,240 barrels, 4% of the total original refinery tank capacity, were damaged.

c. Roof area damage, as a result of missions 209, 218 and 232, is 645,760 sq. ft., or 34% of the total roof area. Tanks with a combined capacity of 33,870 barrels, 1.6% of the total original refinery tank capacity, were destroyed.

d. Roof area damage, as a result of mission 261, is 292,610 sq. ft., or 15.4% of the total roof area. Tanks with a combined capacity of 50,370 barrels, 2.4% of the original refinery tank capacity, were destroyed.

e. Removal activity at this refinery has been extensive since the first coverage (3FR4M8 - 13 November 1944). Tanks with a combined capacity of 862,700 barrels, 41.6% of the original refinery tank capacity, and two buildings with a total roof area of 17,400 sq. ft. have been removed.

f. Damage for all missions is scattered throughout the entire refinery with the heaviest concentration being in the south-east section where nearly every building is damaged or destroyed.

2. Statistical Summary of Damage: (See original report)

* Based on XXI B.C. CIU D.A. Report No. 141.

ITEMIZATION OF NEW DAMAGE

DAMAGE IN SQUARE FEET

Number (Ref.A)	Roof area	Destroyed	Structural	Gutted	Minor	Total	Percent of roof	Function of buildings comment
24	50,200			30,000		30,000	60	Poss. electrolysis building
34	51,000			22,000		22,000	40	Methanol plant (poss.)
57	9,350	9,350				9,350	100	Unidentified
61	31,500			25,200		25,200	80	Haber building
103	57,000	22,800				22,800	40	Labor quarters
109a	3,550			3,550		3,550	100	Distillation complex
109b	4,250			4,250		4,250	100	"
110	5,825			5,825		5,825	100	"
112	5,600				5,600	5,600	100	Lubrication oil filtration
118	1,320		660			600	50	Pump house
134	4,900				4,900	4,900	100	"
159a	7,600		400			400	5	"
160	6,730		350			350	5	"
172	17,000		17,000			17,000	100	Main work shop
185	14,800			17,800		14,800	100	Unidentified
193	10,250					10,250	100	"
194	10,250		10,250			10,250	100	"
199	7,500		7,500			7,500	100	"
201	18,000					7,200	40	"
209	2,400	2,400				2,400	100	Temporary hut
216 a & b	5,700					5,700	100	Control section
217	3,150				3,150	3,150	100	Unidentified
218	2,700	2,700				2,700	100	Blending building
224	7,800	7,800				7,800	100	Sludge recovery building
231	5,330				5,330	5,330	100	Storage
234	5,330	5,330				5,330	100	"
236	5,330	5,330				5,330	100	"
241	5,330	5,330				1,070	20	"
243	5,330	1,070				3,350	40	Unidentified new construction
258	8,360					8,500	100	Water gas plant
273	8,500				8,500	3,175	25	Drum filling building and storage
277	12,700					6,400	50	"
278	12,700					1,240	20	"
281	6,200					7,400	100	Garage and truck loading building
291	7,400	7,400				13,200	100	Lubricating oil packing
295	13,200	13,200						

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D/A Report 141, cont'd.

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ITEMIZATION OF NEW DAMAGE (Cont'd)

Number (Ref.A)	Roof area	Destroyed	DAMAGE IN SQUARE FEET			Total	Percent of roof	Function of building; comment
			Structural	Gutted	Minor			
309	7,100	7,100				7,100	100	Storage tank - destroyed
317	8,650	8,650				8,650	100	Main pump house
TOTAL:		86,030	36,160	139,765	30,655	292,610		

ITEMIZATION OF OLD DAMAGE

12	26,000			26,000		26,000	100	Hydrogenation plant
13	6,350			6,350		6,350	100	Compressor house
17	2,400	2,400				2,400	100	Unidentified
36	14,200			14,200		14,200	100	Pump house
44	3,900	3,900				3,900	100	Unidentified
45	7,400	7,400				7,400	100	"
46	11,650			11,650		11,650	100	"
47	14,200			14,200		14,200	100	"
48	3,750	3,750				3,750	100	Work shop
49	3,750	3,750				3,750	100	" "
50	3,750	3,750				3,750	100	" "
51	3,750	3,750				3,750	100	" "
52	15,800	15,800				15,800	100	Boiler house
54	11,200	11,200				11,200	100	Unidentified
61	31,500					31,500	100	Haber building
71a	10,000	10,000			6,300	6,300	20	Machine or oven house
72b	11,150					11,150	100	Unidentified
73	7,000	7,000	11,150			7,000	100	"
75a	19,000					19,000	100	Machine house
76	3,000			19,000		3,000	100	Unidentified
77	2,200			3,000		2,200	100	"
78	3,500				2,200	3,500	100	"
79	19,100				3,500	19,100	100	Work shop
80	19,100	19,100	5,000		14,100	19,100	100	" "
81	16,100					16,100	100	" "
100	23,000	9,200		16,100		23,000	100	" "
103	57,000	34,200		4,600		57,000	60	Labor quarters
107	11,200					11,200	60	" "
					11,200	11,200	100	Unidentified

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D/A Report 141, Cont'd.

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ITEMIZATION OF OLD DAMAGE (CONT'D)

Number (Ref.A)	Roof area	Destroyed	DAMAGE IN SQUARE FEET				Percent of roof	Function of building; comment
			Structural	Gutted	Minor	Total		
107a	1,060	1,060				1,060	100	Unidentified
135 a-b-c	5,800			5,800		5,800	100	Distillation unit
144	1,380	1,380				1,380	100	1 tank - 42' diameter
145	1,380	1,380				1,380	100	1 " " "
146	1,380	1,380				1,380	100	1 " " "
147	1,380	1,380				1,380	100	1 " " "
151	1,730			1,730		1,730	100	Furnaces
152	1,730			1,730		1,730	100	"
153	1,730	1,730				1,730	100	"
180	19,100	8,000		11,100		19,100	100	Go-downs
181	30,600	15,300		15,300		30,600	100	" "
182	21,500	5,000		16,500		21,500	100	" "
183	21,500				21,500	21,500	100	" "
187	1,600	1,600				1,600	100	Stores building
189	14,500				3,600	3,600	25	Boiler house
190	10,300		5,150			5,150	50	Unidentified
191	11,200		5,600			5,600	50	"
195	10,250				10,250	10,250	100	"
196	10,250				10,250	10,250	100	"
197	7,500		7,500			7,500	100	Poss. M.T. depot
201	18,000			6,000		6,000	33	Unidentified
202	3,200				3,200	3,200	100	"
203	5,550				5,550	5,550	100	"
204	12,800		12,800			12,800	100	"
205	18,600	13,600				13,600	100	"
206	10,600	18,600				18,600	100	"
207	2,800					2,800	100	Temporary huts
208	2,400	2,400		2,800		2,800	100	" "
219	9,600	9,600				9,600	100	Lead-sodium alloy plant
228	7,900		7,900			7,900	100	Ethyl-chloride storage
230	8,900			5,900		8,900	100	Storage building
237	5,330				5,330	5,330	100	" "
238	5,330				5,330	5,330	100	" "
239	5,330			2,000	3,330	5,330	100	" "
240	5,330			5,330		5,330	100	" "

