

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 1/2nd. AUGUST, 1943.Mine layingSUMMARY

1. 29 aircraft went out minelaying. 26 laid their mines and all came back. 3 were abortive for various reasons, and one aircraft was damaged by flak.

Weather Forecast

2. Bases:- Occlusion at midnight from Sealand to Felixstowe to Limoges, with a belt of thunderstorms affecting many bases at dusk. West areas will be fit for the rest of the night, apart from strong winds in S.W., with squally conditions in Training Groups.

Germany:- Wide belt of thunderstorms or thundery rain covering all the S.E. of the North Sea, the Low Countries and Germany inland to 09-10°E, with heavy cloud to great heights.

W. France:- Cloud based at 1,500', falling to 600' in showers, covering hills in Brest peninsula. Visibility otherwise good. Further S., less risk of showers and cloud base more definitely 1,500-2,000', with good breaks. Strong surface winds.

Sorties

3.	(a)	No. of aircraft despatched.....	29
	(b)	" " " reporting mines laid in primary area.....	26
	(c)	" " abortive sorties (technical defect..... 2).....	3
		(weather..... 1)	
	(d)	" " aircraft missing.....	0
	(e)	" " mines laid.....	69

Weather Experienced

4. Bases:- Generally fit, with cloud above 1,500', falling to below 1,000' in local showers. Visibility good.

W. France:- Cloudy (base 1,500-2,500', tops 6,000'), becoming more broken southwards. Thundery showers in N. Visibility 12 miles.

Enemy Defences

5. No fighters were in evidence. A little flak was encountered from known defended points, one aircraft being hit.

Casualties

6. Apart from one Wellington which was hit by flak in the area of St. Nazaire, all our aircraft returned undamaged.

MLH/JT.
BC/S. 26342/1/ORS3,
2nd. October, 1943.

MINELEYD G. 1/2nd AUGUST, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		SORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				FRDN. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A	ATTACKED	NOT ATTACKED	
MINELEYD GLONDE R.	3	Str.III	11	11	-	-	-	-	-	-	-	-	-	33 mines
L. SALICE	3	Str.III	4	3	-	-	1	-	-	-	-	-	-	12 mines
LORIENT	4	Well.X	7	7	-	-	-	-	-	-	-	-	-	14 mines
ST. N. LAIDE	4	Well.X	7	5	-	-	2	1.0	-	-	-	-	-	10 mines
MINELEYD TOTAL			29	26	-	-	3	1.0	-	-	-	-	-	69 mines

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BOMBING COASTAL REPORT ON NIGHT OPERATIONS 2/3rd AUGUST, 1943.

HAMBURG : Duisburg : Minelaying : Leaflets.

SUMMARY

HAMBURG

1. A force of 740 aircraft was despatched to attack Hamburg for the fourth night since 24th. July. The P.F.F. had been ordered to use the Nowhagen ground marking technique, with H2S sky-marking in reserve. There was a slight risk of 10/10ths cumulo-nimbus at the target, but this was not considered sufficient to justify cancelling the raid. Unfortunately, weather conditions proved even more severe than had been expected, with solid cloud towering in places to 30,000' and heavy thunderstorms. As a result, the raid was completely disorganised and barely half the force reached Hamburg. Many bombed flak positions in the areas of Bremen, Cuxhaven and Wesermünde. 30 aircraft were lost. Reconnaissance photographs taken after this attack showed that, as a result of these 4 major efforts by the R.A.F. and 2 day raids by aircraft of the U.S.A.B.C., over three-quarters of Germany's second city were in ruins.

2. 3 Mosquitoes carried out a successful harassing raid on Duisburg. 2 others returned early. No casualties were sustained.

Minelaying

3. 5 Wellingtons, out of a force of 6, laid 6 mines in the Elbe Estuary at the beginning of the raid on Hamburg. 2 others had to return early, one crashing over England; the sixth was lost without trace.

Leaflets

4. 11 Wellingtons dispersed leaflets over various French towns without incident. A twelfth crashed shortly after taking off. All the others returned safely.

Weather Forecast

5. Midnight Frontal Positions:- (1) occlusion from 62°N 0°E to 50°N 05°E to 55°N 07½°E to E. of Cologne. (2) 60°N 00½°E to 55°N 01½°E to 50°N 04°E. These fronts are indefinite but are associated with a trough.

Bases:- Convection cloud dispersing; bases generally fit at dusk and for return (from Hamburg) with more than half cloud cover, cumulus and strato-cumulus base mainly above 2,000 ft, tops locally 15-20,000 ft. in N., 10-15,000 ft. in S. Local showers, risk of thunder in N. Cloud amounts probably less on return. Visibility moderate to good.

Germany:- Thunderstorms in N.W., persisting locally, but residual thunder cloud largely dispersing. Hamburg:- cloud conditions very doubtful - probably 6-10/10ths cirrus and only small amounts of low and medium cloud. At worst, 10/10ths cumulo-nimbus, tops 30,000 ft. Kiel is slightly more favourable. Route: more than half covered cumulus and strato-cumulus to 07-08°E, base 1-2,000 ft., tops 10-12,000 ft., local showers to 02-03°E. Ruhr: also doubtful, probably 7-10/10ths in various layers to 20,000 ft., risk of cumulo-nimbus, tops to 30,000'.

(2200 hours. Hamburg: patches of medium cloud between 10-20,000 ft., total amount of cloud below 18,000 ft probably less than 5/10ths., but slight risk of 10/10ths cumulo-nimbus, tops 30,000 ft.)

II. Italy:- Broken medium cloud. Thunderstorms over Alps.

France:- Convection cloud, dispersing to small amounts except in N.W.

Winds:- 750 mbs. 240°/25 mph to 03°E., thence 220°/35-40 mph. to Hamburg

500 mbs. 220°/55 m.p.h. for whole route, but vooring and decreasing to 250°/35 mph. for northern bases on return.

300 mbs. 220°/75 mph. vooring and decreasing to 250°/50 mph. for northern bases on return.

HAMBURG

Plan of Attack

Route 5420N/0700E - 5345N/0832E - 5300N/1000E - Target - 5400N/1000E - 5430N/0700E.

Method Ground marking(+sky-marking)

- (a) Route Markers T.I. red were to be dropped 73 miles 282° from Hamburg by 4 of the Blind Markers and 2 of the Visual Markers, maintained by 12 of the backers up.
- (b) 18 + 11 Blind Markers were to mark the aiming points with T.I. red, proceeding on the same heading and each releasing a string of flares at 6 sec. intervals.
- (c) 6 + 6 Visual Markers using red T.I. as guides were to mark the exact aiming points with T.I. yellow.
- (d) 28 + 12 Backers-up were to maintain the marking with T.I. green, aiming at T.I. yellow if seen, otherwise at the centre of T.I. green, with an overshoot of 2 sec. in either case. Early backers-up, if no T.I. yellow to be seen, were to aim at the centre of all T.I. red with an overshoot of 4 secs.
- (e) Main Force a/c were to aim at the centre of all T.I. green.
- (f) All Blind Markers and 7 of the Visual Markers (Y a/c) were to carry release point flares and, if more than 7/10th cloud was found at the target, they were to drop these in such a position that Main Force a/c aiming their bombs at them on an exact heading of 355 H. at a speed of 160 mph I.A.S. would hit the aiming point.

B. Timing Zero hour : 0200 hours. Duration of Attack : 0157-0249

1st, 2nd, 3rd, 4th waves aiming point in Hamburg

5th and 6th waves aiming point in Hamburg

If sky-marking was resorted to, the second aiming point would not be marked

Blind Markers.

18 at (Z-3) (Hamburg) & 11 at (Z+30) (Hamburg)

Visual Markers

6 at (Z-2) (Hamburg) & 6 at (Z+31) (Hamburg)

Backers-up

(Z) 3 a/c.
(Z+1)-(Z+27) 1 a/c
per min., except at (Z+24)

Main Force

(Z + 2)
to
(Z+49)

(Z + 32) 2 a/c

(Z + 33) - (Z + 43) 1 a/c
per min., except at (Z + 36) & (Z + 39)

(Z + 49) 1 a/c.

9. Marker Loads.

- Blind Markers. 17 Lanc + 11 Hal : (4 x 4 flares white) + 2 T.I. Red LB + 1 T.I. Red + (1 x 4 flares green/red stars) + H.E.
 4 Lanc: (4 x 4 flares white) + 3 T.I. Red LB + 1 T.I. Red + (1 x 4 flares green/red stars) + H.E.
- Visual Markers 2 Lanc + 3 Hal + 2 T.I. yellow LB + 3 T.I. yellow + (1 x 4 flares green/red stars) + H.E.
 2 Lanc : 2 T.I. yellow LB + 3 T.I. yellow + 1 T.I. red LB + (1 x 4 flares red/green stars) + H.E.
 5 Lanc: 2 T.I. yellow LB + 3 T.I. yellow + H.E.
- Backers-up 7 Lanc + 9 Hal + 3 Stir : 2 T.I. green LB + 2 T.I. green + H.E.
 13 Lanc : 2 T.I. green LB + 2 T.I. green + 1 T.I. red + H.E.
 8 Lanc/97 : no details given.

10. Tactics.

- (i) Aiming Points All crews were to be specially warned at briefing that the aiming point would be changed after the first four waves had attacked.
- (ii) Winds. Bombing wind would be passed at one of the following times (Z-10), (Z), (Z+10), (Z+20).
- (iii) "Spook" Markers were to be dropped by 5 Mosquitoes on the island of Nordstrand, 92 miles 333° from Hamburg. All main force crews were to be warned to avoid these.
- (iv) WINDOW Dropping zone - 5415N/0720E back to 5430N/0600E. Rate of discharge : 1 bundle per minute.
- (v) Maintenance of Height Lancaster a/c of 1 Group were not to jettison in order to gain extra height.

Sorties

11.	(a) No. of aircraft despatched.....	740	
	(b) " " " reporting attack on primary area.....	393	(54.2%)
	(c) " " " " " " " alternative area.....	197	(26.6%)
	(d) " " abortive sorties (weather.....	56	
		()	
	(technical defect or		
	(manipulative error... 55).....	120	(16.1%)
	(sickness of crew.....	31	
	(attached by fighters. 2)		
	(recalled.....	3	
	(e) No. of aircraft missing.....	30	(4.0%)

Weather Experienced

12. Bases:- Fit all night

Route:- Very variable cloud, generally 5/10ths over W.North Sea, tops 7,000 ft occasionally 12,000 ft., with extensive cirrus. Over E.North Sea, 10/10ths in several layers to 12,000 ft with thick cirrus above. Fog patches from 05-07⁰⁰E to target, cloud tops rising to 14-15,000 ft., frequently to 25,000 ft. or above. Violent thunderstorms, with intense static and lightning. Loderate to heavy being near cloud tops. Return similar, but rather less cloud over North Sea.

Hamburg:- 10/10ths cumulo-nimbus, tops generally 15,000 ft., frequently to 25-30,000. Heavy thunderstorms. Visibility nil. No moon.

13. Night Photographic Statistics.

No. of photographs examined.....	129
" " " showing (plotted within 3 miles..... 1)	
ground detail (" outside 3 miles..... 17).....	67
(unplotted.....)	49
No. of photographs showing (plotted within 3 miles..... 0)	
fire tracks. (" outside 3 miles..... 1).....	56
(unplotted.....)	55

The photographic sample is too small for any reliable estimate to be made of the number of aircraft bombing within 3 miles of the aiming-point.

Narrative of Attack

14. In view of the confusion caused by the Arctic conditions experienced at Hamburg, it is impossible to reconstruct the course of the attack in any detail. Green markers were available in the target area from zero + 10 to zero + 12, from zero + 24 to zero + 28. A few of the main force aircraft claimed to have bombed on these, but they were quickly hidden from sight by the cloud. Only one cluster was plotted, at zero + 10, S.E. of the Binnen Alster. Many were jettisoned live away from the target, but seem to have attracted no attention. The main force attacked from zero + 7 to zero +55 but, in view of the small percentage able to use markers, it is doubtful if any concentration was achieved.

Reconnaissance

15. Photographs covering the whole city except the extreme W., a section in the S.E. and part of the dock area including Blohm und Voss and Howaldtswerke revealed numerous new points of residential damage W. and N.W. of the Aussen Alster.

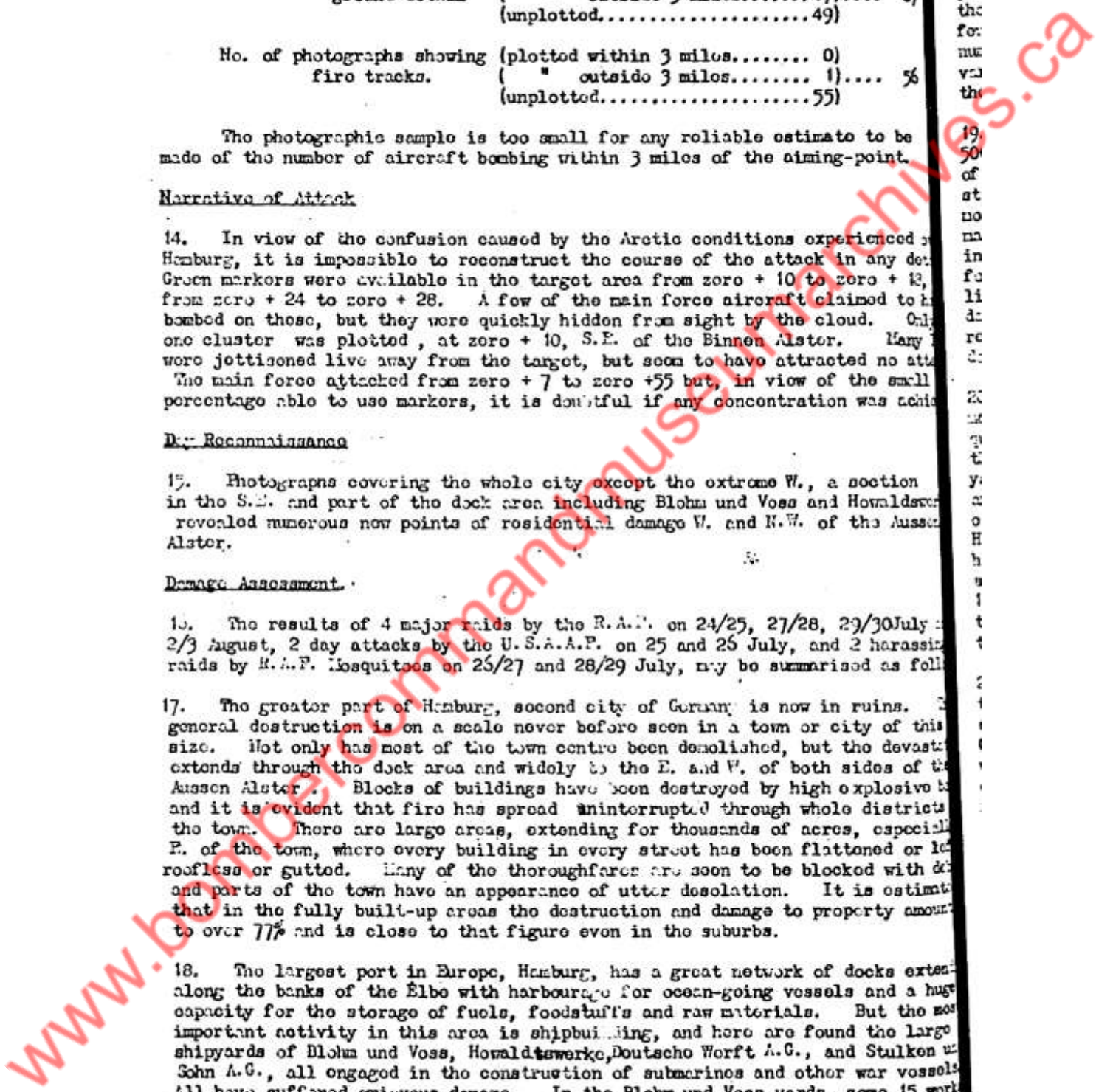
Damage Assessment.

16. The results of 4 major raids by the R.A.F. on 24/25, 27/28, 29/30 July and 2/3 August, 2 day attacks by the U.S.A.A.F. on 25 and 26 July, and 2 harassing raids by R.A.F. Mosquitoes on 25/27 and 28/29 July, may be summarised as follows:

17. The greater part of Hamburg, second city of Germany is now in ruins. The general destruction is on a scale never before seen in a town or city of this size. Not only has most of the town centre been demolished, but the devastation extends through the dock area and widely to the E. and W. of both sides of the Aussen Alster. Blocks of buildings have been destroyed by high explosive bombs and it is evident that fire has spread uninterrupted through whole districts of the town. There are large areas, extending for thousands of acres, especially E. of the town, where every building in every street has been flattened or left roofless or gutted. Many of the thoroughfares are seen to be blocked with debris and parts of the town have an appearance of utter desolation. It is estimated that in the fully built-up areas the destruction and damage to property amount to over 77% and is close to that figure even in the suburbs.