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D/A Report 141, Cont'd.

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ITEMIZATION OF OLD DAMAGE (CONT'D)

Number (Ref.A)	Roof area	DAMAGE IN SQUARE FEET					Percent of roof	Function of building; comment
		Destroyed	Structural	Gutted	Minor	Total		
244	5,330				5,330	5,330	100	Storage building
270	5,850	5,850				5,850	100	Material storage
271	21,360			21,360		21,360	100	Drum filling & storage buildings
272	21,360			21,360		21,360	100	" " " " "
274	12,700				5,080	5,080	40	" " " " "
275	4,400			2,200		2,200	50	Rolling stock servicing buildings
277	14,700		6,300			6,300	50	Drum filling building
279	3,100		3,100			3,100	100	" " "
280	12,700		5,080			5,080	60	" " "
TOTAL:		222,920	69,580	242,540	110,720	645,760		

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D/A Report 141, Cont'd.

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D/A Report 141, cont'd.

ITEMIZATION OF NEW TANK DAMAGE

Number (Ref A)	No. of Tanks	Volume (barrels)	Destroyed	Percent of volume	Function of tank; comment
63	2	10,000	5,000	50	Acid tanks - 1 destroyed
127	18	28,000	6,200	22	Run-down tanks - 4 destroyed
140	15	6,900	1,840	26	Small run-down tanks - 4 dest.
141	14	11,320	5,800	52	" " " " - 2 dest.
154	1	6,200	6,200	100	Large " " " - 1 dest.
157	18	32,400	3,600	11	Small " " " - 1 dest.
171	17	38,000	20,800	55	Run-down tanks - 9 destroyed
294	8	8,340	1,500	18	Storage tanks (camouflaged) - 1 dest.
309	1	1,250	1,250	100	Large storage tank - 1 dest.
TOTAL:			52,190		

ITEMIZATION OF OLD TANK DAMAGE

68	1	8,000	8,000	100	
141	14	11,320	920	8.1	Small run-down tanks - 2 dest.
142	14	11,320	920	8.1	" " " " - 2 dest.
144	1	5,700	5,700	100	Large " " " - 1 dest.
145	1	5,700	5,700	100	" " " " - 1 dest.
146	1	5,700	5,700	100	" " " " - 1 dest.
147	1	5,700	5,700	100	" " " " - 1 dest.
307	1	1,250	1,250	100	Storage tank - destroyed
TOTAL:			33,890		

TANK REMOVAL

Number (Ref A)	No. of tanks	Volume (barrels)	Removed	Percent of volume	Function of tank; comment
140	15	6,900	2,760	40	Small run-down tanks - 6 removed
141	14	11,320	2,760	24	" " " " 6 removed
142	14	11,320	2,300	20	" " " " 5 removed
143	15	6,900	3,680	53	" " " " 8 removed
156a	1	6,200	6,200	100	Not listed in (Ref A) but are similar to tank 156.
b	1	6,200	6,200	100	" " " " " " " "
c	1	6,200	6,200	100	" " " " " " " "
157	18	32,400	18,000	55	Small run-down tanks - 10 removed
158	18	32,400	12,600	39	" " " " 7 removed
299	1	72,000	72,000	100	Large storage tank - removed
302	1	72,000	72,000	100	" " " " "
303	1	72,000	72,000	100	" " " " "
304	1	72,000	72,000	100	" " " " "
305	1	72,000	72,000	100	" " " " "
308	1	29,000	29,000	100	" " " " "
310	1	29,000	29,000	100	" " " " "
311	1	96,000	96,000	100	" " " " "
312	1	96,000	96,000	100	" " " " "
314	1	96,000	96,000	100	" " " " "
315	1	96,000	96,000	100	" " " " "
TOTAL:			862,700		

- References: A. AC/AS, Functional Analysis Report No. F/A-155, 12 June 1945
Target 90.20-1684
B. CIU Damage Assessment Report 106, 28 June 1945, Yokkaichi

Photos used: Pre-strike: 3PR4MB-3: 1, 2; 3PR5M287-2: 21-23
Post-strike: 3PR5M315-4L: 11-14; 3PR5M331-4R: 20, 21

- Inclosures: 1. Blow-up (3PR5M174-2: 27) showing damage and removal
2. Post-strike mosaic

Approved: *R. L. D. Darby*
HAMILTON D. DARBY
MAJOR, AC

DISTRIBUTION: "B"

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By: NARA Date 5/14/11



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S E C R E T

ANNEX

E

CONSOLIDATED STATISTICAL SUMMARY

Missions No. 257, 258, 259, 260 and 261

9/10 July 1945

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S E C R E T

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XXI BOMBER COMMAND

CONSOLIDATED STATISTICAL SUMMARY OF COMBAT OPERATIONS

FORM 34

257 - 261

MISSION NO.9 July 1945

Mission #257 - 58th Wing - Sendai Urban Area (PV and PR)
Mission #258 - 73rd Wing - Sakai Urban Area (PV and PR)
Mission #259 - 313th Wing - Wakayama Urban Area (PV and PR)
Mission #260 - 314th Wing - Gifu Urban Area (PV and PR)
Mission #261 - 315th Wing - Utsube River Oil Refinery, Yokkaichi (PV and PR)

EFFECTIVENESS OF MISSIONS

Aircraft Airborne 572
Percent Of Aircraft On Hand 70.7%

Aircraft Bombing Primary Target . . . 536
Percent Of Bombing Aircraft Airborne. 95.2%

Bombs Dropped On Primary Target 3858 Tons

Bombs Dropped On Other Targets. 43 Tons

Bombing Results - Preliminary reports indicate the
following damage;

Mission #257 - No damage assessment available to date.
Mission #258 - No damage assessment available to date.
Mission #259 - No damage assessment available to date.
Mission #260 - 1.93 sq miles or 74% of built-up area destroyed.
Mission #261 - 20% of roof area damaged.

COST OF MISSIONS

Aircraft Lost 2
Percent Of Aircraft Airborne. 0.3%

Aircraft Damaged. 20
Percent Of Aircraft Airborne. 3.5%

Crew Member Casualties. 1
Percent Of Total Participating.02%

Aircraft Landing At Iwo Jima. 21

Issued 17 July 1945

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33RD STATISTICAL CONTROL UNIT

SECRET

MISSION July 1945

AIRCRAFT PARTICIPATING

DATE

UNIT	A/C ON HAND	A/C SCHEDULED	A/C FAILING TO TAKE OFF	A/C AIRBORNE	TIME OF TAKE OFF			TIME OF RETURN			A/C BOMBING PRIMARY TARGET	A/C BOMBING SECONDARY TARGET	A/C BOMBING OTHER TARGETS	A/C COMPLETING OTHER TYPE MISSIONS	TOTAL A/C EFFECTIVE	TOTAL A/C NON-EFFECTIVE
					DATE	FIRST	LAST	DATE	FIRST	LAST						
58WG	184	120	1	119	9 July	0703 Z	0841 Z	9-10 July	Mission #257		113	-	-	-	113	6
		12a	-	12							10	-	1	-	11	1
		2b	-	2							-	-	-	2	2	-
		1c	-	1							-	-	-	1	1	-
73WG	187	120	8	112	"	0906 Z	1038 Z	"	Mission #258		103	-	3	-	106	6
		12a	-	12							12	-	-	-	12	-
		2b	-	2							-	-	-	2	2	-
		1c	-	1							-	-	-	1	1	-
313WG	138	93	-	97 a	"	0800 Z	0848 Z	9 July	Mission #259		96	-	-	-	96	1
		12a	-	12							12	-	-	-	12	-
		1g	-	1							-	-	-	1	1	-
314WG	187	123	1	123 e	"	0700 Z	0809 Z	"	Mission #260		118	-	1	-	119	4
		12a	-	12							11	-	-	-	11	1
		1b	-	1							-	-	-	1	1	-
		1h	-	1							-	-	-	1	1	-
315WG	113	65	2	64 f	"	0645 Z	0739 Z	"	Mission #261		61	-	1	-	62	2
TOTAL	809	521	12	515	9 July	0645 Z	1038 Z	9-10 July			491	-	5	-	496	19
		48a	-	48							45	-	1	-	46	2
		9	-	9							-	-	-	9	9	-

a Pathfinder aircraft.
b Super dumbb aircraft.
c Weather aircraft.
d Includes 4 spare A/C.
e Includes 1 spare A/C.
f Includes 1 spare A/C.
g Wind run aircraft.
h Radar weather recon. A/C.

NOTE: XXI BC Field Order #97 called for the following efforts:

#257 - 58th Wing - Normal effort.
#258 - 73rd Wing - Normal effort.
#259 - 313th Wing - 3 groups.
#260 - 314th Wing - Normal effort.
#261 - 315th Wing - 60 aircraft.

Aircraft Landing At Iwo Jima:
Mission #257 - 58th Wg - 13 aircraft.
Mission #258 - 73rd Wg - 2 aircraft.
Mission #259 - 313th Wg - 1 aircraft.
Mission #260 - 314th Wg - 3 aircraft.
Mission #261 - 315th Wing - 2 aircraft.

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MISSION 257 - 261

DATE 9 July 1945

BREAKDOWN OF ALL AIRCRAFT FAILING TO BOMB PRIMARY TARGET

UNIT	MECHANICAL FAILURE			PERSONNEL ERROR			FLIGHT CONDITIONS			ENEMY ACTION			OTHER		
	Non-Effective	Bombed Secondary	Bombed Other	Non-Effective	Bombed Secondary	Bombed Other	Non-effective	Bombed Secondary	Bombed Other	Non-Effective	Bombed Secondary	Bombed Other	Non-Effective	Bombed Secondary	Bombed Other
58WG	6	-	1	1 <u>a</u>	-	-	<u>Mission #257</u>	-	-	-	-	-	-	-	-
73WG	3	-	3	3 <u>b</u>	-	-	<u>Mission #258</u>	-	-	-	-	-	-	-	-
313WG	-	-	-	1 <u>a</u>	-	-	<u>Mission #259</u>	-	-	-	-	-	-	-	-
314WG	5 <u>c</u>	-	1	-	-	-	<u>Mission #260</u>	-	-	-	-	-	-	-	-
315WG	2	-	1	-	-	-	<u>Mission #261</u>	-	-	-	-	-	-	-	-
TOTAL	16	-	6	5	-	-	-	-	-	-	-	-	-	-	-

a Maintenance personnel error.

b Two air crew personnel errors and one maintenance personnel error.

c Includes 1 pathfinder aircraft.