18. The largest port in Europe, Hamburg, has a great network of docks extending along the banks of the Elbe with harbourage for ocean-going vessels and a huge capacity for the storage of fuels, foodstuffs and raw materials. But the most important activity in this area is shipbuilding, and here are found the large shipyards of Blohm und Voss, Howaldtswerke, Deutsche Werft A.G., and Stulken und Sohn A.G., all engaged in the construction of submarines and other war vessels. All have suffered grievous damage. In the Blohm und Voss yards, some 15 works have been partly destroyed or damaged, and hits were scored on construction slips affecting 3 or 4 submarines in the making, and on a school for U-boat personnel. In Howaldtswerke, besides 13 miscellaneous sheds destroyed or damaged, 6 hits were scored on the frame-bonding and plate furnaces, another on a smithery and blast furnace to the ship-building and machinery sheds. At least 5 main workshops of the Diesel Engine Works had direct hits and other buildings suffered from H.E. and

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Stalton und Sohn had 3 or 4 workshops wholly wasted and others very heavily damaged. Direct hits are also seen on workshops of Deutsche Werft A.G., where several small sheds were demolished. At least 4 other firms engaged in ship-building or repair work were directly affected, and the buildings of a firm in Bernbeck engaged in research and in the design of submarines have been partly destroyed. Apart from the submarines under construction, 2 others in the Blohm und Voss docks were possibly damaged, one being half submerged. No fewer than 5 floating locks have been sunk or blasted in this area, and a large number of vessels, 12 of which measure over 200 ft. in length, are seen in various docks either damaged by fire or blast, or, in some cases, with only their superstructures appearing above the water-line.

19. The storage capacity of the port has suffered severely. Altogether nearly 500 dockside and railway warehouses have been destroyed or damaged, besides many of the older type of brick warehouses, several storeys high, and used for food storage, which line the banks of the canal. These warehouses are situated mostly in the central and eastern parts of the dock area, and their contents mainly foodstuffs and raw materials, have been destroyed by fire. For example, in the Baaken Hafen, every warehouse on one quay for a distance of a mile, and for two-thirds of a mile on the other quay, has been burnt out. By contrast liquid fuel storage has been only slightly affected; 3 oil refineries have been damaged in the central dock area, but the majority of the tank farms and oil refineries lie to the west of Blohm und Voss areas and to the south-east of the docks, in districts which escaped comparatively lightly.

20. Besides the difficulties in trans-shipment caused by the burning of so many store sheds, must be counted the damage to cranes and port-handling gear on the quaysides, the many hits on roads and railways on the river front and, especially the destruction of rolling stock, sheds and railway tracks in the marshalling yards and goods stations serving the docks. The marshalling yard at Rothenburgsort and the Hanover goods station, both of major importance, suffered severely and 3 other dock sidings had lines out and rolling stock damaged or derailed. The main Hamburg passenger station, the Altona station and 5 suburban stations were all hit, and trucks were derailed at many points. A burnt-out train was seen to be stationary on a damaged bridge over the Billhafen, and was in the same position 10 days later. 2 other viaducts were also damaged. No estimate can be made of the number of barges sunk or of other river craft partaking in the trans-shipment traffic of the port, but at least 25 are seen to be submerged or damaged.

21. Although Hamburg is perhaps more concerned with trade than industry, there are, in the town, a large number of small industrial premises of a varied character, apart from those major shipbuilding undertakings already mentioned. Over 150 industrial buildings of this type have been destroyed or damaged, of which over 100 have been identified. A large proportion are concerned with engineering, foodstuffs (especially margarine), chemicals and light metal fabrication, while many are engaged in the manufacture of goods from imported raw material, such as jute, rubber, timber, wool and leather,

22. Perhaps the most significant of all the damage caused in Hamburg is that to the two great power stations at Neuhoef and Tiefstack, both of which were apparently inactive for at least a fortnight after the last raid. The larger at Neuhoef, adjoins the Howaldtswerke, and the boiler house received a direct hit, probably in the U.S.A.A.F. raid directed at that target. 2 other power stations in the town were also seriously damaged. The two huge main gasholders at the main gasworks at Grasbrook were burnt out and the main building damaged, and the gas plants at Barnbeck and Altona were also affected. Buildings of the town pumping station at Billwarder were partly demolished, and direct hits were scored on the reservoirs and filter beds.

23. The greatest destruction resulting from these raids, however, has been to business and residential property in the town, especially in the fully built-up area. This includes the town centre, Altona and districts extending northwards on both sides of the Mussen Alster. In this area are the large administrative buildings, the town hall, the law courts, the police headquarters, the fire service and other municipal undertakings; here too are the large business houses,

the banks and offices of commercial firms and shipping lines, the hotels, the main shopping centres, the theatres opera houses and other places of entertainment. All have been involved in the general devastation.

Alternative Targets.

24. 197 aircraft attacked alternative targets over a wide area surrounding Hamburg, mostly in the neighbourhood of Bronon and Cuxhaven; but weather conditions prevented positive identification.

Special Equipment.

25. H2S:- 24 aircraft were despatched as blind-markers. Only two of these dropped markers - both release-point flares. 9 others reported attack, but in view of the impossible weather conditions dropped only bombs. 23 other Y-aircraft (not blind markers) reached the target with their sets serviceable. 15 bombed blind on H2S, and 3 more used it to check their position at bombing. 3 Y-aircraft were lost.

26. CEE. The Eastern Chain operated on the Wyoming frequency throughout the raid and on the Arizona frequency from 0100 to 0300 hours. The average range on the outward route was 320 miles and on the return 315 miles. Jamming on the Wyoming frequency was of the usual type for this route. Poor results were obtained on the Arizona frequency owing to severe icing and electrical storms, which appear to affect R.F. Unit 24 frequencies more than those on R.F. Unit 25.

Defences

27. Flak and Searchlights:- On both outward and homeward journeys, flak was encountered from the islands of Neuwerk and Scharhorn and heavy predicted flak was reported along the coast between Wesermunde and Cuxhaven. Over Hamburg, some barrage was reported at 18,000 ft., and accurate predicted flak was also in greater evidence than in previous WINDOW raids. In the extremely difficult weather, the concentration of aircraft over enemy territory at all times was unusually low, and the accuracy of the predicted flak was probably due to an absence of sufficient WINDOW. Searchlights were rendered completely ineffective by cloud.

28. 37 aircraft were damaged by flak. Only 16 reported their position at the time of damage, and 8 of these were over the target area. The percentage of flak damage (5.0%) was higher than that of the previous WINDOW raids, but below that of 8.4% for non-WINDOW attacks, and considerably less than that of 9.3% for all operations on which icing was encountered.

29. Fighters:- 49 interceptions were reported, including 11 attacks. Roughly one-seventh of the number took place in the target area, and three-sevenths on each of the outward and homeward routes. In half of the cases, the bomber in question was flying in an area where WINDOW afforded little protection. 5 aircraft sustained fighter damage, one so seriously that it crashed on return and was destroyed. A Halifax claimed to have shot down a Ju. 88 over Wangercooge; this was supported by other observations.

30. Considerably less traffic was intercepted on this night, probably because of the bad propagational conditions. An H/F broadcast from the Stade area, lasting nearly an hour, gave general information regarding the height and position of approaching bombers.

Casualties.

31. No. of aircraft missing.....	30	(4.0)
	(flak.....)	37)
No. of aircraft damaged	(fighter.....)	5).....51
	(lightning.....)	2)
	(other causes.....)	7)
		1..... This

This raid presents unusual difficulties in analysing the causes of loss of the various missing aircraft. Crews' reports provide less than half the usual number of observations, and these are rendered all the more difficult of interpretation by the wide scatter of aircraft brought about by the weather conditions. In only 11 instances can any suggestion be made concerning the place or cause of loss. There is no definite evidence that any were shot down by flak, although the many cases of damage from this cause make it likely that the ground defences obtained some successes. 9 were probably lost to fighters, 7 on the outward route (4 over the North Sea, 2 over Spijka and 1 near Bromervorde) and 2 N. of the Frisians on the return. 2 aircraft are suspected to have gone down in the target area, but in neither instance could the cause be defined. 2 aircraft were destroyed through non-oncay action, one while taking off and the other on landing.

DUISBURG.

32. 5 P.F.F. Mosquitoes were detailed on a harassing raid against Duisburg. The target was covered with 5-10/10ths cumulo-nimbus, tops 10-15,000 ft., but above this visibility was good. Local thunderstorms were encountered on route, with icing and much static; one aircraft had to turn back because of the weather and another on account of the sickness of the observer. The remaining three attacked from 26-27,000 ft. No opposition was reported, and no casualties were sustained.

LINELAYING.

33. 6 Wellingtons were despatched by 1 Group to lay mines in the Elbe Estuary at the commencement of the main effort on Hamburg, three reaching their objective, and each laid 2 mines; 2 were unable to pinpoint and returned early, one crashing near Caister and becoming a total loss. The sixth did not return. It sent an S.O.B. an hour before it was due over its target, and its loss may not have been due to oncay action.

LEAFLETS

34. 11 Wellingtons, out of a force of 12 despatched by 92 and 93 Groups, dispersed leaflets over the French towns of Roubaix, Fourcoing, Lille, Arras, Rennes, Laval, Alencon, and Le Mans. The twelfth crashed shortly after taking off. Flak was encountered from known defended points, and 2 aircraft were slightly damaged. 2 interceptions were attempted, but no combats developed. No losses were sustained.

MM:/PVD.

BC/S. 26342/3/ORS.

14th October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA.	ALT. AREA.	OVER EN. TRAC.	NOT OVER EN. TRAC.		PLAC.	FIGHTER	NOT EN. ACTION	ATTACK ED.	NOT ATTACKED.	
HALBURG	8 P.F.F.	MOS. IV.	5	-	4	-	1	-	-	-	1B	-	-	Total of Bombs: H.E. 522.7 Inc. 706.1 (F) 349.3 (A) 272.9 (M) 48.7 48.4
		STR. I.	3	2	-	-	1	-	-	-	-	-	-	
		HAL. II & V	3	1	2	-	-	-	-	-	-	-	-	
		HAL. I ₂	20	9	6	1	2	2	-	-	-	1	2	
	LASC. I.	3	1	1	1	-	-	-	-	-	1	-	-	
	LASC. III.	33	27	22+1 ⁰	1	3	-	-	-	1AC	1	2	4	
	8 HAMB FORCE	STR. I.	3	1	-	-	2	-	-	-	-	-	-	Heavy Bombs: 8,000lb. 4,000 1 183 - 97 - 44
		HAL. II & V	1	1	-	-	-	-	-	-	-	-	-	
		HAL. I ₂	13	3	7	-	1	2	-	-	-	-	-	
		LASC. I.	2	1	1	-	-	-	-	-	-	-	-	
	LASC. III.	8	4	4+1 ⁰	1	-	-	-	-	-	-	-		
1	LASC. I.	21	9	8	-	4	-	1	-	-	-	1		
	LASC. III.	100	61	27	-	7	5	1AC+4	-	2AC+1	-	6		
	WELL. X.	32	16	7	-	6	3	3	-	1E	-	-		
3	STR. I.	2	-	1	-	1	-	-	-	-	-	-		
	STR. III.	97	41	21	7	25	3	3	-	1	-	3		
	LASC. II.	14	1	8	-	2	3	1	1AC	-	1	1		
4	HAL. II & V	100	66	25	1	7	1	7	1E	-	2	5		
	HAL. I ₂	44	24	12	-	4	2	1	-	-	-	4		
	WELL. X.	15	14	-	1	-	-	1	-	-	-	-		
5	LASC. I.	24	19	4	-	-	1	-	1AC	-	2	2		
	LASC. III.	104	63	19+2 ⁰	-	18	4	2AC+5	1AC	1E	1	3		
6	HAL. II & V	43	13	14	-	13	3	6	-	1B	1	-		
	HAL. I ₂	11	4	3	1	3	-	-	-	-	-	3		
	WELL. X.	19	10	2	-	6	1	1AC	-	-	-	2		
HALBURG TOTAL			740	393	197	14	106	30	9 AC + 33	1E + 4 AC	2E + 2B + 3AC	11	38	

⁰ ALSO ATTACKED BRILLAY.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA.	ALT. AREA.	OVER EN. TRAC.	NOT OVER EN. TRAC.		PLAC.	FIGHTER	NOT EN. ACTION	ATTACK ED.	NOT ATTACKED.	
HALBURG TOTAL			740	393	197	14	106	30	9 AC + 33	1E + 4 AC	2E + 2B + 3AC	11	38	
DUISBURG	8 P.F.F.	MOS. IV.	5	3	-	-	2	-	-	-	-	-	-	Total of Bombs: 2, 2.3
BOILING TOTAL			745	396	197	14	108	30	4 AC + 33	1E + 4 AC	2E+2B + 3AC	11	38	
HINDELAING	1	WELL. X.	6	3	-	-	2	1	-	-	1E	-	-	6 HISS
LEAPLETS	92	WELL. X.	1	1	-	-	-	-	-	-	-	-	-	-
FOURCOING	92	WELL. X.	1	1	-	-	-	-	-	-	-	-	-	-
ETILE	92	WELL. X.	1	1	-	-	-	-	-	-	-	-	-	1
ARRAS	92	WELL. X.	1	1	-	-	-	-	-	-	-	-	-	-
BONNIE	93	WELL. X.	3	2	-	-	1	-	-	-	-	-	-	1
LAVAL	93	WELL. III.	2	2	-	-	-	-	1	-	1E	-	-	-
ALEXON	93	WELL. X.	2	2	-	-	-	-	-	-	-	-	-	-
LE HANS	93	WELL. III.	1	1	-	-	-	-	1	-	-	-	-	-
LEAPLETS TOTAL			12	11	-	-	1	-	2	-	1E	-	2	
TOTAL			763	410	197	14	111	31	4 AC + 33	1E + 4 AC	4E + 2B + 3AC	11	40	

RAID TRACK AND BOMB PLOT NOT AVAILABLE

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 3/4th. AUGUST, 1943.MinelayingSUMMARY

1. 12 Wellingtons went out minelaying. 19 mines were laid and all aircraft came back. 2 were abortive (unable to pinpoint) and one was damaged by flak.

Weather Forecast

2. Midnight frontal positions:- (1) occlusion from 57°N. 06°E. to Yarmouth to Isle of Wight (2) cold from 57°N. 20°E. to 53°N. 12°E., becoming (3) warm from 53°N. 12°E. to Cologne to Paris to Bordeaux.

Bases:- Thunderstorms in S.E., elsewhere well broken layer cloud and moderate visibility, except in smoky areas. S. of a line Wash-Severn, fit till 0300 hours, some bases available till 0400 hours; local visibility troubles. Widespread deterioration after 0400 hours, with stratus below 1,000' in East Anglia. N. of Wash-Severn, mainly fit all night; lowest cloud base 1,500' near coast.

France:- Widespread thunderstorms. N.W. coast: 5-8/10ths. cumulus and strato-cumulus, base mainly above 2,000', tops below 10,000', some medium cloud, chance of local thunder in Nantes area.

Germany:- Widespread thunderstorms in E. and centre. Well broken cloud at medium levels in S. Hamburg and Ruhr: very cloudy, tops to 30,000'.

N. Italy:- Little cloud.

Frisians:- Thunderstorms. Much cloud at 1,000-1,500', with risk of very low patches.

Sorties

3.	(a)	No. of aircraft despatched.....	12
	(b)	" " " reporting mines laid in primary area.....	10
	(c)	" " abortive sorties (weather.....2).....	2
	(d)	" " aircraft missing.....	0
	(e)	" " mines laid.....	19

Weather Experienced

4. Bases:- Fit apart from low stratus and fog in East Anglia and locally in Midlands after 0400 hours.

W. France:- 4-6/10ths. layer cloud, base 4,000'. No moon. Visibility 5-10 miles.

Enemy Defences

5. A little light flak was encountered from both target areas, and some heavy and light flak from St. Erievu en route. One aircraft was slightly damaged. No enemy fighters were seen, and there is no evidence that any were active in the area of operations.

Casualties

6. Apart from one slight case of flak damage, all our aircraft returned unscathed

MM/JT.
EC/S.26342/1/CRS3,
3rd. October, 1943.

REF: 3/4th AUGUST, 1943.

TARGET	GROUP	TYPE	SORTIES	% REPORTING ATTACK ON		SORTIVE SORTIES		MISSING	DAMAGE			IN OPERATIONS		RESULTS
				FRIL RE.	LT. RE.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLANE	FIGHTER	NOT E/A.	ATTACK- ED	NOT ATTACK- ED	
MIPEL YANG ST. N. MALU	6	Well. X	6	5	-	-	1	-	1	-	-	-	-	10 mines
LORIEN	6	Well. X	6	5	-	-	1	-	-	-	-	-	-	9 mines
MIPEL YANG TOTAL			12	10	-	-	2	-	-	-	-	-	-	19 mines

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BOMBER COMBINED REPORT ON NIGHT OPERATIONS, 4/5th. AUGUST, 1943.