S E C R E T

S E C R E T

MISSIONS 257 - 261

B O M B I N G R U N

DATE 9 July 1945

UNIT	TARGET BOMBED		AIRCRAFT DROPPING BOMBS	TIME OF RELEASE		ALT. OF RELEASE		TARGET VISIBLE			TARGET NOT VISIBLE			
	NAME OF TARGET	TYPE		EARLIEST	LATEST	LOWEST	HIGHEST	VISUAL SIGHTING ONLY	RADAR RUN WITH VISUAL CORRECTIONS	DROPPING ON LEADER	VIS. SIGHTING ON REFERENCE OR OFFSET PT.	RADAR RUN	DEAD RECK- ONING	DROPPING ON LEADER
58WG	Sendai Urban Area	P	113	1511 Z	1705 Z	10000	10600	89	-	-	-	24	-	-
	Sendai Urban Area	P	10 <u>a</u>	1503 Z	1545 Z	10200	10700	7	-	-	-	3	-	-
	Katsuura	TO	1	1419 Z	-	10300	-	1	-	-	-	-	-	-
73WG	Mission #258													
	Sakai Urban Area	P	104 <u>b</u>	1636 Z	1806 Z	10000	11350	4	1	-	-	99	-	-
	Sakai Urban Area	P	12 <u>a</u>	1633 Z	1659 Z	10300	11200	-	-	-	-	12	-	-
	Kochi	TO	2	1758 Z	1759 Z	9500	11190	-	-	-	-	2	-	-
	Susaki	TO	1	1633 Z	-	11400	-	-	-	-	-	1	-	-
313WG	Mission #259													
	Wakayama Urban Area	P	96	1458 Z	1648 Z	10200	11600	54	35	-	-	7	-	-
	Wakayama Urban Area	P	12 <u>a</u>	1458 Z	1516 Z	10200	11000	7	1	-	-	4	-	-
314WG	Mission #260													
	Gifu Urban Area	P	118	1439 Z	1620 Z	14720	17700	81	9	-	1	27	-	-
	Gifu Urban Area	P	11	1434 Z	1520 Z	15300	16500	3	2	-	2	4	-	-
	Shingu	TO	1	1447 Z	-	12600	-	-	-	-	-	1	-	-
	Nakazumi	TO	1 <u>c</u>	1559 Z	-	15600	-	1	-	-	-	-	-	-
315WG	Mission #261													
	Utsube Oil Refinery, Yokmiche	P	61	1340 Z	1438 Z	15550	16950	6	4	-	-	51	-	-
	Honshu Island	TO	1	1408 Z	-	16450	-	1	-	-	-	-	-	-
TOTAL	Primary Targets	P	492 <u>b</u>	1340 Z	1806 Z	10000	17700	234	49	-	1	208	-	-
	Primary Targets	P	45 <u>a</u>	1434 Z	1659 Z	10200	16500	17	3	-	2	23	-	-

a Pathfinder aircraft.b Includes weather control aircraft (auxiliary).c Aircraft also bombed primary target.

S E C R E T

SECRET

MISSION 9 July 1945

CORRECTED COPY

DISPOSITION OF BOMBS

DATE

UNIT	TYPE & WEIGHT OF BOMB	FUZE SETTING		LOADED ON AIR- BORNE AIRCRAFT		RELEASED ON TARGETS		TARGETS OF OFF.		JETTISONED		RETURNED		UNKNOWN	
		Nose	Tail	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons
58WG	AN-M17A1 500# I.C.	*	-	2257	564.3	2155	538.7	-	-	102	25.6	-	-	-	-
	AN-M17A2 100# I.B.	Inst.	-	11896	410.2	10806	372.6	182	6.3	903	31.1	5	.2	-	-
	M-46 Photoflash			8	-	8	-	-	-	-	-	-	-	-	-
							Mission #258								
73WG	AN-M17A2 100# I.B.	Inst.	-	11697	403.3	10651	367.3	184	6.3	862	29.7	-	-	-	-
	E-36 500# I.C.	*	-	1657	276.2	1536	256.0	80	13.3	41	6.9	-	-	-	-
	E-46 500# I.C.	*	*	778	155.6	778	155.6	-	-	-	-	-	-	-	-
	M-46 Photoflash			11	-	11	-	-	-	-	-	-	-	-	-
313WG	AN-M17A2 100# I.B.	Inst.	-	13050	450.0	12803	441.5	-	-	242	8.3	5	.2	-	-
	AN-M17A1 500# I.C.	*	-	1461	365.3	1435	358.8	-	-	26	6.5	-	-	-	-
							Mission #260								
314WG	E-46 500# I.C.	-	*	2568	513.6	2387	477.4	12	2.4	169	33.8	-	-	-	-
	AN-M17A2 100# I.B.	Inst.	-	12671	436.8	12221	421.4	184	6.3	221	7.6	45	1.5	-	-
	M-46 Photoflash			56	-	54	-	-	-	2	-	-	-	-	-
							Mission #261								
315WG	AN-M164 500# G.P.	.025	N.D.	2008	502.0	1875	468.7	32	8.0	100	25.0	1	.3	-	-
								-	-	128	32.1	-	-	-	-
								-	-	128	32.1	-	-	-	-
								-	-	128	32.1	-	-	-	-
TOTAL	AN-M17A1 500# I.C.			3718	929.6	3590	897.5	550	18.9	2228	76.7	55	1.9	-	-
	AN-M17A2 100# I.B.			49314	1700.3	46481	1602.8	12	2.4	169	33.8	-	-	-	-
	E-46 500# I.C.			3346	669.2	3165	633.0	80	13.3	41	6.9	-	-	-	-
	E-36 500# I.C.			1657	276.2	1536	256.0	-	-	2	-	-	-	-	-
	M-46 Photoflash			75	-	73	-	-	-	100	25.0	1	.3	-	-
	AN-M164 500# G.P.			2008	502.0	1875	468.7	32	8.0	100	25.0	1	.3	-	-
								674	42.6	2668	174.5	56	2.2	-	-
	TOTAL			60118	4077.3	56720	3858.0								

* Incendiary clusters set to open 5000 feet above target. NOTE: Bombs Released Safe On Target - Mission 258 - 19 M-47A2's with complete arming wires and 13 M-47A-2's with broken arming wires. Mission 260 - 8 E-46's with complete arming wires; 24 M-47A2's with complete arming wires and 102 M-47A2's with broken arming wires.

SECRET

S E C R E T

MISSION 257 - 261
DATE 9 July 1945

AIRCRAFT LOST AND DAMAGED

PERSONNEL CASUALTIES

AIRCRAFT LOST AND DAMAGED																					
AIRCRAFT LOST								AIRCRAFT DAMAGED								PERSONNEL CASUALTIES					
UNIT	ENEMY A/C	ENEMY A/A	ENEMY A/C & A/A	ACC. & MECH.	OTHER	UN- KNOWN	TOTAL	ENEMY A/C	ENEMY A/A	ENEMY A/C & A/A	ACC. & MECH.	OWN GUNS	OTHER	UN- KNOWN	TOTAL		TOTAL PARTICI- PATING	KILLED	MISS- ING	WOUNDED & INJURED	TOTAL CASUALTIES
															MAJOR	MINOR					
58WG	-	-	-	1 a	-	-	1	-	6	Mission #257	-	-	-	-	-	6	1542	-	-	1	1
73WG	-	-	-	-	-	-	None	1	5	Mission #258	1	1	-	-	-	1	7	1459	-	-	None
313WG	-	-	-	-	-	-	None	-	1	Mission #259	-	-	-	-	-	1	-	1227	-	-	None
314WG	-	-	-	1 b	-	-	1	1	-	Mission #260	-	-	-	-	-	1	-	1560	-	-	None
315WG	-	-	-	-	-	-	None	1	1	Mission #261	-	2	-	-	-	1	3	651	-	-	None
TOTAL	-	-	-	2	-	-	2	3	13		1	3	-	-	-	4	16	6439	-	-	1

a Engine trouble on take-off. Aircraft ran off runway and burst into flames. Entire crew safe.

b On return from target #4 engine caught fire. Fire spread into wing and out of control. Crew bailed out and aircraft exploded in mid air. All eleven crew members saved.

S E C R E T

S E C R E T

MISSION _____ 257 - 261

DATE _____ 9 July 1945

ENEMY OPPOSITION AND AMMUNITION EXPENDITURE

UNIT	ENEMY A/C SIGHTED	ATTACKS BY E/A	ENEMY A/C DESTROYED & DAMAGED			50 CALIBER AMMUNITION EXPENDITURE					
			DESTROYED	PROBABLY DESTROYED	DAMAGED	FIRE IN COMBAT	TEST FIRED	JETTISONED	ON LOST A/C	TOTAL	
	58 WG	10	1		-	-	Mission #257 140	-	-	1200	1340
	73 WG	15	5		-	-	Mission #258 -	30	-	-	30
	313 WG	10	-		-	-	Mission #259 -	-	-	-	-
	314 WG	10	3		-	-	Mission #260 100	-	-	-	100
	315 WG	15	2		-	-	Mission #261 90	4445	-	-	4535
	TOTAL	50	11		-	-	330	4475	-	1200	6005

S E C R E T

S E C R E T

MISSIONS 257 - 261

DATE 9 July 1945

FLIGHT DATA & FUEL CONSUMPTION

MISSION NUMBER	#257	#258	#259	#260	#261
UNIT	58TH WING	73RD WING	313TH WING	314TH WING	315TH WING
AIRCRAFT CONSIDERED	102	116	100	124	60
AVERAGE FLYING TIME	15:35	13:28	13:24	14:39	13:32
FUEL CONSUMED:					
Average	5967	5779	5647	5970	5549
Maximum	6500	6451	6109	6478	5949
Minimum	5580	5134	5160	5608	5217
FUEL REMAINING:					
Average	673	812	951	685	1233
Maximum	1075	1431	1340	1142	1568
Minimum	200	63	519	179	771
AVG. GALS. USED PER HOUR	383.0	429.0	421.4	407.5	410.1
TOTAL USED ON AIRBORNE A/C	788555	693938	617441	810339	348205

WEIGHT DATA

NO. AIRCRAFT AIRBORNE	131	125	109	135	64
AVG. BASIC WT. OF AIRCRAFT	74925	75050	74768	75653	71328
AVERAGE USEFUL LOAD	59528	58637	59018	59948	62608
AVG. NO. OF BOMBS LOADED	Mixed Load	Mixed Load	Mixed Load	Mixed Load	Mixed Load
AVG. WT. OF BOMBS LOADED	14372	13972	14617	14676	16811
AVERAGE FUEL LOADED	6646	6593	6586	6657	6785
AVG. WT. OF FUEL LOADED	39876	39558	39516	39942	40710
AVERAGE MISC. WEIGHT	5280	5107	4885	5330	5087
AVG. GROSS WT. AT TAKE OFF	134453	133687	133786	135601	133936

Bomb Weights: M-17A1 - 465 lbs.
M-47A2 - 70 lbs.
E-46 - 425 lbs.
E-36 - 360 lbs.
M-46 - 52 lbs.
M-64 (TNT) - 535 lbs.
M-64 (Comp B) - 550 lbs.

S E C R E T

S E C R E T

ANNEX

F

XXI BOMBER COMMAND FIELD ORDER

Missions No. 257, 258, 259, 260 and 261

9/10 July 1945

- 74 -

S E C R E T

SECRET

Auth: CG XXI BC
Initials: JJC
Date: 8 JUL 45

FIRLD ORDERS)
:
NUMBER 97)

XXI BOMBER COMMAND
GUAM
8 July 1945 - 1700K

1. Omitted
2. XXI Bomber Command attacks SENDAI, SAKAI, KOFU, and WAKAYAMA Urban Areas on night 9/10 July 1945.
3. a. 58th Wing:

- (1) Primary Visual and Radar Target: SENDAI Urban Area

MPI Force Required

057111 Normal Effort

MPI Reference: XXI BomCom Litho-Mosaic SENDAI 90.38 Urban.

- (2) Route:

Base
Iwo Jima
3550N - 14110E
3749N - 1405930E (IP)
Target
Right Turn
3500N - 14130E
Iwo Jima
Base

- (3) Altitude Enroute to Target: 5,000 to 5,800 ft., and 8,000 to 8,800 ft.
- (4) Altitude of Attack: 10,000 to 10,800 ft.
- (5) Bomb Load: 2 groups - M-47 IBs
2 groups - M-17 Clusters.
- (6) Bombing Airspeed: 195 C.I.A.S.
- (7) Altitude Enroute from Target: 12,000 ft. or above.
- (8) Two (2) R.C.M. aircraft will orbit target area during strike at 14,000 and 15,000 ft.
- (9) Takeoff: 091700K.

- b. 73rd Wing:

- (1) Primary Visual and Radar Target: SAKAI Urban Area

MPI Force Required

081079 Normal Effort

MPI Reference: XXI BomCom Litho-Mosaic SAKAI Area 90.25 - Urban.

488/5

SECRET

SECRET

(2) Route:

Base
Iwo Jima
3331N - 13346E
3419N - 1344130E (IP)
Target
Right Turn
Iwo Jima
Base.