Duisburg: Cologne:

SUMMARY

1. 5 Mosquitoes were despatched to Duisburg and Cologne. All reached their targets and dropped their bombs, returning safely home.

Weather Forecast

2. Midnight frontal positions:- occlusion from 54°N. 10°W. to Holyhead to Isle of Wight to Nantes to N.W. Spain.

Bases:- 8-10/10ths. cloud at dusk, base 15,000', tops 20,000', with patches below; decreasing southwards to small amounts. Poor conditions later with much cloud at 1,000' in N., and at 800' in S. and E. 5 and 6 Groups; slight rain by 0100, cloud at 2,000', falling to 1,000' in W. by 0300; bases available longer in N.E. of East Anglia.

Germany:- Residual thunderstorms in N.W. Little cloud in S.E.

N. Italy:- Uncertain amounts of decaying cumulo-nimbus in layers and patches up to 15,000', with a risk of thunderstorms. Total cloud cover probably 5-8/10ths., but may be 10/10ths. Alps probably covered. Light winds.

France:- Low cloud and rain in frontal belt. Broken convection and layer cloud at various levels in centre and E.

Frisians:- Broken strato-cumulus, 5-8/10ths., base 1,000', over west of North Sea.

Sorties

3.	(a)	No. of aircraft despatched.....	5
	(b)	" " " reporting attack on primary area.....	5
	(c)	" " " missing.....	0

Weather Experienced

4. Ruhr:- 5-7/10ths. strato-cumulus, tops about 24,000'. No moon. Visibility good.

Enemy Defences

5. Inaccurate heavy flak was encountered from both targets. Searchlights were hampered by the cloud, but at Duisburg one aircraft was coned through a gap at 28,000' and saw 2 twin-engined fighters below him on the same course. The Mosquito escaped into the cloud.

Casualties

6. All our aircraft returned undamaged.

MLM/JT.
EC/S. 26342/1/ORS3,
3rd. October, 1943.

TARGET	GROUP	TYPE	SORTIES	1/0 REPORTING		ABORTIVE		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				ATTACK ON		SORTIES			FLAK	FIREWORKS	NOT K/L	RESULTS		P.	H.E.
				PRIM. TARGETS	SEC. TARGETS	OVER ENEMY TERR.	NOT OVER ENEMY TERR.					ATTACKED	NOT ATTACKED		
DUISBURG	8 PFF	Mosq-IV	3	3	-	-	-	-	-	-	-	1		P.	2.3
COLOGNE	8 PFF	Mosq-IV	2	2	-	-	-	-	-	-	-	-		P.	1.6
TOTAL			5	5	-	-	-	-	-	-	-	1			

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 5/6th. AUGUST, 1943.Duisburg: Dusseldorf:SUMMARY

4 Mosquitoes carried out a harassing raid on Duisburg; and one out of a force of 4 attacked Dusseldorf, the other 3 returning early for technical reasons. No losses or casualties were sustained.

Weather Forecast

Midnight frontal positions:- (1) occlusion from 45°N. 03½°W. to Nantes to the Havre to London to Sealand to Anglesey to Dublin to N.W. Ireland to N. Scotland to 56°N. 05°E., then splitting into (2) occlusion to Bremen to Hanover to Frankfurt to Lyons and (3) cold to 50°N. 05°E. to Linoges.

Bases:- 1, 5 and 8 Groups:- much cloud at dusk, base 1,500', with local showers or rain - possibly lower in 1 Group. Variable cloud in S., generally above 1,000'. Clearances in frontal zone. S. and S.W. safe for return, possibly also Training Groups and East Anglia. Much cloud at 1,000' in N.

Germany:- Much cloud to great heights in W., especially in frontal zones. S. of 12°E., broken medium and little low cloud.

N. Italy:- Little cloud. Route: solid layer cloud to 20,000' over Channel, and inland to 47½°N. with some good breaks. Thence 10/10ths., tops locally to 20-25,000', clearing S. of Alps to small amounts. Better conditions over France on return; heavy cloud still over Alps.

France:- Much medium and local thunder-cloud, especially in frontal zones and over high ground in S.E.

Sorties

(a) No. of aircraft despatched.....	8
(b) " " " reporting attack on primary area.....	5
(c) " " abortive sorties (technical defect.....)	3
(d) " " aircraft missing.....	0

Weather Experienced

Ruhr:- Clear. 4-6/10ths. cumulus at 6,000'. No moon. Visibility good.

Enemy Defences

Flak opposition was very slight. Some activity by enemy fighters was overheard but none were seen.

Casualties

All our aircraft returned undamaged.

MM/JT.

EC/S. 26342/1/ORS3,

4th. October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				FROM AREA	AIR	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLANE	FIGHTER	NOT X/A	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E.
DUISBURG	8 PFF	Mosq-IV	4	4	-	-	-	-	-	-	-	-	-	P.	5.1
DUISBURG	8 PFF	Mosq-IV	4	1	-	-	3	-	-	-	-	-	-	P.	.8
TOTAL			8	5	-	-	3	-	-	-	-	-	-		

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 6/7th. AUGUST, 1943.

Duisburg: Cologne: Minelaying: Leaflets:

SUMMARY

Duisburg: Cologne:

1. 4 Mosquitoes carried out harassing raids on Duisburg and 3 on Cologne. All returned undamaged.

Minelaying

2. 25 Stirlings and Wellingtons, out of a force of 34, laid 68 mines off the Dutch coast and in the Bay of Biscay. 2 Stirlings were lost.

Leaflets

3. 13 Wellingtons and Whitleys, of a force of 14, dispersed leaflets over various French towns without loss or damage.

Weather Forecast

4. Midnight frontal positions:- occlusion from East Anglia to S. Denmark to Stettin to Breslau to N. Adriatic.

Bases:- Fit for take-off, with broken strato-cumulus at 1,500-2,000', lower on coasts, with good visibility. During the night, cloud will disperse inland, but showers will persist on each coast.

Germany:- Much cloud to great heights in N. and centre. Broken convection cloud in S. Ruhr: extensive convection cloud, tops above 20,000'.

N. Italy:- Fine. Little cloud. Alps covered to 15-20,000', locally to 25,000'. Much medium cloud en route. Thunderstorms in S. France.

W. France:- Much cumulus and strato-cumulus, base 1,500', falling to 1,000' in local thundery showers about 45°W. Prospect of good breaks between 47½°N. and 45½°N.

<u>Sorties</u>	<u>Bombing</u>	<u>Minelaying</u>	<u>Leaflets</u>
5. (a) No. of sorties despatched.....	7	34	14
(b) " " aircraft reaching prim. area...	7	25	13
(c) " " abortive sorties.....	0	(weather..3).7 (weather).. 1 (tech. defect..3) (mines fell safe..1)	1
(d) " " aircraft missing.....	0	2	0
(e) " " mines laid.....		68	

Weather Experienced

6. Bases:- Fit all night.
 Ruhr:- 9/10ths. cumulus, tops 20,000', with traces of cirrus at 30,000'.
 W. France:- 8-10/10ths. layer cloud, base 1,500-2,500', with patches of/10/10ths. at

10/10ths. at 1,000' or below over N. coast, tops 4-5,000', with another layer at 10,000'. Visibility good en route, moderate over targets, with patches of sea fog. No moon.

Texel:- 5-10/10ths. cloud, base 1,500-2,000', tops 4,500'. Broken layers of medium cloud above. Visibility moderate to good. No moon.

Enemy Defences

7. Mosquitoes over the Ruhr encountered inaccurately predicted heavy flak at 29,000'. Flak was also encountered at Rotterdam, Schipol and Roermond. Mine-layers met light flak from known defended points in the target areas, but no strong opposition except at La Rochelle, where heavy flak was also fired. 5 sorties by controlled fighters were heard, but none had any obvious connection with Bomber Command activities. 2 Stirlings were attacked while homebound from the Gironde, but neither was damaged.

Casualties

8. 2 Stirlings failed to return from the Gironde. There is no evidence of the cause of either loss.

9. 2 aircraft were slightly damaged by flak over the same target.

MJ/JT.
IC/S. 26342/1/ORS3,
4th. October, 1943.

TARGET	GROUP	TYPE	SORTIES	NO REQUESTING		NEGATIVE		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				ATTACK ON	ARR.	ARR.	OVER		NOT OVER	FLAK	FIGHTER	NOT	ATTACKED	NOT	Tons of Bombs	H.E.
				ARR.	ARR.	ENERGY	ENERGY				E/A	D	ATTACKED		
DUISBURG	8 PFF	Mosq. IV	4	4	-	-	-	-	-	-	-	-	1	P.	3.1
OXFORD	8 PFF	Mosq. IV	3	3	-	-	-	-	-	-	-	-	-	P.	2.3
DOMBING TOTAL			7	7	-	-	-	-	-	-	-	-	1		
MINDELING	1	Stir. I	2	1	-	-	-	1	-	-	-	-	-		5 mines
GIRONDE R.		Stir. III	13	9	-	-	3	1	2	-	-	2	-		35 mines
L. P. LICE	3	Stir. I	1	1	-	-	-	-	-	-	-	-	-		4 mines
		Stir. III	4	1	-	-	3	-	-	-	-	-	-		4 mines
SENY	4	Well. X	8	7	-	-	1	-	-	-	-	-	-		14 mines
S. TEXEL	6	Well. X	6	6	-	-	-	-	-	-	-	-	-		12 mines
MINDELING TOTAL			34	25	-	-	7	2	2	-	-	2	-		68 mines
LA FLECHE	92	Well. X	1	1	-	-	-	-	-	-	-	-	-		
		Well. III	3	3	-	-	-	-	-	-	-	-	-		1
FOURS	93	Well. X	1	1	-	-	-	-	-	-	-	-	-		
		Well. III	2	2	-	-	-	-	-	-	-	-	-		
CHATELAIN	93	Well. III	2	2	-	-	-	-	-	-	-	-	-		
LA FLECHE	93	Well. Ia.	2	1	-	-	1	-	-	-	-	-	-		
ARGENTAN	93	Whit. V	3	3	-	-	-	-	-	-	-	-	-		
LA FLECHE TOTAL			14	13	-	-	1	-	-	-	-	-	1		
TOTAL			55	45	-	-	8	2	2	-	-	2	2		

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 7/8th. AUGUST, 1943.MILAN: TURIN: GENOA: DUSSELDORF: COLOGNE:SUMMARYMILAN: TURIN: AND GENOA.

202 Lancasters were despatched to bomb Milan, Turin and Genoa. Good concentrations were achieved at each target, and for so small a force the damage caused was considerable. Only 2 aircraft failed to return.

Dusseldorf and Cologne

Harassing raids were made on Dusseldorf and Cologne by 5 Mosquitoes, which returned undamaged.

Metorological Forecast

Home bases:- rain belts moving eastwards, should have passed operational bases in north by 2100 hours, but in 1, 5 and 3 Groups there may be low cloud at 10,000 feet, with rain and poor visibility up to 2200 to 2300 hours. Many bases south of the Wash will be fit for return at daylight.

Germany: broken medium cloud and considerable amounts of layer cloud beneath, up to 10,000 feet in N.W. and W. Further E. variable medium cloud and residual convection cloud.

France: well broken layer cloud.

N. Italy: very well broken medium cloud. Peaks of Alps visible.

Route to N. Italy: conditions expected to improve going southwards, although difficulty in climbing is anticipated. Cloud base 1,500 feet, tops to 20,000 feet. South of 49° N. cloud will become broken medium and strato-cumulus, tops 4-5,000 feet. Towards the Alps, tops may rise to 6-8,000 feet, with broken medium cloud above, tops to 15,000 feet. Freezing level 11,000 feet. Return route, similar.

Winds in N. Italy: 750 mb/ variable or northerly; 500 mb./300°/25 m.p.h.; 1000 mb./310°/40 m.p.h.

MILAN: TURIN AND GENOA.Plan of Attack

Route: Selsey Bill - Cabourg - North end of Lac du Bourget - TARGET - return by same route.

Timing Method. - Ground marking.

Route marking flares (green steady) were to be dropped at the north end of Lac du Bourget by all blind-markers. These were to be maintained by all ground-markers only if they were able to identify the lake visually.

Milan 11 blind-markers were to mark the aiming-point with red T.I.'s, proceeding on the same heading and releasing a string of flares (4 at 6 second intervals). 11 ground-markers were to mark the exact aiming-point with green T.I.'s after visual identification. If they were unable to identify visually, they were to overshoot the estimated centre of all red T.I.'s by 4 seconds, or all green T.I.'s by 2 seconds.

...../Turin and Genoa.

Turin and Genoa Method as for Milan. The 12 blind-markers and 11 ground-markers were to mark Turin and then proceed to Genoa and repeat the process. Blind-markers who were unable to mark blindly owing to unserviceable H2S were to retain their red T.I's, but were to aim their flares at those previously dropped. If no flares were seen they were not to drop their flares.

Route-marking flares (green steady) were to be dropped on the return as on the outward journey.

6. Timing. Milan. Zero-hour - 0115 hours.

Blind-markers and illuminators: 11 aircraft at (Z - 2).
 Ground-markers: 11 aircraft at 1 minute intervals (Z+1) - (Z+11) with one extra at (Z+1)
 Main force: . 50 aircraft (Z) - (Z+15)

Turin and Genoa. Zero hour - Turin, 0100 hours: Genoa, 0120 hours

Blind-markers and illuminators: 12 aircraft at (Z - 2)
 Ground-markers: 11 aircraft at 1 minute intervals (Z) - (Z+11) with one extra at (Z+1).
 Main Force: 50 aircraft on each target (Z) - (Z+15)

7. Markers Carried.

Blind-markers: 11 Lancasters - 4 x 4 flares white + 2 T.I's red LB + 1 T.I's red + 2 flares green steady.
 12 Lancasters - 3 x 4 flares white + 4 T.I's red LE. + 2 flares green steady.
 Ground-markers: 11 Lancasters - 2 T.I's green L.D. + 2 T.I's green + 2 flares green steady.
 Master Bomber:
 (Turin): 8 x 12 x 20lb. (F) + 3 x 4 flares white + 3 T.I's green.
 (F) = fragmentation bomb.

8. Tactics WINDOW was to be used only when within 50 miles of the target. Rate of dropping, 1 packet per minute. One P.P.F. Lancaster on Turin was to carry a Raid Commentator, who was to broadcast on "Darky" frequency to aid and advise. All crews were to listen on this frequency while over the target area. It was emphasised that very careful co-operation between pilot and bomb-aimer would be necessary to make full use of the commentary. Brief reports on its effectiveness were to be rendered in each raid report. One blind-marker was to carry a reserve commentator. 5 Group aircraft were to drop special leaflets.

<u>Sorties</u>	<u>Milan</u>	<u>Turin</u>	<u>Genoa</u>
9. No. of aircraft despatched.....	73	74	73 (23 ^x)
" " reporting attack on prim. area..	71	74	72 (22 ^x)
" " abortive sorties.....	0	0	(1 ^x)
" " aircraft missing.....	2	0	0
* detailed to attack Turin before proceeding to Genoa.			

Weather Experienced

10. Home bases: at take-off, much rain E. of 01⁰W., and thick frontal cloud; little rain further W., but similar cloud conditions. On return, broken cloud at various levels, with good visibility; patches of low cloud below 1,000 feet over Chilterns and Salisbury Plain area.

Route: from Channel to 48¹/₂⁰N. well layered cloud with good lanes, base of lowest layer 17,000 feet, with possibly cirrus high above. Further S. only small amounts of low and medium cloud, with many cloudless areas. On return, cloud very well broken N. of 48¹/₂⁰N., with little low cloud over France.

...../Targets:

Targets:- small amounts of low cloud, 0-4/10ths., base 1,500', tops 3,000'. 0-4/10ths. medium cloud, base 15,000', tops 18,000'. Visibility 5-10 miles. No moon during the attack.

Night Photographic Evidence

11. Milan

No. of photographs with bombing examined.....	63
" " " showing ground detail (plotted within 3 mls....34)	} 44
" " " " " outside 3 mls... 5	
" " " " " fire-tracks (unplotted..... 5)	} 19
" " " " " (plotted within 3 mls...18)	
" " " " " (" outside 3 mls... 1)	} NIL
" " " " " (unplotted.....NIL)	
" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming-point.....	57

12. Turin

No. of photographs with bombing examined.....	65
" " " showing ground detail (plotted within 3 mls....38)	} 49
" " " " " outside 3 mls... 2	
" " " " " fire-tracks (unplotted..... 9)	} 16
" " " " " (plotted within 3 mls...16)	
" " " " " (" outside 3 mls...NIL)	} NIL
" " " " " (unplotted.....NIL)	
" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming-point.....	63

13. Genoa

No. of photographs with bombing examined.....	58
" " " showing ground detail (plotted within 3 mls....38)	} 43
" " " " " outside 3 mls...NIL	
" " " " " fire-tracks (unplotted..... 5)	} 15
" " " " " (plotted within 3 mls...15)	
" " " " " (" outside 3 mls...NIL)	} NIL
" " " " " (unplotted.....NIL)	
" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming point.....	63

Narrative of Attack

14. At all 3 targets, which were clearly visible in the light of flares, the markers were well placed, and good concentrations were achieved. The "Master Bomber" at Turin appeared to give the crews great confidence, and successfully directed the aircraft to bomb well placed markers. Fires were seen near each of the 3 aiming points, and an exceptionally large explosion was reported by the aircraft attacking Genoa.

Daylight Reconnaissance

15. Milan About 50 incidents were seen on photographs taken after the raid. All of these were near the centre of the town, and most were due to incendiary bombs. Besides damage to residential and commercial property, the Innocenti Works, the Pirelli Works, a government tobacco factory, E. Prianohi (notor engines) 3 railway stations, a goods yard and several warehouses were affected.

16. Turin Reconnaissance photographs showed damage mainly between the Rivers Po and Dora. The state railway workshops, the royal arsenal and 2 railway workshops sustained damage.

17. Genoa Visible damage, mainly due to fire, was scattered throughout the town and docks, within a radius of 1½ miles of the Duomo. Several large port buildings were damaged, and over 50 large business and residential blocks and 5 public buildings were damaged or destroyed.

...../Special Equipment.

Special Equipment

18. H2S Milan 22 Y-type aircraft were despatched to Milan, 11 as blind markers. All aircraft attacked the target, but H2S was unserviceable in 6 aircraft, including 3 blind-markers, which consequently dropped only H.E. The standard of accuracy was fairly good.

19. H2S Turin and Genoa. 15 Y-type aircraft were despatched to mark the aiming-point at Turin, and 14 of these were also detailed to mark Genoa. 3 aircraft were to mark each target visually, and the remainder blindly. All aircraft reported attack on both targets, but H2S failed in one aircraft at each target, so that H.E. only was dropped. The remaining blind-markers attacked on H2S, and the 3 visual-markers used the equipment to identify the target.

20. GEE The Eastern Chain operated on the Virginia and the Southern Chain on the Carolina frequency throughout the raid. The average range on the outward route was 450 miles, and on the homeward route 455 miles. 3 aircraft secured fixes over the targets, which were beyond the chart cover. There was very little jamming, and the signals were strong throughout.

Enemy Defences

21. Flak and Searchlights: All reports dismissed the ground defences over the targets as "negligible" or "inaccurate", an estimate which is confirmed by the little damage sustained. Only one aircraft was shot down and one damaged by flak. Searchlights were also ineffective, and ceased as soon as the first T.I.'s were dropped. Chartres was the only place where accurate heavy flak was encountered, but the defences at Le Creusot were also active.

22. Fighters Only 3 interceptions were reported, but no attacks developed. Enemy aircraft appeared, from intercepted wireless traffic, to be active over France, but these failed to make contact with the bombers.

Casualties

23.	No. of aircraft missing.....	2 (0.9%)
	" " " damaged (flak).....	1 (0.5%)

One of the missing aircraft was seen to be shot down by flak over Milan. The other may have crashed between Le Creusot and Liacq; one report gave the position of an explosion, believed to be an aircraft, about 5 miles from the Grand Paradis peak, which rises some 12,000' in less than 20 miles.

Dusseldorf and Cologne

24. One Mosquito bombed Dusseldorf, and 4 bombed Cologne, from high level on E.T. from the last GEE fix. No results were observed, and all the aircraft returned undamaged.

ED/JT.
EC/S. 26342/1/ORS.
4th. October, 1943.

TARGET	GROUP	TYPE	SORTIES	✓/C REPORTING ATTACK ON		POSITIVE SORTIES		MISSING	INDEX			DESCRIPTIONS		RESULTS		
				PRBL. AREA.	ALL. AREA.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLAN	FIGHTER	NOT E/A	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E.	Inc.
MILAN	8 FFF	Lanc. I	1	1	-	-	-	-	-	-	-	-	-	E. 126.8 67.6 (Including 16x1,000lb.bombs) M. 3.5 2.5 (Including 2x1,000lb.bombs)		
		Lanc. III	22	22	-	-	-	-	-	-	-	-	-			
		Lanc. I Lanc. III	3 47	3 45	-	-	-	-	2	1	-	-	1		-	
MILAN TOTAL			73	71	-	-	-	2	1	-	-	-	1			
TURIN	8 FFF	Lanc. I	6	6	-	-	-	-	-	-	-	-	-	E. 109.5 82.4 (Including 27x1,000lb.bomb)		
		Lanc. III	18	18	-	-	-	-	-	-	-	-	-			
		Lanc. I Lanc. III	7 43	7 43	-	-	-	-	-	-	-	-	1		-	
TURIN TOTAL			74	74	-	-	-	-	-	-	-	-	1			
GEN. CL.	8 FFF	Lanc. I	6(6*)	6(6*)	-	-	-	-	-	-	-	-	-	E. 92.6 74.1 (Including 25x1,000lb.bombs)		
		Lanc. III	17(17*)	16(16*)	-	(1*)	-	-	-	-	-	-	-			
		Lanc. III	22	22	-	-	-	-	-	-	-	-	1		-	
	5	Lanc. I	3	3	-	-	-	-	-	-	-	-	-			
		Lanc. III	25	25	-	-	-	-	-	-	-	-	-			
GEN. CL. TOTAL			73(23*)	72(22*)	-	(1*)	-	-	-	-	-	-	-			
TOTAL TARGETS TOTAL			197	195	-	-	-	2	1	-	-	-	3			
DUSSENDORF	8 FFF	Moag. IV	1	1	-	-	-	-	-	-	-	-	-	2	0.8	-
COLOGNE	8 FFF	Moag. IV	4	4	-	-	-	-	-	-	-	-	-	2	3.1	-
TOTAL			202	200	-	-	-	2	1	-	-	-	3			

* Also attacked Turin.

RAID TRACK NOT AVAILABLE

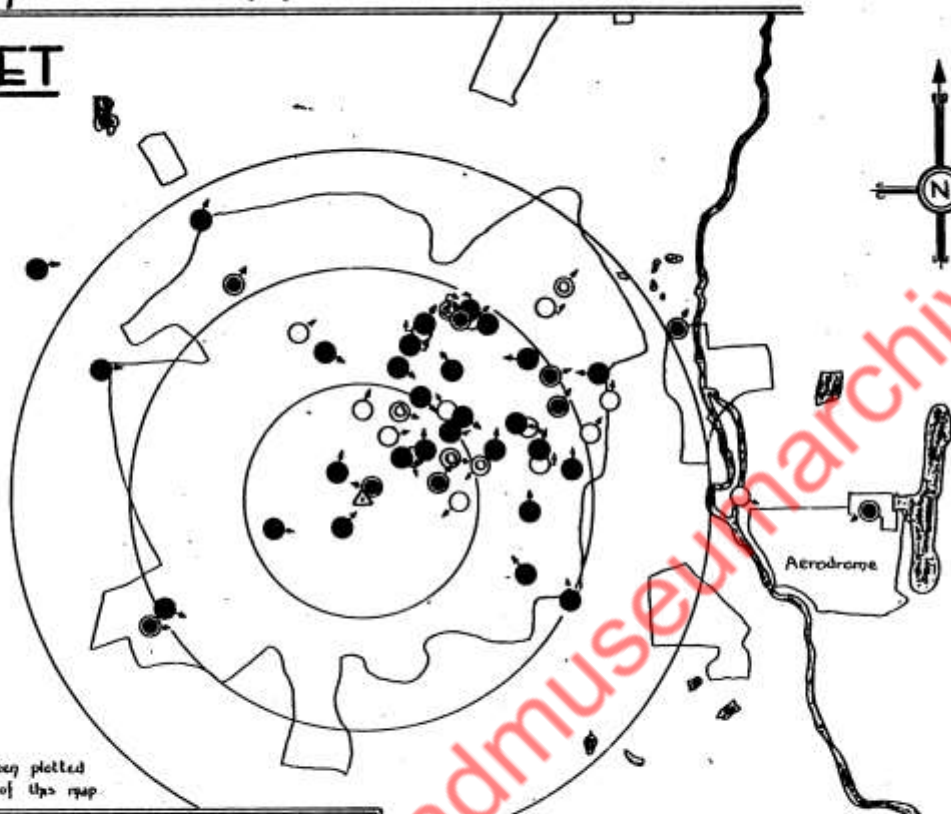
www.bombercommandmuseumarchives.ca

FINAL PLOT OF NIGHT PHOTOGRAPHS

444

TAKEN 7/8 AUGUST 1943 TARGET: MILAN

SECRET



One aircraft has been plotted outside the area of this map.

Photographs taken with Bombing		
	PFF marker aircraft	Main force aircraft
Plotted by ground detail	●	●
Plotted by fires	⊙	⊙
Plotted	By ground detail	By fires
Within 3 miles	34	18
Outside 3 miles	5	1
Unplotted	5	—
No. of prints (with bombing) arranged	67	

Scale: 1 inch = 1 mile

ORA/BL 251B

Dir. M 7 43 13000 J7

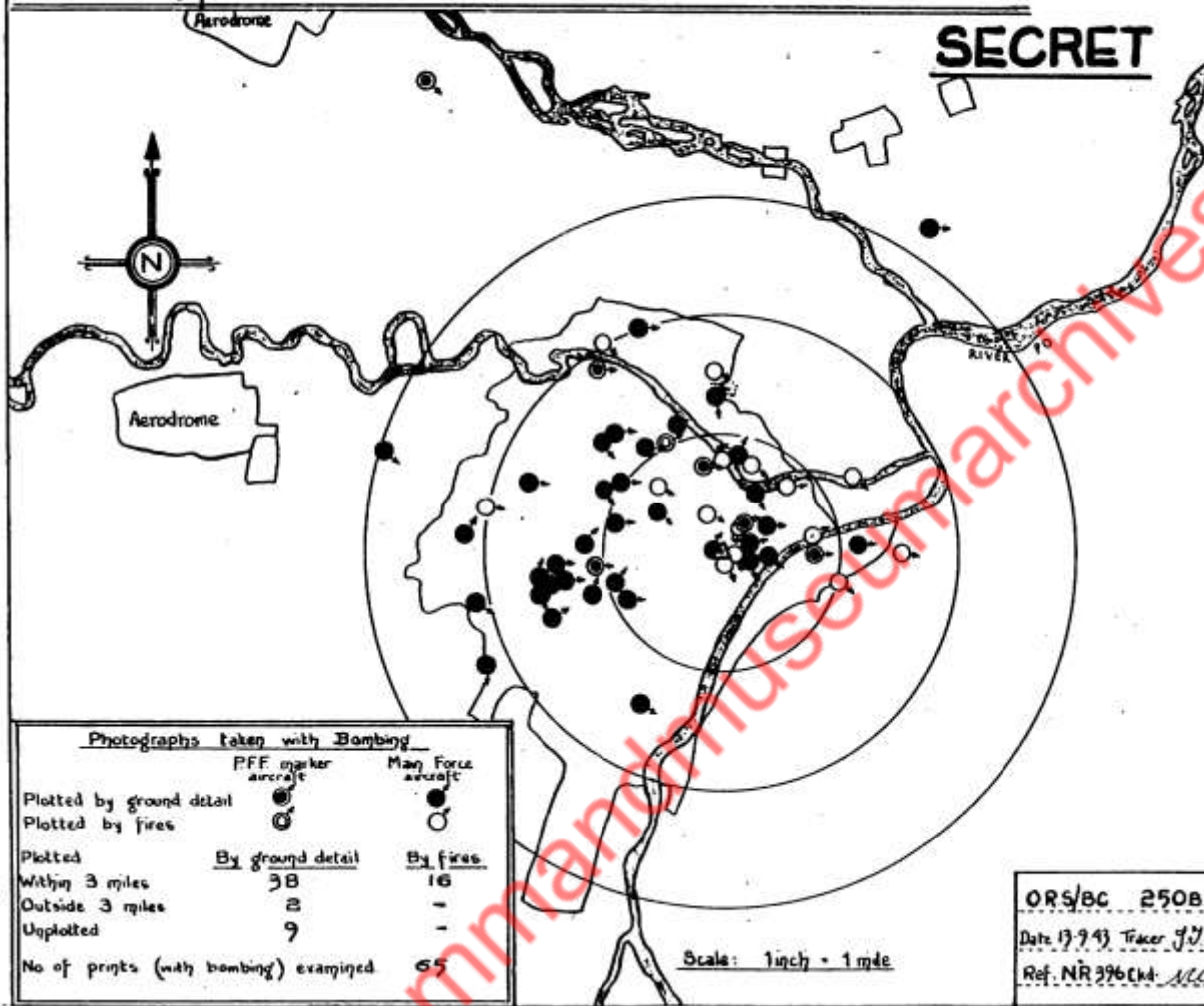
Ref. 11 236 040-111

www.bombercommandmuseumarchives.ca

FINAL PLOT OF NIGHT PHOTOGRAPHS TAKEN 7/8 AUGUST 1943 TARGET: TURIN

445

SECRET



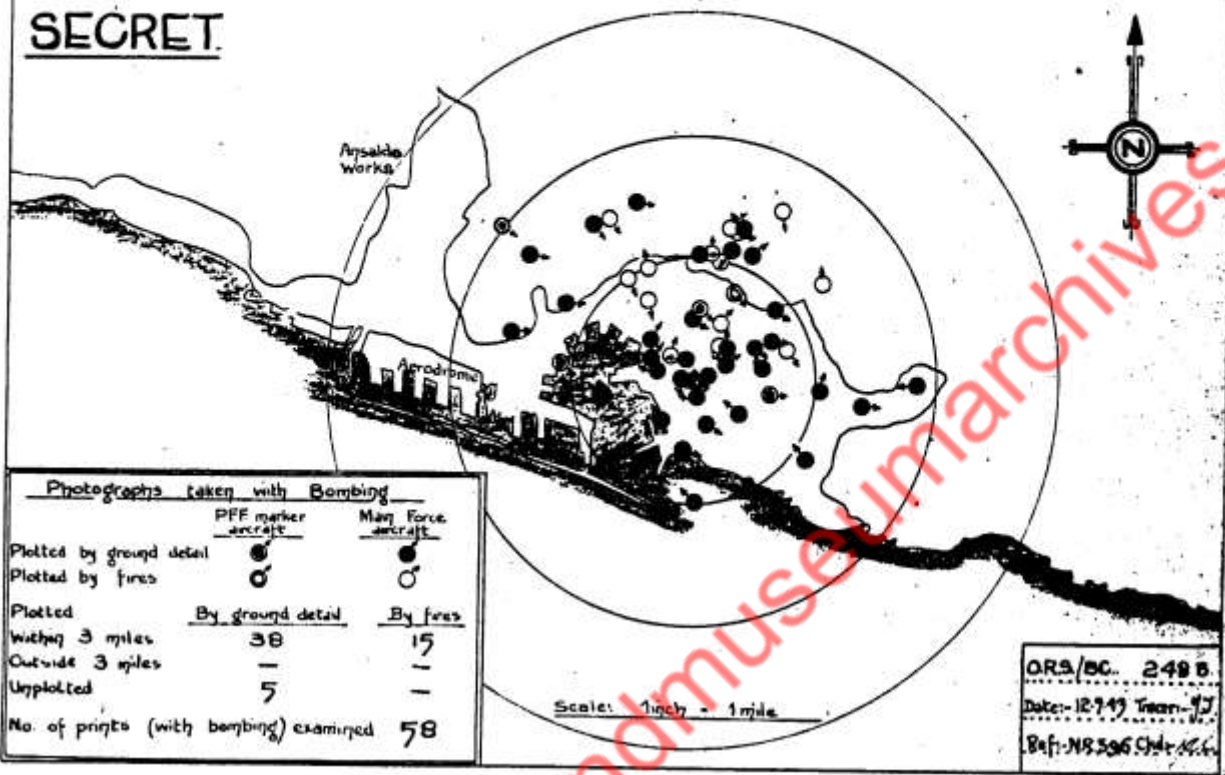
www.bombercommandmuseumarchives.ca

FINAL PLOT OF NIGHT PHOTOGRAPHS

446

TAKEN 7/8 AUGUST 1943. TARGET: GENOA.

SECRET.



Photographs taken with Bombing		
	PFF marker aircraft	Many Force aircraft
Plotted by ground detail	●	○
Plotted by fires	⊙	⊙
Plotted	By ground detail	By fires
Within 3 miles	38	17
Outside 3 miles	—	—
Unplotted	5	—
No. of prints (with bombing) examined	58	

ORS/BC. 248 B
 Date: 12-7-43 Tracer: JJ
 Ref: NR 506 Chd. 106

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS

9/10th AUGUST 1943

MANNHEIM ; Duisburg ; Minelaying ; Leaflets

SUMMARY

MANNHEIM

1. A force of 457 heavy bombers was despatched to bomb Mannheim, and 424 reported attack. Owing to cloud, which partially obscured both the target and ground markers, a rather scattered attack was delivered, the resulting damage not being great. 9 aircraft failed to return.