- (3) Altitude Enroute to Target: 5,000 to 5,800 ft., and 8,000 to 8,800 ft.
(4) Altitude of Attack: 10,000 to 10,800 ft.
(5) Bombing Airspeed: 220 C.I.A.S.
(6) Bomb Load: 2 groups - M-47 IBs
2 groups - Clusters containing M-69 bombs.
(7) Altitude Enroute from Target: 12,000 ft. or above.
(8) Takeoff: 091900K.

c. 313th Wing:

- (1) Primary Visual and Radar Target: WAKAYAMA Urban Area

MPI

Force Required

077102

3 groups

MPI Reference: XXI BomCom Litho-Mosaic WAKAYAMA Area 90.25
Urban.

Offset Aiming Point: 005020.

(2) Route:

Base
Iwo Jima
331530N - 13410E
3351N - 13448E (IP)
Target
Right Turn
Iwo Jima
Base.

- (3) Altitude Enroute to Target: 4,000 to 4,800 ft., and 7,000 to 7,800 ft.
(4) Altitude of Attack: 10,000 to 10,800 ft.
(5) Bomb Load: 2 groups - M-47 IBs
1 group - M-17 Clusters.
(6) Bombing Airspeed: 195 C.I.A.S.
(7) Altitude Enroute from Target: 12,000 ft. or above.
(8) Takeoff: 091800K.

SECRET

F.O. #97

d. 314th Wing:

- (1) Primary: Visual and Radar Target: . GIFU Urban Area .

MPI

Force Required

061062

Normal Effort

MPI Reference: XXI BomCom Litho-Mosaic GIFU Area 90.20 Urban.

- (2) Route:

Base

Iwo Jima

3353N - 13608E

3520N - 13605E (IP)

Target

3528N - 13710E

343730N - 13803E

Iwo Jima

Base.

- (3) Altitude Enroute to Target: 3,000 to 3,800 ft., 6,000 to 6,800 ft., and 9,000 to 9,800 ft.

- (4) Altitude of Attack: 15,000 to 15,800 ft.

- (5) Bomb Load: 2 groups - M-47 IBs
2 groups - Clusters containing M-69 bombs.

- (6) Bombing Airspeed: 195 C.I.A.S.

- (7) Altitude Enroute from Target: 15,000 ft. or above.

- (8) Takeoff: 091700K

e. 315th Wing:

- (1) Primaty Visual and Radar Target: . 90.20-1684

MPI

Force Required

068019

60 Aircraft

MPI Reference: XXI Bom Com Litho-Mosaic YOKKA ICHI Area -
UTSUBE RIVER OIL REFINERY 90.20 - 1684.

- (2) Route:

Base

Iwo Jima

343430N - 13701E (IP)

Target

Left turn avoiding

flak areas

Iwo Jima

Base.

- (3) Altitude of Attack: 15,000 to 16,000 ft.

- (4) Bomb Load: 500 lb. GPs fused 1/40 nose, non delay tail.

F. O. #97

- (5) Altitude Enroute from Target: Climb immediately after bombs away to 17,000 ft. in order to avoid approaching IP for GIFU.
- (6) Takeoff: 091700K.
- x. (1) Method of Attack: By individual aircraft compressing force into strike time of 70 minutes maximum.
- (2) A/C-loaded with M-47 IBs will take off in order to strike first.
- (3) Bomb Fuzing: M-47 IBs - instantaneous nose
All clusters - fused to open 5,000 ft. above the target.
- (4) Intervalometer Setting: M-47 IBs - 100 ft.
All clusters - 50 ft.

4. Tactical Mission Numbers:

SENDAI	-	No. 257
SAKAI	-	No. 258
WAKAYAMA	-	No. 259
GIFU	-	No. 260
1684	-	No. 261.

- 5. a. (1) XXI BomCom SOI and SOP for strike reports, contact reports and IFF procedures.
- (2) Each flight squadron will be equipped to barrage jam the region 190-210 megacycles.
- (3) Observations of the extent and reliability of the barrage will be made while over the target.
- (4) Spot jamming will be conducted over the frequency ranges 180-190 and 210-220 megacycles, as desired by the wing Commanding General and as governed by the capacity of each wing.
- (5) Jammers will be kept in operation at all times when closer than 50 miles to HONSHU and will be turned off at all other times, except for preflight and postflight frequency checks, which are to be made on the ground while the jammers are installed in the airplanes.
- (6) The special jamming aircraft for the 73rd Wing will be equipped to barrage jam the regions 190-210 and 72-84 megacycles. Spot jamming will be conducted over the frequency ranges 180-190 and 210-220 megacycles as desired by the Wing Commander and as governed by the capacity of each wing. In addition, all strike aircraft will be equipped with one jammer within the barrage band listed above providing sufficient equipment is available.

b. No change.

BY COMMAND OF MAJOR GENERAL LeMAY:

OFFICIAL:

John B. Montgomery
JOHN B. MONTGOMERY
Colonel, G. S. C.
D C/S, Operations

A W KISSNER
Brigadier General, USA
Chief of Staff

R E S T R I C T E D

ANNEX

G

DISTRIBUTION

Missions No. 257, 258, 259, 260 and 261

9/10 July 1945

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R E S T R I C T E D

SECRET

PART III

MISSION NUMBER-259

DAMAGE



TARGETS

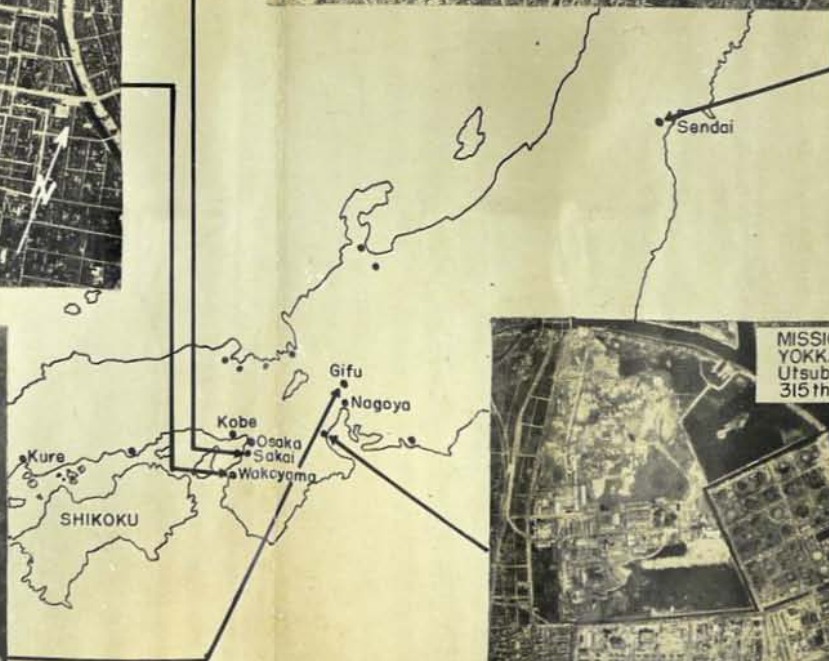


POST STRIKE

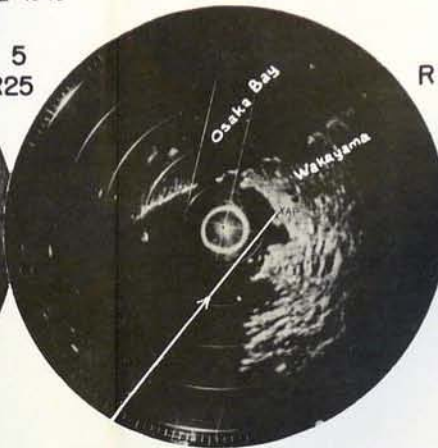
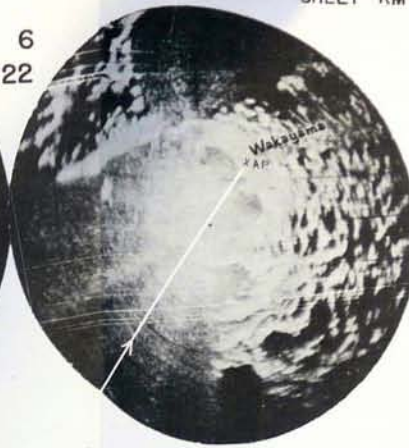
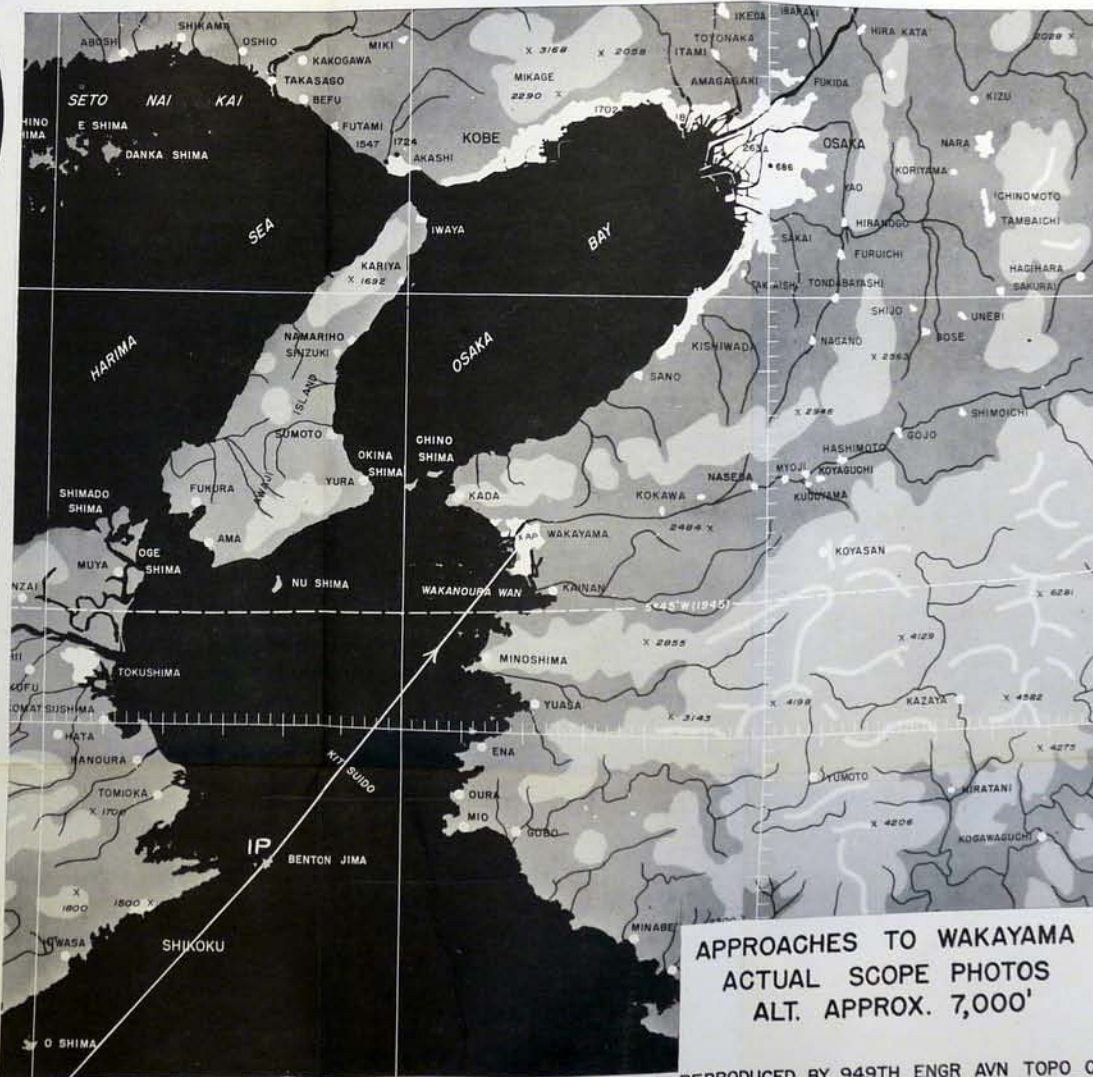


SECRET

SECRET
MEAN POINTS OF IMPACT



DECLASSIFIED
Authority: MWD 710001

4
R225
R256
R223
R502
R501
R55

APPROACHES TO WAKAYAMA
ACTUAL SCOPE PHOTOS
ALT. APPROX. 7,000'

CONFIDENTIAL

JULY 1945

SHEET RM-55

R 20



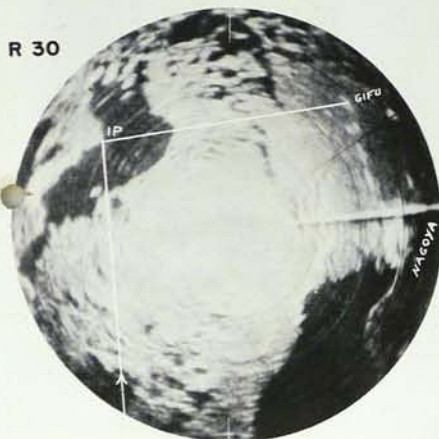
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R 20



R 30



R 50



APPROACHES TO GIFU
ACTUAL SCOPE PHOTOS
ALT. APPROX. 10,000' TO 15,000'

SHEET RM-39



REPRODUCED BY 949TH ENGR AVN TOPO CO

R 20



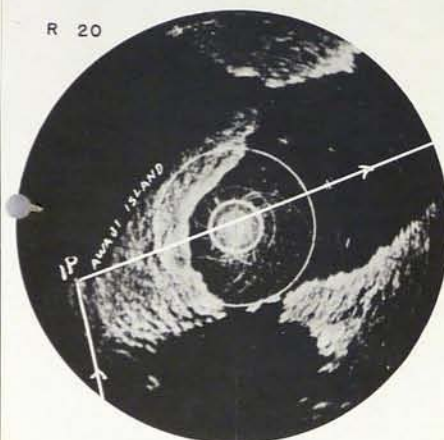
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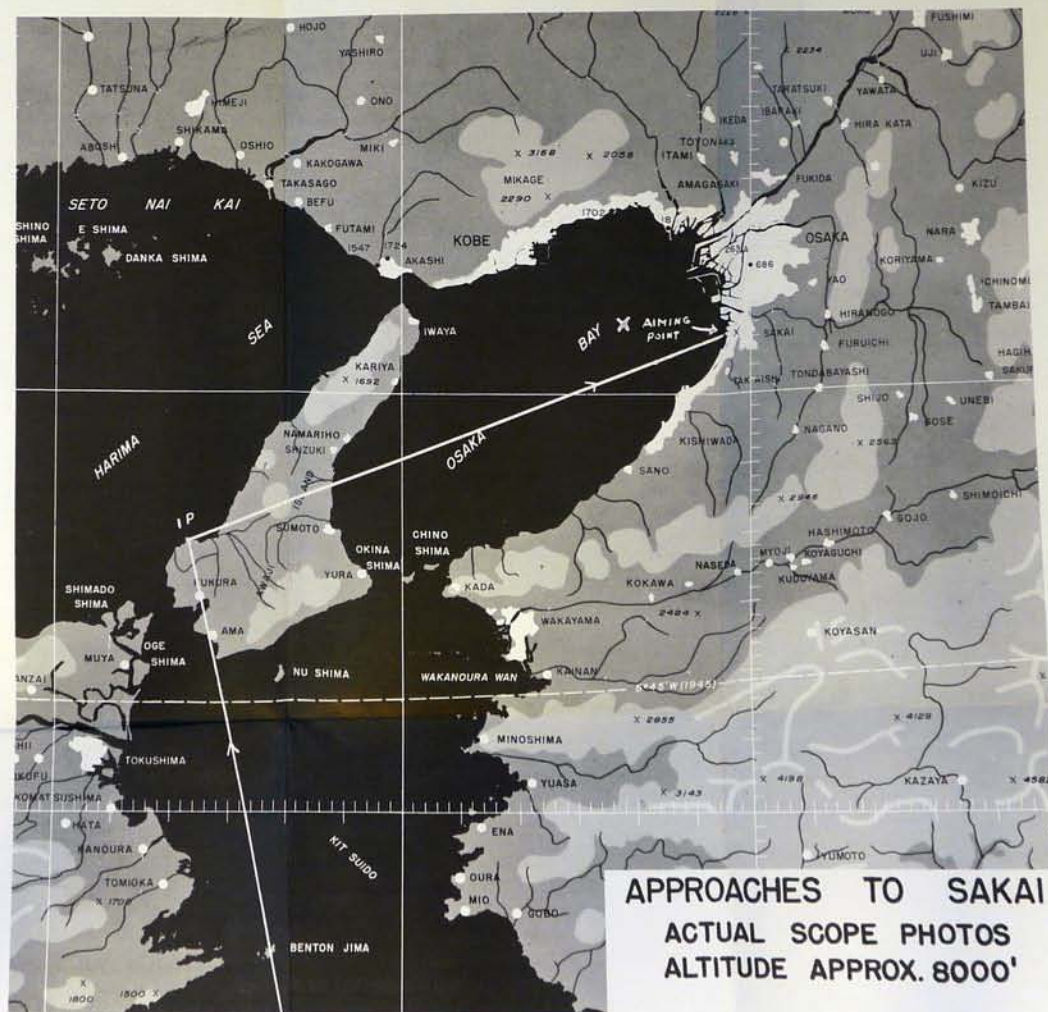
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R 20



R 50



APPROACHES TO SAKAI
ACTUAL SCOPE PHOTOS
ALTITUDE APPROX. 8000'

R 15

R 20

R 30

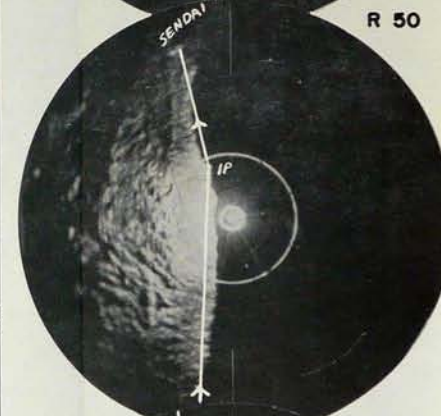
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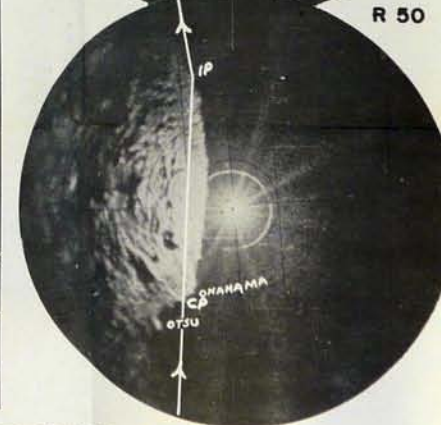
R 30



R 50



R 50



APPROACHES TO SENDAI
ACTUAL SCOPE PHOTOS
ALTITUDE 10,000 FEET