Duisburg

2. 6 Mosquitoes made a harassing raid on Duisburg, returning without loss.

Minelaying

3. 55 mines were laid off the Frisian Islands by 10 Stirlings, which returned undamaged.

Leaflets

4. 14 aircraft of 91 Group scattered leaflets at various places in northern France all returning safely.

Meteorological Forecast

5. At 0930 hours estimated midnight position of fronts was: (1) cold 55°N. 14°W. - tip of warm sector at 59°N 9°W. (2) warm from tip of warm sector - Anglesey - Isle of Wight - Paris - 48°N. 7°E. becoming cold to Stuttgart - 53°N. 20°E. Owing to a big surge of pressure over Scotland, the cold front was estimated at 1120 hours to be further south than previously forecast.

Home bases: fit for take-off and return, with 5-7/10ths cloud, base 2,500 ft., tops 7,000 ft. at take-off, and good visibility. Low cloud dispersing quickly after dusk, and some medium or high cloud increasing towards dawn. Visibility moderate.

France: overcast, with low cloud, base below 1,000 ft. in N.W. Broken layer cloud, base above 1,000 ft., in western France, S. of Nantes.

Germany: good clearances N. of cold front, extending as far S. as the middle Rhine. Possibly 10/10ths cloud over the Ruhr.

Route to Cologne: 7-9/10ths cloud over North Sea, tops 8-10,000 ft. continuing overland to near the target.

Route to Mannheim: 5-7/10ths cloud, tops to 7,000 ft. breaking over France, and decreasing to 3-5/10ths at the target. Visibility moderate. Return similar.

Frisian Islands 7-9/10ths cloud, base 1,500 - 2,000 ft., tops not higher than 8-10,000 ft. Visibility moderate.

/Winds:

<u>Winds:</u>	<u>750 lb.</u>	<u>500 mb.</u>	<u>300 mb.</u>
N. Basos to 52°N.	320°/45 mph	310°/70 mph	300°/110 mph
52° to Mannheim	300°/50 mph	300°/65-70 mph	300°/100 mph

MANNHEIM

Plan of Attack

6. Route Beachy Head- Le Touquet - Target - Turn right - 40°20'N/08°20'E - Le Touquet - Beachy Head.

7. Marking Method

- a) 16 Blind Markers to mark the aiming point with red T.Is. proceeding on the same heading and releasing a string of flares (4 at 6 second intervals).
- b) 6 Visual Markers to mark exact aiming point with yellow T.Is.
- c) 24 Backers-up aiming green T.Is. to overshoot yellow T.Is. if seen, otherwise, to overshoot the estimated centre of all greens by 2 seconds in each case. If no greens or yellows were available, early backers-up were to aim to overshoot the estimated centre of all red T.Is. by 4 seconds.
- d) Main Force aircraft to aim at the estimated centre of all yellow and green T.Is.

8. Timing Zero hour 0130 hours Period of Attack 0127 - 0202 hrs.

Blind Markers

16 aircraft at Z-3

Backers-up

24 aircraft (Z+2)-(Z+25)

1 aircraft per minute

Other 8 Group aircraft

7 aircraft at (Z-2)

Visual Markers

6 aircraft at Z-2 (No yellow T.Is. dropped after Z+3)

Main Force

1st wave (Z+2)-(Z+8) 83 Lancs.
 2nd wave (Z+8)-(Z+14) 75 Hals.
 3rd wave (Z+14)-(Z+20) 75 Hals.
 4th wave (Z+20)-(Z+26) 82 Lancs.
 5th wave (Z+26)-(Z+32) 84 Lancs.
 399 aircraft

9. Markers carried

Blind Markers 8 Halifaxes : (4x4 fl.white) + 3 T.I. red L.B. + 2 T.I. red
 8 " : (4x4 fl.white) + 2 T.I. red L.B. + 2 T.I. red

Visual Markers 4 Halifaxes + 2 Lancasters : 2 T.I. yellow L.B. + 2 T.I. yellow

Backers-Up 7 Halifaxes + 17 Lancasters : 2 T.I. green L.B. + 2 T.I. green

Tactics WINDOW Continuously from 50°21'N/03°22'E to 50°09'N/05°52'E and 50°00'N/07°00'E to 49°45'N/07°00'E and 49°58'N/05°45'E to 50°17'N/03°26'E. Rate of discharge one bundle per minute.

Bombing Wind would be passed at one of the following times (Z-10), (Z), (Z+10), (Z+20).

Sorties

11. No. of aircraft despatched 457
 " " " reporting attack on primary area 424 (92.7%)
 " " " " " alternative area 4 (0.9%)
 /No.

No. of abortive sorties (technical and manipulative)		
defects	17	
(sickness of crew	1	}.... 20 (4.4%)
(navigational error	1	
(attacked by fighters	1	
aircraft missing .....			9 (2.0%)

Weather Experienced

12. Home bases: fit all night
Route: much layer cloud over England, some good breaks over the Channel and French Coast, becoming 9/10ths inland over the continent to the target area, with good breaks. Moderate to good visibility. Moon set at target at about 0120 hours.
Target: 4-8/10ths thin layer cloud at 7,000 ft. Patches of cirrus above.
Visibility moderate to good. No moon during attack.
Wind: French coast to target at 18,000 ft./300°/65-70 mph.

Night Photographic Evidence

13. No. of photographs with bombing examined 315
 " " " showing (plotted within 3 miles ... 23)
 ground detail { " outside 3 " ... 20}... 55
 (unplotted 12)
 " " " showing (plotted within 3 miles ... 78)
 fire tracks { " outside 3 " ... 54}... 260
 (unplotted 128)
 " " aircraft estimated from the photographic evidence to have
 bombed within 3 miles of the aiming point 173

Narrative of Attack

14. Blind-Markers dropped red T.Is. fairly accurately, the marking being continuous from Z-5 to Z+9. Cloud partially obscured the target so that the visual markers were unable to see the aiming point, and all but one brought back their yellow T.Is. The backers-up, however, aimed their green T.Is. at reds and greens and the one salvo of yellows, keeping the target continually marked from Z+6 to Z+9. The majority of the main force bombed T.Is. but owing to cloud it was not possible to see all existing T.Is. at once, so that the centre could not be estimated. In general, the first T.I. seen was bombed, so that the attack drifted back along the line of approach. A large number of aircraft bombed the single salvo of yellow T.Is. dropped, but some reported attacking on yellow T.Is. after they had extinguished. These crews either mistook fires below cloud for yellows, or were misled by decoys. Fire-sites were known to be in action at Neuhausen and Beckarau, and may have been sources of decoy T.Is. In general, the attack was somewhat scattered, and was later than planned, possibly owing to the following wind being about 20 mph lighter than expected.

Daylight Reconnaissance

15. Damage seen on reconnaissance photographs was not extensive and there were no large areas of devastation. The works of Heinrich Lanz A.G., makers of A.F.Vs., artillery tractors and tank components, was very severely damaged, several buildings being completely destroyed or gutted. Much damage was also seen in the northern half of the I.G. Farbenindustrie (Oppau) Chemical Works, and Dr. Raschig A.G. (Chemicals), and Sulzer Bros. (diesel engines for warships) were also affected. Buildings of the inland port and the Rhonania Oil Storage depot, and goods sheds and buildings of the main station were damaged. In addition a number of commercial and residential incidents were seen, about half being due to fire.

Alternative Targets

15. 4 aircraft attacked alternative targets in the areas of Trier (3) and

/Diope

Dieppe. Another aircraft which also attacked the primary, dropped part of its load south of Trier.

Special Equipment

17. H2S 16 Y-aircraft were detailed as blind-markers and illuminators. 13 reported attack, but 5 of these dropped only H.E., owing to unserviceable equipment (4) and flak damage (1). Photographs taken by 4 Blind Markers were plotted and 3 of these were reasonably accurate, the fourth being several miles S.E. of the aiming-point. 2 Blind Markers returned early owing to technical defects, and one was lost.

18. 22 of 24 Y-type aircraft which carried H2S as a navigational aid only, reached the target with serviceable equipment. One used H2S to bomb blind and checked their positions with it. Another reached the target without the aid of H2S and the remaining aircraft was missing.

19. GEE The Eastern Chain operated on the Wyoming frequency throughout the raid and on the Arizona frequency from 2300 to 0200 hours. Average ranges of 350 and 370 miles were obtained on the outward and homeward route respectively. Interference on the Wyoming frequency was of the same type but not as heavy as usual. On the Arizona frequency jamming and spurious pulses were easily detected and the interference was even weaker than on the Wyoming frequency. The strength of the GEE signal was good on both frequencies but the ranges were limited by the B signal which was the weakest. A and C were both seen over the target.

Enemy Defences

20. Flak and Searchlights The only opposition on the outward route was met in the Boulogne/Le Touquet area, and at Saarbrücken, neither being in the WINDOW dropping zone. Light flak in these areas cooperated effectively with searchlights. At Mannheim in the early stages of the attack, flak of moderate intensity burst well below the general level of the raid. Later, flak was negligible. The 30 to 40 searchlights which exposed appeared to be hampered both by cloud conditions and WINDOW, and were unable to cone the bombers. On the return, ground defences were active at Karlsruhe, Saarbrücken, Luxembourg, Douai, Arras, Boulogne and Le Touquet, only Karlsruhe being in the WINDOW dropping zone. The most severe opposition was over France, where accurate and persistent flak and searchlights were encountered. 10 aircraft were hit by flak, 7 being Halifaxes and 3 Lancasters.

21. Fighters Intercepted wireless traffic showed that night fighters were operating without close ground control, and 10 were heard in the target area using one frequency (V.H.F) apparently giving a running commentary on the raid. This was the first time V.H.F. was intercepted from S.W. Germany. The height of the bombers caused serious difficulty at one point, and the fighters were recalled. There were reports of interference from ground stations, and one aircraft reported interference on A.I. Bombers reported 65 interceptions, 14 being attacks. These were less frequent in the WINDOW dropping zones, and the Boulogne/Le Touquet area was particularly dangerous.

Casualties

22.	No. of aircraft missing	9 (2.0%)
	" " " damaged (flak	10)
	(fighters	3)
	(other causes ...	3)
		16 (3.5%)

Reports by crews suggest that 3 aircraft were shot down by fighters and 4 or 5 by flak. The losses to fighters occurred at Birkenfold (1) and over Munster (2), while one was shot down by flak over Munster and 3 or 4 after being downed in the Boulogne/Le Touquet area. Another bomber was shot down over Birkenfold, but the cause is unknown. One aircraft was damaged by incendiary bombs, one by fire from a British aircraft, and one owing to a manipulative error on landing.

/DUISBURG

DUISBURG

23. 6 Mosquitoes attacked Duisburg from high level on E.T.A. from the last GEE fix. No results were observed, and all the aircraft returned undamaged.

MINELAYING

24. 10 Stirlings laid 55 mines off the Frisian Islands without incident.

LEAFLETS

25. 91 Group despatched 14 aircraft to drop leaflets in Northern France. All completed the task and returned safely.

EMO/JT.

BC/S.26342/6/OBS

11th October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS Tons of Bombs H.E. Inc.
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLAN	FIGHTER	NOT E/A	ATTACK-ED	NOT ATTACK-ED	
MANNHEIM	8 PFF	Hal. IIIV	2	2	-	-	-	-	-	-	-	-	-	P. 857.3 858.9 A. 7.1 6.7 M. 14.3 14.9 Heavy Bombs
		Hal. IA	21	17	-	1	1	2	2	-	-	-	1	
		Lanc. I	1	1	-	-	-	-	-	-	-	-	-	
			Lanc. III	22	21	-	-	-	-	1AC	-	1	-	4000lb.
	8 MAIN FORCE	Lanc. I	2	1	-	-	1	-	-	-	-	-	-	1
		Lanc. III	6	6	-	-	-	-	-	-	-	-	-	3
	1	Lanc. I	19	18	1	-	-	-	-	-	-	-	-	2
		Lanc. III	93	91	-	-	1	1	1	1	-	-	1	7
	4	Hal. IIIV	19	17	2+1*	-	4	2	2	1AC	1AC	2	9	
		Hal. IA	30	27	1	-	1	1	-	-	-	3	-	
5	Lanc. I	23	22	-	-	-	-	1	-	-	-	-	4	
	Lanc. III	120	115	-	1	3	1	1	1	-	4	19		
6	Hal. IIIV	30	25	-	-	4	1	2	1E	1	4	3		
	Hal. IA	9	7	-	-	2	-	1AC	-	-	-	2		
MANNHEIM TOTAL			457	424	4+1*	2	18	9	2AC +0	1E+1AC +1	1AC +2	14	51	
DUISBURG	8 PFF	Mosq. IV	6	6	-	-	-	-	-	-	-	-	-	P. 4.7 tons. H.E.
BOMBING TOTAL			463	430	4+1*	2	18	9	2AC +0	1E+1AC +1	1AC +2	14	51	
MINELAYING FRISLAUS	3	Stir. I	1	1	-	-	-	-	-	-	-	-	-	5 mines
		Stir. III	9	9	-	-	-	-	-	-	-	-	-	50 mines
MINELAYING TOTAL			10	10	-	-	-	-	-	-	-	-	-	55 mines

* Also attacked primary.

MANNHEIM: DUISBURG: MINELAYING: 9/10th. AUGUST, 1943. (Contd.)

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLAN	FIGHTER	NOT E/A	ATTACK-ED	NOT ATTACK-ED	
LE-FLETS ORLEANS	91	Well. I	1	1	-	-	-	-	-	-	-	-	-	
		Well. III	3	3	-	-	-	-	-	-	-	-	-	
RENNES	91	Well. III	1	1	-	-	-	-	-	-	-	-	-	
AMBERG	91	Well. III	1	1	-	-	-	-	-	-	-	-	-	
LE HAYS	91	Well. III	1	1	-	-	-	-	-	-	-	-	-	
PARIS	91	Whit. V	4	4	-	-	-	-	-	-	-	-	1	
BRUX	91	Whit. V	1	1	-	-	-	-	-	-	-	-	-	
ORLEANS	91	Whit. V	1	1	-	-	-	-	-	-	-	-	-	
RENNES	91	Whit. V	1	-	-	1	-	-	-	-	-	-	-	
LE-FLETS TOTAL			14	13	-	1	-	-	-	-	-	-	1	
BOMBING TOTAL			463	430	4+1*	2	18	9	2AC+8	1E+1AC +1	1AC+2	14	51	
MINELAYING TOTAL			10	10	-	-	-	-	-	-	-	-	-	
TOTAL			473	440	4+1*	2	19	9	2AC+8	1E+1AC +1	1AC+2	14	52	

* Also attacked primary.

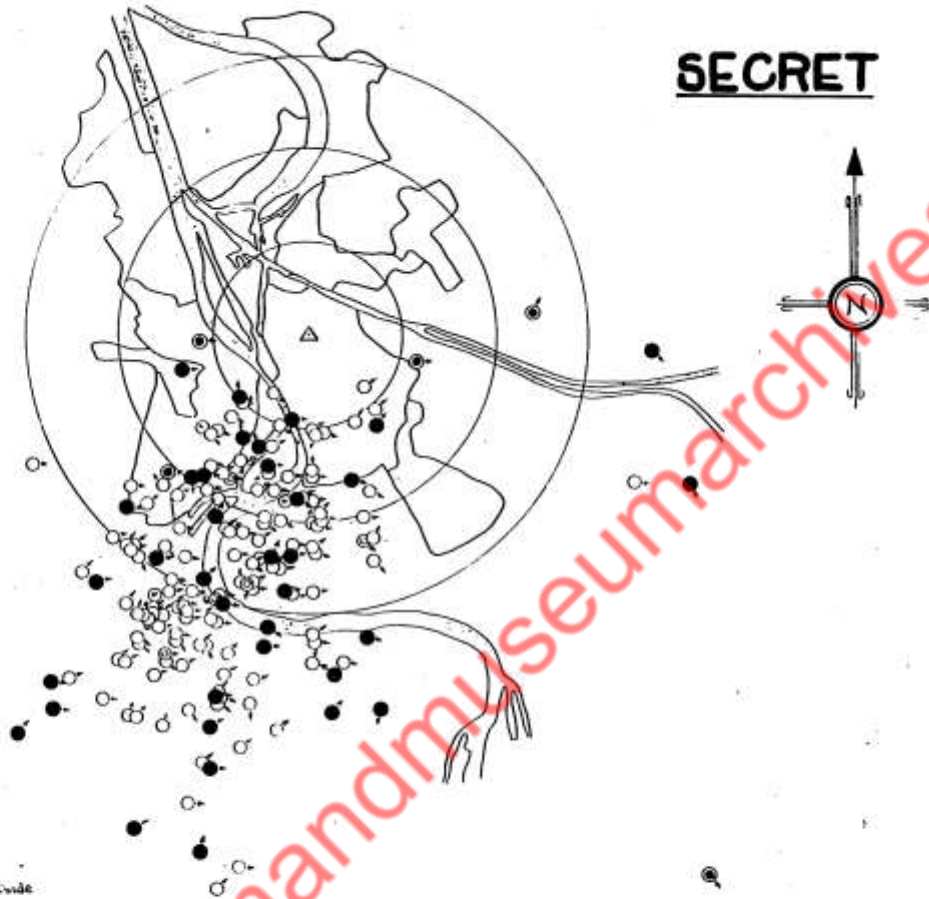
RAID TRACK NOT AVAILABLE

FINAL PLOT OF NIGHT PHOTOGRAPHS

451

TAKEN 9/10 AUGUST 1943. TARGET: MANNHEIM

SECRET



Two aircraft are plotted outside the area of this map.

	Photographs taken with Bombing	
	PPF motor aircraft	Men force aircraft
Plotted by ground detail	●	○
Plotted by fire	⊙	⊗
Plotted	By ground detail	By fire
Within 1 mi	23	78
2 - 3 mi	20	54
Outside	12	128
Total	(with bombing) examined 315	

Scale: 1 inch = 1 mile

ORS/BC 268 B
 Date: 10-10-43 Exam: JJ
 Ref: HQ 397 Chk: ACC

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 10/11th AUGUST, 1943.NUREMBERG; Dusseldorf; Cologne; Mannheim; Mine-laying.SUMMARY.NUREMBERG.

A force of 653 heavy bombers set out to make a groundmarking attack on Nuremberg. The target was largely obscured by cloud, so that the marking was unsatisfactory. However, fairly considerable damage was caused, including 3 engineering and metal-working firms. 15 aircraft failed to return.

Dusseldorf, Cologne and Mannheim.

3 Mosquitoes were despatched to each of the 3 towns of Dusseldorf, Cologne and Mannheim. One Mannheim sortie was abortive, and all the remaining aircraft completed their task. All returned safely.

Mine-laying.

18 Wellingtons laid a total of 36 mines off the Frisian Islands and Texel Island, returning without loss.

Weatherological Forecast.

Estimated midnight position of fronts: (1) occluded $60^{\circ}\text{N}, 05^{\circ}\text{W}$. - $57\frac{1}{2}^{\circ}\text{N}, 2\frac{1}{2}^{\circ}\text{E}$., moving (2) warm to Zuider Zee - Cologne and (3) cold to East Anglia - Isle of Wight - $51^{\circ}\text{N}, 10^{\circ}\text{W}$. At 0300 hours, position of cold front $54^{\circ}\text{N}, 2\frac{1}{2}^{\circ}\text{E}$. - Birchem Newton - Portland Bill.

Home bases: for take-off, 7-10/10ths cloud at 1,500 feet over operational bases. At time of return from Flamborough Head - Holyhead, with a belt of rain and cloud at 1,000 feet, about 60 miles wide behind it. Poor visibility (1-2,000 yards) likely to be in north of 6 Group. South of the frontal zone, fit with local smoke troubles. Behind frontal belt, cloud lifting to 15-20,000 feet. Training Groups expected to be affected.

France: generally small amounts of cloud, except in N.W., where there will be 10/10ths very low cloud and fog locally.

Germany: much strato-cumulus with some breaks north of 50°N ., and medium cloud over the warm front. South of 50°N . and west of 15°E . broken medium cloud and probably broken low cloud.

Route and target: cloud tops over England not above 6,000 feet: little or no cloud between this and cirrus level. Over continent, cloud breaking inland. Over the target, probably only small amounts of cloud, but there may be 8-10/10ths strato-cumulus. This is not expected to be more than 1-2,000 feet thick, base above 2,000 ft.

Frisian Islands: broken cloud at 1,000 feet until late in the night.

	<u>750 mb.</u>	<u>500 mb</u>	<u>300 mb.</u>
Outward:	$270^{\circ}-290^{\circ}/30-40$ m.p.h.	$260^{\circ}-300^{\circ}/40-60$ m.p.h.	$260^{\circ}-310^{\circ}/50-85$ m.p.h.
Target:	$290^{\circ}/35$ m.p.h.	$300^{\circ}/50$ m.p.h.	$310^{\circ}/65$ m.p.h.
Return:	$270^{\circ}-250^{\circ}/35-50$ m.p.h.	$280^{\circ}-240^{\circ}/45-65$ m.p.h.	$300^{\circ}-260^{\circ}/55-90$ m.p.h.

.../NUREMBERG

NUREMBURG.Plan of Attack.

5. Route. Beachy Head - Le Treport - $49^{\circ}35'N.10^{\circ}40'E$ - TARGET - $49^{\circ}10'N.11^{\circ}$
- $49^{\circ}17'N.08^{\circ}26'E$ - Le Treport - Beachy Head.

6. Marking Method.

(a) 24 blind-markers were to mark the aiming-point with red T.I's, proceed the same heading, and release a stick of flares (4 at 6 seconds intervals).

(b) 8 visual-markers were to mark the exact aiming-point with yellow T.I's.

(c) 29 backers-up were to aim green T.I's, (i) in the early stages of the raid to overshoot the estimated centre of all yellow T.I's by one second, or red T.I's 3 seconds; (ii) in the later stages of the raid, to overshoot the estimated centre of all green T.I's by one second.

(d) 13 recontrers were to drop green T.I's, using H23 if serviceable; otherwise to act as backers-up.

(e) 6 of the blind-markers were to drop 1 x 250 lb. incendiary 120 miles of Nuremburg, as an aid to navigation. This was to be maintained by 21 backers-up & 2 recontrers.

7. Timing. Zero Hour - 0100 hours. Period of Attack - 0057 - 0141 hrs.

Pathfinder Force.

24 blind-markers at (Z - 3)
8 visual markers at (Z - 2) - (Z + 3)
4 backers-up at (Z + 1)
2 " " at (Z + 2)
1 " " per minute (Z + 3) - (Z + 38) (from (Z + 10) - (Z + 34) these were to be alternately recontrers and backers-up)

Main Force.

1st wave - 89 Lancasters; (Z + 2) - (Z + 9.)
2nd wave - 98 Halifaxes; (Z + 9) - (Z + 17)
3rd wave - 118 Stirlings; (Z + 17) - (Z + 23)
4th wave - 95 Halifaxes; (Z + 23) - (Z + 29)
5th wave - 88 Lancasters; (Z + 29) - (Z + 35)
6th wave - 88 Lancasters; (Z + 35) - (Z + 41)
20 aircraft of 8 Group at (Z - 3)
4 " " " " " (Z + 13)

8. Markers Carried.

Blind-markers: 9 Halifaxes } 4x4 flares white + 2 T.I. red L.B. + 2 T.I. red
4 Lancasters }
11 Lancasters: 4x4 flares white + 2 T.I. red L.B. + 2 T.I. red +
2x250 lb. inc.

Visual-markers: 3 Halifaxes } 2 T.I. yellow L.B. + 2 T.I. yellow.
5 Lancasters }

Recontrers } : 9 Halifaxes } 2 T.I. green L.B. + 3 T.I. green
Backers-up } : 10 Lancasters }
23 Lancasters } 2 T.I. green L.B. + 2 T.I. green + 2 x 250 lb inc.

9. Tactics. WINDOW was to be dropped from $05^{\circ}30'E.$ to $05^{\circ}45'E.$; $07^{\circ}05'E.$ to $09^{\circ}34'E.$; within 20 miles of the target: $09^{\circ}35'E.$ to $07^{\circ}00'E.$; $05^{\circ}30'E.$ to $03^{\circ}30'$ at the rate of one packet per minute.

Spoofer markers, red and green T.I's, were to be dropped on Mannheim between 0023 and 0039 hours. Aircraft were warned to avoid these,

8 of the blind-markers were to report as early as possible the last wind they felt before reaching Würzburg. The information was then to be retransmitted to the force at (Z - 10), or (Z), or (Z + 10), or (Z + 20).

Statistics.

No. of aircraft despatched	653	
" " " reporting attack on primary area	596	(91.3%)
" " " " " " alternative area	8	(1.2%)
" " abortive sorties (technical & manipulative defects	28)	
(illness of crew	2)	
(attacked by fighter	1)	.34 (5.2%)
(off track	1)	
(crashed	2)	
" " aircraft missing	15	(2.3%)

Weather Experienced.

Home bases; fit until 0400 hours. Between 0400 and 0600 hours rain and low cloud spread over Yorkshire from N.W. S. Midlands also affected by rain and low cloud.

Route: 8/10ths layer cloud from English coast to target, on both outward and return routes.

Target: 8/10ths thin layer cloud, with occasional breaks to 6/10ths or less, up to 8,000 ft.

Wind at 18,000 ft: 270°-280°/40-45 m.p.h.

Moon up at zero hour over the target, setting at about zero + 30 minutes; about 1/2 of full.

Photographic Evidence.

No. of photographs with bombing examined	374
" " " showing ground detail (plotted within 3 mls.	2)
(" " outside 3 mls.	35)
(unplotted	28)
" " " " " fire tracks (plotted within 3 mls.	111)
(" " outside 3 mls.	25)
(unplotted	284)
" " aircraft estimated from the damage shown on the P.R.U.	
photographs to have bombed within 3 mls. of the aiming point	120.

III.3.: owing to cloud, the photographic sample is totally misleading)

Narrative of Attack

10. Blind-marking by H23 aircraft lasted from (Z - 3) to (Z + 5), and was scattered over a wide area, stretching at least 12 miles S.E. of the aiming-point. The visual-markers did not drop T.I.'s owing to cloud, and the back-up and the main force had difficulty in seeing T.I.'s below the cloud. Most of the early part of the attack appears to have centred on a point about 8 miles S.E. of the aiming-point, but the reconcentrers succeeded in bringing at least some of the main force back towards the built-up area between (Z + 11) and (Z + 18). Later aircraft bombed mainly N.E. of the city. Reconnaissance photographs, however, show that many of the aircraft bombed the town itself, which appeared to be obscured by cloud on the night photographs.

Night Reconnaissance

11. The city and many of the surrounding districts were covered on photographs taken several days after the attack. Most of the damage done was in the N.E. part of the city, in the districts of Rennweg and Garten bei Wohrd, where a large area of devastation was seen. There appeared to be no damage to industrial concerns in /the south of the

the south of the town, but elsewhere several industrial buildings were damaged, including the engineering and metal-working firms of Appel and Sazenhofen, Chillingworth, and H. Wegerle (Furth). Buildings and sheds of 4 railway stations and several public buildings were damaged. In addition, residential and business property was damaged in many areas throughout the town, notably in the Ost-Bahn and Schweinau Rosenau areas.

Alternative Targets

15. 8 aircraft attacked alternative targets in the areas of Homburg, Herzogenaurach, Frankfurt, Wurzburg, Bad Mergentheim, Trier, Albert and Rocroi, and 2 bombers, which also attacked the primary target, dropped part of their loads on Ansbach and Herzogenaurach.

Special Equipment

16. H2S 23 of the 24 Y-type aircraft despatched as blind-markers reported attack, 16 on H2S. The timing was good, but the marking was scattered. 12 other Y-type aircraft were detailed as recentrers; all attacked the target, but only 8 on H2S. Since the attack moved back towards the centre of the town at approximately the same time as these aircraft attacked, it is probable that their marking was accurate.

17. H2S was used, for navigational purposes only, by 38 aircraft, 29 of which reached the target with serviceable sets. 4 of these bombed blind, and 6 checked their positions at bombing by H2S.

18. GRE The Eastern Chain operated on the Wyoming frequency during the raid and on the Arizona frequency from 0000 to 0200 hours. Average ranges of 240 and 265 miles were obtained on the outward and homeward routes. On the Wyoming frequency several types of jamming were reported, the most important being "noise" and spurious pulses in the form of railings spaced about one inch apart. Several types of jamming were also reported on the Arizona frequency, the heaviest being "noise". The interference on this frequency was greater than on the Wyoming. The signals were strong with the exception of B, the lack of which limited the range of fixes.

Enemy Defences

19. Flak and Searchlights On the outward route, moderate heavy flak was encountered from several towns in the second WINDOW area, chiefly at Worms and Darmstadt, and north of Mannheim. The defences of Wurzburg, outside the WINDOW zones, were also active. Both predicted and barrage flak was reported at the target. The barrage had a 19,000 foot ceiling. No light flak was seen, and cloud prevented the effective use of searchlights. On the return, the defences at Karlsruhe were active, and at Luxembourg and St. Quentin, both outside the WINDOW areas, accurate predicted flak was experienced. The heaviest defences appear to have centred over Le Treport, where the predicted flak was reported as more intense than that over Muremburg. 33 aircraft were hit by flak.

20. Fighters Intercepted wireless traffic showed that a large number of fighters were active, but owing to jamming very few patrols were heard operating. 10 aircraft were heard using one frequency in the Mannheim area. One fighter reported observing a bomber shot down by another fighter. 68 interceptions were reported by the bombers, 14 being attacks. The interceptions were fairly evenly divided between the outward and homeward routes, and 12 occurred over the target area. About one-third took place outside WINDOW zones. 5 aircraft were damaged by fighters.

Casualties

21.	No. of aircraft missing.....	15(2.3%)
	" " " damaged (flak.....)	33*
	(fighters.....)	5)
	(other causes.....)	16*

* including one damaged by flak and incendiaries.

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It is probable that 9 aircraft were shot down by fighters at Sedan, Luxembourg, Fournies, Mannheim (4), Charleroi and St. Quentin, while 4 were destroyed by flak over Mannheim and the target (3). The other 2 bombers collided over the target. One Me.109 and 2 Ju.88's were probably destroyed. 8 aircraft crashed on landing (3 owing to fuel shortage) and 6 of these were totally destroyed. 4 aircraft were hit by incendiary bombs, and 4 by British ammunition.

Dusseldorf, Cologne and Mannheim.

22. 3 Mosquitoes were despatched to attack each of the 3 towns of Dusseldorf, Cologne and Mannheim. Owing to a technical defect one Mannheim sortie was abortive. The remaining aircraft attacked on E.T.A. from the last GEE fix. Red and green T.I's were dropped on Mannheim to decoy enemy defences from the main attack. All the Mosquitoes returned undamaged.

Minelaying

23. 18 Wellingtons laid a total of 36 mines off the Frisian Islands, and Texel Island. There were no failures, and all returned undamaged.

EMO/JT.
BC/S.26342/4/ORS3,
15th. October, 1943.

NUREMBERG: DUSSELDORF: COLOGNE: MANNHEIM: NANKING: 10/11th. August, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS Tons of Bombs H.E. Inc.
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT R/A	ATTACK-ED	NOT ATTACK-ED	
NUREMBERG	8 PFF	Hal. IIAV	2	2	-	-	-	-	-	-	-	-	-	P. 740.6 898.8 A. 7.6 10.7 M. 19.4 22.5
		Hal. IA	18	17	-	-	1	1	1	-	-	-	-	
		Lanc. I	2	2	-	-	-	-	-	-	-	-	-	
		Lanc. III	51	49	1 ^β	-	1	1	1A+C ⁴	-	1E+1A+C ⁺	-	11	
	8 MAIN FORCE	Stir. I	3	3	-	-	-	-	-	-	-	-	-	Heavy Bombs 8000lb. 4000lb. P. - 292 A. - 5 H. - 8
		Stir. III	1	1	-	-	-	-	-	-	-	-	-	
		Hal. IIAV	3	3	-	-	-	-	-	-	-	-	-	
		Hal. IIA	11	10	1 ^β	-	-	-	-	-	-	2	4	
		Lanc. I	2	2	-	-	-	-	-	-	1	-	-	
	1	Lanc. III	10	9	-	-	-	1	-	-	-	-	-	Tons of Bombs H.E. Inc.
		Lanc. I	17	9	2	-	6	-	1A+C	1B	1	-	-	
	3	Lanc. III	94	90	-	-	4	-	1	1A+C	-	5	-	
Stir. I		4	2	-	-	1	1	-	-	-	-	-		
4	Stir. III	111	103	2	-	1	4	1	1B+5 ^x	-	1A+C+ ^x	-	7	
	Lanc. II	14	13	-	-	1	-	-	-	-	-	-		
5	Hal. IIAV	96	82	2	-	8	4	5	1A+C	5E	1	9		
	Hal. IA	45	39	-	-	1	3	2	4	-	-	6		
6	Lanc. I	21	21	-	-	-	-	-	-	-	1	1		
	Lanc. III	107	99	1	-	2	4	7	1A+C	1	2	11		
6	Hal. IIAV	31	31	-	-	-	-	-	1	-	-	4		
	Hal. IA	10	9	1	-	-	-	2	-	-	-	-		
NUREMBERG TOTAL			653	596	8+2 ^β	4	30	15	1E+1A+C ⁺ +31 ^x	1A+C+1	6E+1B+ 2A+C+7 ^x	14	54	
DUSSELDORF	8 PFF	Mosq. IV	3	3	-	-	-	-	-	-	-	-	-	P. 2.0
COLOGNE	8 PFF	Mosq. IV	3	3	-	-	-	-	-	-	-	-	-	P. 2.3
MANNHEIM	8 PFF	Mosq. IV	3	2	-	-	1	-	-	-	-	-	-	P. .4 .7
BOMBING TOTAL			662	604	8+2 ^β	4	31	15	1E+1A+C ⁺ +31 ^x	1A+C+1	6E+1B+ 2A+C+7 ^x	14	54	

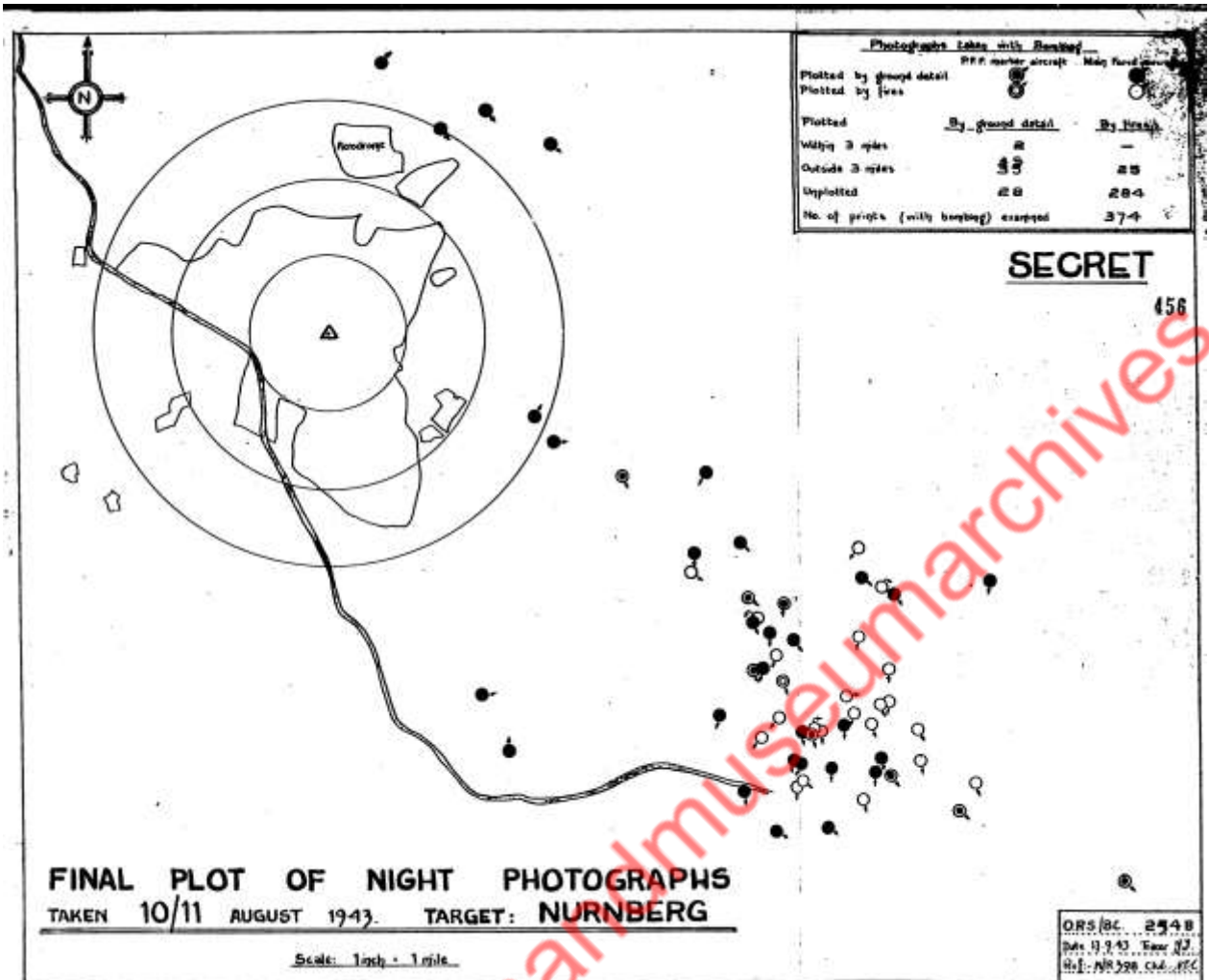
^x Including one aircraft which was damaged by flak and incendiaries. ^β also attacked Primary./Contd:

...../Contd: NUREMBERG: DUSSELDORF: COLOGNE: MANNHEIM: NANKING: 10/11th. AUGUST, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS Tons of Bombs
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT R/A	ATTACK-ED	NOT ATTACK-ED	
BOMBING TOTAL			662	604	8+2 ^β	4	31	15	1E+1A+C ⁺ +31	1A+C+1	6E+1B+ 2A+C+7	14	54	
MINDLAYING PRISLANS	1	Well. X	12	12	-	-	-	-	-	-	-	-	-	24 mines
S. of TRERL	1	Well. X	4	4	-	-	-	-	-	-	-	-	-	8 mines
TRERL	1	Well. X	2	2	-	-	-	-	-	-	-	-	-	4 mines
MINDLAYING TOTAL			18	18	-	-	-	-	-	-	-	-	-	36 mines
TOTAL			680	622	8+2 ^β	4	31	15	1E+1A+C ⁺ +31	1A+C+1	6E+1B+ 2A+C+7	14	54	

RAID TRACK NOT AVAILABLE

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www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 11/12th. AUGUST, 1943.

Duisburg: Cologne: Minelaying: Leaflets:

SUMMARY

Duisburg: Cologne

4 Mosquitoes carried out a harassing raid on Duisburg, and 4 on Cologne. Bombed their targets and returned safely.

Minelaying

20 Wellingtons, out of a force of 23, laid 40 mines in the Bay of Biscay. 3 aircraft did not return.

Leaflets

15 Wellingtons, out of 19 despatched by Training Groups, dispersed leaflets over various French towns. None were lost, but one ditched on return, 5 of the crew being killed.

Weather Forecast

Midnight frontal positions (radiating from a centre of low pressure E. of Copenhagen):- (1) occlusion to Copenhagen to Hamburg to 50°N. 06°E. to 47½°N. E. (2) occlusion from centre at 53½°N. 16°E., becoming (3) warm southwards and (4) cold to 48°N. 10°E. to Lyons to S. of Nantes.

Bases:- 5-7/10ths. cumulus and strato-cumulus at dusk, base 1,500'-2,000', falling to 1,000' in showers. Cloud amount will gradually decrease, becoming 5/10ths. on return from Ruhr. Visibility moderate, except very locally in smoky areas.

Germany:- Much convection cloud to 20,000', with heavy squally showers, over S. North Sea and inland to front 1. Layered cloud at various levels between fronts 1 and 4, with a few breaks. E. and S. of front 4, broken strato-cumulus and medium cloud. Route to Ruhr:- 7-10/10ths. complex cloud system, mainly in layers up to 15,000', but locally solid. Little cloud between 15,000' and cirrus levels, except in frontal zone, where tops may extend to 20-25,000'.

N. Italy:- Patches of medium cloud. Alps covered to great heights.

W. France:- 5-7/10ths. convection cloud in N., base 2,000', decreasing southwards. Showers, good visibility. Freezing level 5,000', icing index moderate to high.

Statistics

		<u>Bombing</u>	<u>Minelaying</u>	<u>Leaflets</u>
(a)	No. of aircraft despatched.....	8	23	19
(b)	" " " reaching primary area.....	8	20	15
(c)	" " abortive sorties (tech.defect....5) (weather.....1)	0	2	4
(d)	" " aircraft missing.....	0	1	0
(e)	" " mines laid.....		40	

...../Weather Experienced.

Weather Experienced

6. Ruhr:- 0-5/10ths. thin strato-cumulus at 12-15,000', $\frac{3}{4}$ moon.

W. France:- Small amounts of strato-cumulus, base 2,000', tops 3,000', over Channel and Brost. 7-8/10ths. cumulus, base 2,500', S. of Breton peninsula. $\frac{3}{4}$ moon. Good visibility.

Enemy Defences

7. 24 sorties by controlled fighters were heard, of which only 2 were active against British aircraft, in the Eindhoven/Venlo/Kassel area. One Mosquito on Duisburg was attacked at 27,000' over Leeuwarden by 5 FW.190's, but escaped with damage. No activity was overheard from W. France. Moderate heavy flak was fired from Duisburg and Cologne, accurate for height, with searchlight co-operating. Minelayers encountered moderate light flak from Ile de Groix, with a few searchlights.

Casualties

8. Nothing was heard from the one missing aircraft, a Wellington operating in the St. Nazaire area. An aircraft was reported to have been seen shot down off Lorient, but the missing aircraft should not have passed that way. The loss may be attributed to unknown causes.

9. One leaflet aircraft ditched off Shoreham on return, 5 of the crew being killed. One Mosquito, one minelayer and one leaflet aircraft were damaged by flak.

MM/JT.
FC/S.26342/1/ORS3,
19th. October, 1943.

TARGET	GADDP	TYPE	SORTIES	A/C REPORTED		EFFECTIVE SORTIES		MISSING	DAMAGE			INDESTRUCTIBLE		RESULTS Tons of Bombs K.E.
				ATTACK ON PRM. JRS.	ALT. JRS.	OVER BEMY TERR.	NOT OVER ENEMY TERR.		Flak	FIGHTER E/L.	NOT ATTACK- ED	NOT ATTACK- ED		
DUISBURG	8 EFF.	Mosq. IV	4	4	-	-	-	-	1	-	-	1	-	P. 3.1
COLOGNE	8 EFF	Mosq. IV	4	4	-	-	-	-	-	-	-	-	-	P. 3.1
BOMBING TOTAL			8	8	-	-	-	-	1	-	-	1	-	
MINELAYING														
ST. N. LAIDE	4	Well. X	6	7	-	-	-	1	-	-	-	-	-	14 mines
LORIENT	4	Well. X	8	8	-	-	-	-	1.0	-	-	-	-	16 mines
BREST	6	Well. X	7	5	-	-	2	-	-	-	-	-	-	10 mines
MINELAYING TOTAL			23	20	-	-	2	1	1.0	-	-	-	-	40 mines
LA FLECHE	92	Well. III	11	1	-	-	-	-	-	-	-	-	-	
LAON	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	
CHATELAIN	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	
ST. QUENTIN	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	
DEJUVAIS	92	Well. X	1	1	-	-	-	-	-	-	-	-	-	
LAVAL	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	
LEPAYS	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	
L. FLECHE	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	
JONGES	92	Well. III	11	1	-	-	-	-	-	-	-	-	-	
JONGES	92	Well. Ic.	1	1	-	-	-	-	-	-	-	-	-	
L. ROCHELLE	92	Well. III	2	2	-	-	1	-	-	-	-	-	-	
ST. N. LAIDE	92	Well. III	11	1	-	-	-	-	1	-	-	-	-	
ERMES	92	Well. Ic.	11	1	-	-	-	-	-	-	-	-	-	
GRANVILLE	92	Well. Ic.	1	-	-	-	1	-	-	-	-	-	-	
LA HAULE	92	Well. X	1	1	-	-	-	-	-	-	-	-	-	
LA HAULE	92	Well. Ic.	1	-	-	-	1	-	-	1E	-	-	-	
LORIENT	92	Well. Ic.	1	1	-	-	-	-	-	-	-	-	-	
BREST	92	Well. Ic.	2	1	-	-	1	-	-	-	-	-	-	
LEAFLET TOTAL			29	15	-	-	4	-	1	-	-	-	-	
TOTAL			50	43	-	-	6	1	1.0 +2	1E	1	-	-	

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 12/13th AUGUST, 1943.

MILAN: TURIN: Berlin: Minelaying: Leaflets.

SUMMARY.

MILAN.

1. A force of 504 heavy aircraft made an attack on the city of Milan, which was groundmarked and illuminated by H2S aircraft and visual markers. A fairly good attack developed, and the Master Bomber was found helpful by many crews, although poor reception limited his usefulness. 3 aircraft failed to return.

TURIN.

2. 152 heavy bombers carried out an accurate and concentrated groundmarking attack on Turin. 2 aircraft were lost.

Berlin.

3. 5 of 7 Mosquitoes which set out to attack Berlin completed the task. One returned early and one is missing.

Leaflets.

5. 9 Wellingtons scattered leaflets over Northern France, returning without loss.

Meteorological Forecast.

6. Warm front advancing from W. is expected to reach Central Ireland by midnight.

Home Bases:- fit for take-off, with high cloud, and moderate or good visibility. By 0600 hours, N.W. of a line Wash to Portland Bill there will be 8-10/10ths strato-cumulus and nimbo-stratus, base 1,000-1,500 ft. in Yorkshire with continuous rain, and moderate visibility. Surface winds: S.S.W./15-20 n.p.h. S.E. of line Wash to Portland Bill cloud base not below 1,500 ft.; possibly with intermittent slight rain, and moderate visibility. Surface winds 15-25 n.p.h.

France: increasing medium cloud in N.W. Elsewhere, fine.

Germany: strato-cumulus below 8,000 ft. in Ruhr and Middle Rhine. Bremen-Hamburg-Kiel area, much convection cloud, tops probably below 15,000 ft.

Baltic: much convection cloud, tops above 15,000 ft. and local thunderstorms

Alps: little cloud, peaks free from cloud.

Lombardy Plain: fine.

Route to N. Italy: residual cumulus and strato-cumulus in small amounts; S. of 47°N patchy medium cloud, base about 18,000 ft. On the return, little cloud over France, high cloud increasing over the Channel.

Turin and Milan: patchy medium cloud, probably less than 5/10ths, base about 18,000 ft.

Winds: 750 mb./240° - 290°/15 - 35 n.p.h.
500 mb./250° - 320°/30 - 45 n.p.h.
300 mb./270° - 320°/40 - 70 n.p.h.

..../MILAN.

MILAN.Plan of Attack.

7. Route. Selsey Bill - Cabourg - N. end of Lao du Bourget - TARGET - 45° 09' 05" E - S. end of Lao du Bourget - Cabourg - Selsey Bill.

8. Marking Technique.

(a) Route-marking flares (green steady) were to be dropped over Lao du Bourget by 5 blind-markers and maintained by 12 backers-up after visual identification (Milan and Turin sorties).

(b) Blind-markers were to mark the exact aiming-point with red T.I.'s and strings of flares (4 at 6 seconds intervals). No flares were to be released if cloud was more than 7/10ths.

(c) Visual markers were to drop yellow T.Is on the aiming point.

(d) Backers-up were to aim green T.Is to overshoot yellow T.Is, or the estimated centre of green T.Is, or of red T.Is, by 2 seconds (in that order of preference).

(e) Main Force aircraft were to aim at the estimated centre of all green T.Is or as directed by the Master Bomber.

(f) Route-marking flares (green steady) were to be dropped on the way home over Lao du Bourget by 14 blind-markers maintained by 18 backers-up after visual identification (Milan and Turin sorties).

9. Timing. Zero Hour 0115 hrs. Period of Attack - 0112-0147 hrs.

Pathfinder Force - Lancasters only.

20 blind-markers at (Z - 3)
 8 visual markers at (Z - 2)
 3 backers-up at (Z + 2)
 23 " " from (Z + 3) - (Z + 27) @ 1 minute intervals except at (Z + 24) and (Z + 26).

Main Force.

12 Lancasters of 8 Group at (Z - 3)
 85 Lancasters from (Z + 2) - (Z + 8)
 93 Halifaxes " (Z + 8) - (Z + 14)
 93 " " (Z + 14) - (Z + 20)
 86 Lancasters " (Z + 20) - (Z + 26)
 83 " " (Z + 26) - (Z + 32).

10. Markers to be Carried.

Blind-markers: 4 x (4 flares white) + 2 T.I. red LB + 2 T.I. red.

Visual-markers: 2 T.I. yellow LB + 2 T.I. yellow.

Backers-up: 2 T.I. green LB + 2 T.I. green.

11. Tactics. WINDOW to be used, at the rate of one packet per minute, only within 20 miles of the target.

One P.F.F. aircraft (with one reserve) was to carry a Master Bomber, who would broadcast a commentary on the progress of the raid to aid and advise the main force.

.../Sorties.

Sorties.

2.	No. of aircraft despatched	504
	" " " reporting attack on primary area	477 (94.6%)
	" " " " " " alternative area	3 (0.6%)
	" " abortive sorties (technical & manipulative defects 19) (illness of crew 1) (attacked by fighters 1)	21 (4.2%)
	" " aircraft missing	3 (0.6%)

Weather Experienced.

3. Home Bases:- for take-off, much medium but little low cloud; good visibility. A little light rain locally in Yorkshire and N.W.-S.W. England throughout the night, and low cloud gradually increased everywhere in Operational and Training Groups, remaining broken, with base above 2,000 ft. Visibility remained good.

Route:- much low and medium cloud as far S. as the French coast, after which cloud broke to small amounts. Cloud to 8-10,000 ft. in Alpine Valleys, but peaks were clear. One report of thunder-cloud to E. of route over Alps, tops to 20,000 ft. with lightning. Return similar.

Milan and Turin: very small patches of cloud at 11,000 ft. Slight haze. Moon, 80% of full, setting about 0330 hours.

Flight Photographic Evidence.

4.	No. of photographs with bombing examined	432
	" " " showing (plotted within 3 miles 66) ground (" outside 3 miles 37)	143
	detail (unplotted 40)	
	" " " showing (plotted within 3 miles 106) fire - (" outside 3 miles Nil)	289
	tracks (unplotted 183)	
	" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming point	280

Narrative of Attack.

5. Apart from one blind-marker which attacked 31 minutes late, the red T.Is were dropped on time, mainly east of the aiming point. The timing of the visual markers was less good, but from crews' reports it appeared that the yellow T.Is were well placed. The backing-up was well timed and continuous but somewhat scattered. More than half of the main force attacked between (Z - 4) and (Z + 8), possibly because the following wind was stronger than forecast, thus bringing the aircraft to the target sooner than expected. During this period the majority of the bombs fell on the northern part of the city, with a considerable spread into residential districts and open country. At (Z + 5) the Master Bomber instructed crews to bomb south of the marked area in an effort to bring the attack nearer the aiming point, but this order seemed to have little effect. At (Z + 8) the Master Bomber ordered the force to bomb an accurately placed salvo of green T.Is but subsequently the attack moved back along the line of approach, probably owing to aircraft bombing later green T.Is which undershot the aiming point. However, the attack was effective and caused much damage, which was scattered over the whole of the city.

Night Reconnaissance.

6. Photographs taken after the attack showed widespread damage and several fires were still burning. An account of the cumulative effect of the four raids on Milan on August, on the nights of 7/8th, 12/13th, 14/15th and 16/17th, is given in Report No. 402.

Alternative Targets.

17. 3 aircraft released their bombs in the areas of Orgeros, Chamonix and Chateaufouf, and another dropped part of its load on Aosta.

Special Equipment.

18. H2S. 20 aircraft were detailed as blind-markers, and 18 attacked, of which 16 dropped markers and flares blindly on H2S, while two others, whose sets were un-serviceable, dropped bombs only. The timing was very good, but the majority seem to have dropped their markers east of the aiming point. Of the 19 aircraft carrying H2S for navigational purposes only, 16 reached the target with serviceable sets; 2 of these bombed blindly and 2 others used the equipment to check their positions at bombing.

19. GRE. (Milan and Turin). The Eastern Chain operated on the Wyoming frequency and the Southern Chain on the Carolina frequency throughout. Average ranges of 26 miles and 430 miles were obtained on the outward and homeward routes respectively. Jamming was much more severe than usual on this route, and was first seen just after crossing the enemy coast. The most serious was spurious pulses, with which the enemy had been experimenting for some time; their technique showed dangerous improvement. Conditions were better south of Nevers and several navigators reported seeing signals over the target. At the maximum range the signals fluctuated, probably owing to propagation conditions.

Enemy Defences. (Milan and Turin)

20. Flak and Searchlights. On the outward route accurate predicted flak was encountered at Cabourg, Chartres and Le Creusot. These defences were much heavier than those of Milan and Turin, where both flak and searchlights seem to have been weak and ineffective. On the return, flak was active and accurate at Orleans and Chartres. In all 10 aircraft were damaged by flak, 3 over Milan.

21. Fighters. Intercepted wireless traffic indicated that the main night fighter activity was in the Evreux area, where 7 single engined aircraft were heard in operation. 3 of these claimed to have shot down bombers before they reached the target area. There were no other claims on this night. Twin engined fighters were active over north-east France, but there were no indications of any contacts. Returning bombers reported 54 interceptions, including 9 attacks. These were mainly on the outward route, and several identified enemy aircraft were Italian. 3 bombers were damaged by fighters.

Casualties.

22.	No. of aircraft missing	5 (0.8%)
	" " " damaged { flak 10	. . . 18 (2.7%)
	{ fighters 3	
	{ other causes 5	

Although only 5 aircraft were missing, there were 8 observations of aircraft shot down, any of which might have referred to a missing bomber. These observations included 5 aircraft shot down by fighters over Cabourg (2), Chartres (2), and the Le Creusot/Nevers area, and 2 by flak over Cabourg and Chartres. The eighth was destroyed over Milan, the cause being unknown. 3 of these were almost undoubtedly enemy aircraft. In addition, 2 enemy fighters were known to have been destroyed, one by a Stirling east of Argentan, and the other between Le Creusot and Nevers, by a bomber which was itself shot down. Other enemy aircraft were probably destroyed over Turin and Focamp. 2 aircraft collided and crashed on return, 2 were damaged by fire from British aircraft, and one was hit by an incendiary bomb.

...../TURIN

TURIN.Plan of Attack.

23. Route. Selsby Bill - Cabourg - N. end of Lac du Bourget - TARGET - turn right - $44^{\circ}52'N$, $07^{\circ}37'E$ - S. end of Lac du Bourget - Cabourg - Selsby Bill.

24. Marking Technique. As for Milan (para. 8), except that no Master Bomber would take part.

25. Timing. Zero Hour - 0115 hours. Period of Attack - 0112-0130 hrs.

Pathfinder Force - 23 Halifaxes and 6 Lancasters.

12 blind-markers at (Z - 3)
 5 visual markers at (Z - 2)
 2 backers-up at (Z + 2)
 8 " " from (Z + 3) - (Z + 10) at 1 minute intervals.

Main Force.

14 Halifaxes of 8 Group at (Z - 3)
 116 Stirlings from (Z) - (Z + 15)

26. Markers to be Carried. As for Milan (para. 10).

27. Tactics. WINDOW was to be dropped at the rate of one packet per minute only within 20 miles of the target.

Sorties.

28.	No. of aircraft despatched	152
	" " " reporting attack on primary area	142 (93.4%)
	" " " " " alternative area	5 (3.3%)
	" " abortive sorties (technical or manipulative defects)	3 (2.0%)
	" " aircraft missing	2 (1.3%)

Weather Experienced.

29. As for Milan (para. 13).

Night Photographic Evidence.

30.	No. of photographs with bombing examined	132
	" " " showing (plotted within 3 miles 62)	76
	ground (" outside 3 miles 4)	
	detail (unplotted 10)	
	" " " showing (plotted within 3 miles NIL)	56
	fire (" outside 3 miles NIL)	
	tracks (unplotted 56)	
	" " aircraft estimated from the photographic evidence to have been within 3 miles of the aiming point	98

Narrative of Attack.

31. Accurate and well timed marking and illumination by the blind-markers was followed by equally good visual-marking. The backing-up was also good, although it began somewhat later than was planned. This excellent marking was the prelude to an attack concentrated on the centre of the city.

Night Reconnaissance.

32. The main railway station, an unidentified factory and probably the Societa Piemontese Automobile factory were damaged in this raid. The fresh damage was not great owing to the smallness of the force, but it probably made a fair contribution . . . /to the

to the total damage caused by the 4 attacks of 13/14th July and 7/8th, 12/13th and 16/17th August, an account of which is given in the report for 16/17th (No. 403).

Alternative Targets.

33. 3 aircraft dropped their loads near Cabourg, Chartres and Milan while 2 others attacked unspecified targets between Lac du Bourget and Turin.

Special Equipment.

34. H2S. 10 of the 12 blind-markers despatched reported attack, 9 using H2S to drop markers and flares, and the other, whose set was unserviceable, released H.E. only. The timing and accuracy of these aircraft was excellent. 33 Y-type aircraft used H2S for navigation only, 26 of them reaching the target with serviceable sets. 4 used the equipment to check their bombing positions.

35. GEE. As for Milan (Para: 19).

Enemy Defences, and Casualties.

36. As for Milan. (Paras. 20, 24 and 22).

Berlin.

37. 7 Mosquitoes set out to attack Berlin from high level. 5 completed their task, bombing visually; several bursts were seen in the target area. One aircraft returned early, and the other aircraft failed to return. The latter obtained a last fix at 0146 hours about 40 miles from Lowestoft, on the homeward run, but nothing is known of its subsequent fate. One bomber was hit by flak over the target and another over Nienburg.

Minelaying.

38. 24 Wellingtons were despatched to lay mines off Brest, St. Nazaire and Lorient. 40 mines were laid by 20 aircraft, 2 returned early owing to technical defects, and 2 were lost without trace.

Leaflets.

39. 93 Group despatched 9 Wellingtons to scatter leaflets over North France, and all sorties were successful. One aircraft was damaged by flak, which was encountered over the usual coastal areas.

ED/L.S.
BC/S.26342/6/ORS.
21st October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS		
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT ENEMY ACTION	ATTACKED	NOT ATTACKED	Tons of Bombs		
														H.E.	Inc.	
MILAN	8	Lanc. I	2	2	-	-	-	-	-	-	-	-	-	P.	566.5	572.3
		P.F.F.	52	49	1+1 ^o	-	1	1	1 AC	-	-	1	2	A.	2.7	2.7
	MAIN FORCE	Lanc. III	13	11	-	-	2	-	-	-	1A	-	-	M.	3.1	0.5
		Lanc. I	22	22	-	-	-	-	-	-	-	-	3	Heavy Bombs		
		Lanc. III	89	83	-	1	5	-	-	-	-	1	7	8,000 lb. 4,000 lb		
		Lanc. II	13	13	-	-	-	-	-	-	-	-	1	P.	-	244
		Hal. II & V	86	83	-	1	1	1	2	1 AC	-	4	7	A.	-	1
		Hal. Ia	50	46	2	-	1	1	-	-	-	-	5	H.	-	1
	5	Lanc. I	27	25	-	-	2	-	1	-	1E	-	-	-	-	-
		Lanc. III	103	100	-	-	3	-	1	-	1E+2	-	9	-	-	-
6	Hal. II & V	36	33	-	1	2	-	-	-	-	-	-	-	-	-	
	Hal. Ia	11	10	-	-	1	-	-	-	-	-	4	-	-	-	
MILAN TOTAL			504	477	3+1 ^o	3	18	3	1AC+4	1 AC	2E+1A+2	6	38	Tons of Bombs		
														H.E.	Inc.	
TURIN	8	Hal. II & V	4	1	1	1	1	-	-	-	-	-	-	P.	117.7	118.4
		P.F.F.	17	17	-	-	-	-	1 AC	-	-	-	2	A.	4.0	1.7
		Lanc. III	6	6	-	-	-	-	-	-	-	-	-	M.	1.4	0.4
	MAIN FORCE	Hal. II & V	1	1	-	-	-	-	-	-	-	-	-	Heavy Bombs		
		Hal. Ia	12	12	-	-	-	-	-	-	-	-	-	8,000 lb. 4,000 lb		
3	Stir. I	3	2	-	-	-	1	-	-	-	-	-	P.	-	6	
	Stir. III	109	103	4	-	1	1	1 AC+3	2 AC	-	3	5	A.	-	-	
TURIN TOTAL			152	142	5	1	2	2	2AC+3	2 AC	-	3	7	M.	-	-
ITALIAN TARGETS TOTAL			656	619	8+1 ^o	4	20	5	3AC+7	3 AC	2E+1A+2	9	45			

^o Also attacked Primary.

..../Over

MILAN: TURIN: BERLIN: MOMBAY: Leaflets: 12/13th. AUGUST, 1943. (Contd.)

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A	ATTACKED	NOT ATTACKED	Tons of Bombs	
														H.E.	Inc.
ITALIAN TARGETS			656	619	8+1 ^o	4	20	5	3AC+7	3 AC	2E+1A+2	9	45		
BERLIN	8	Mooq. IV	7	5	-	-	1	1	2	-	-	-	-	P.	3.8
														M.	8
MOMBAY	1	Well. X	8	7	-	-	-	1	-	-	-	-	-	14 mines	
LORIENT	1	Well. X	8	8	-	-	-	-	-	-	-	-	-	16 mines	
AT. NIZARE	1	Well. X	8	5	-	-	2	1	-	-	-	-	-	10 mines	
BRIST	6	Well. X	8	5	-	-	-	-	-	-	-	-	-	10 mines	
MOMBAY TOTAL			24	20	-	-	2	2	-	-	-	-	-	40 mines	
LEAFLETS															
L. ROCHELLE	93	Well. X	1	1	-	-	-	-	1	-	-	-	-		
L. PALLICE	93	Well. III	1	1	-	-	-	-	-	-	-	-	-		
BOEN	93	Well. Ic	2	2	-	-	-	-	-	-	-	-	-		
VERSAILLES	93	Well. III	2	2	-	-	-	-	-	-	-	-	-		
CL. PRES	93	Well. X	1	1	-	-	-	-	-	-	-	-	-		
BRIST	93	Well. X	1	1	-	-	-	-	-	-	-	-	-		
BRUX	93	Well. X	1	1	-	-	-	-	-	-	-	-	-		
LEAFLET TOTAL			9	9	-	-	-	-	1	-	-	-	-		
POLING TOTAL			663	624	8+1 ^o	4	21	6	3AC+9	3 AC	2E+1A+2	9	45		
TOTAL			696	653	8+1 ^o	4	23	8	3AC+10	3 AC	2E+1A+2	9	45		

^o Also attacked Primary.

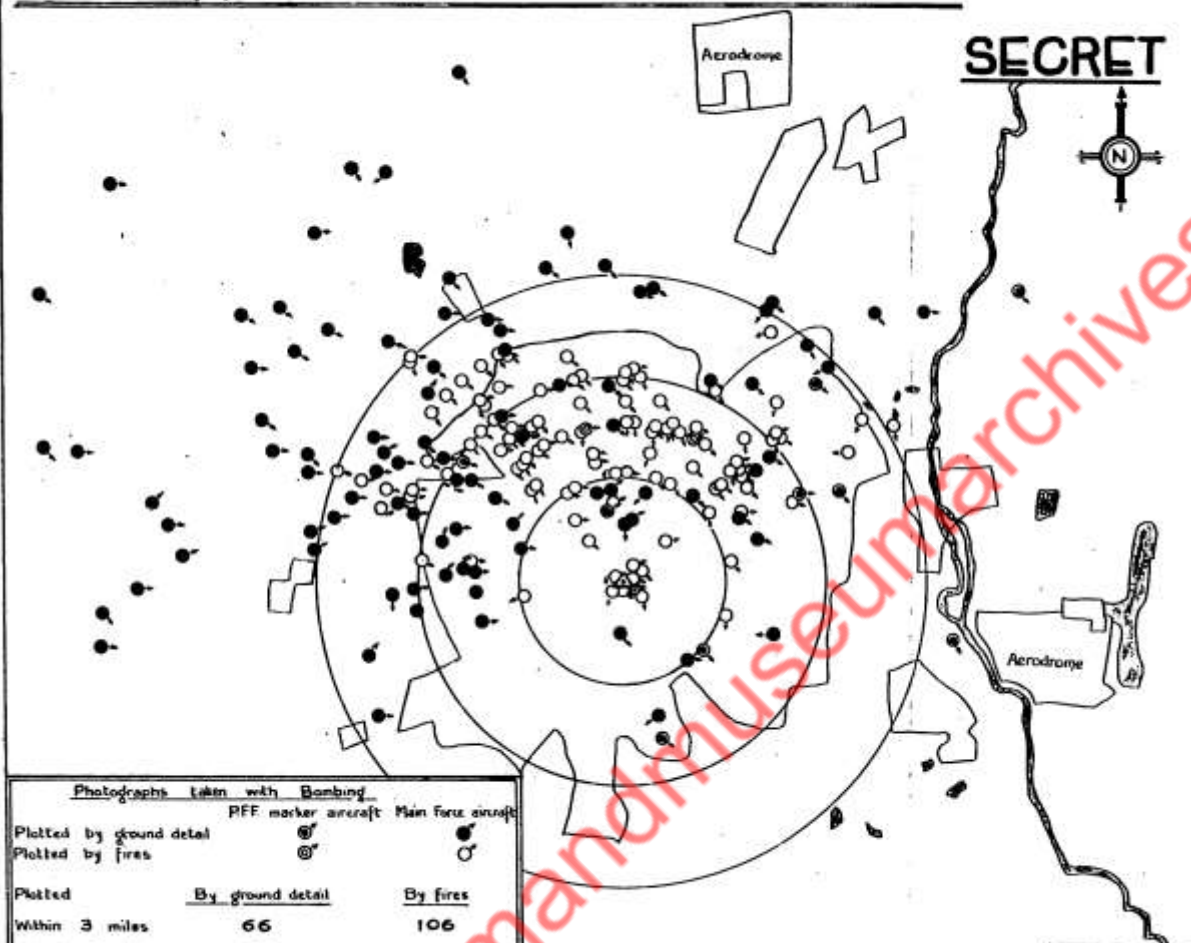
RAID TRACK NOT AVAILABLE

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FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 12/13 AUGUST 1943. TARGET: MILAN

463

SECRET



Photographs Taken with Bombing		
	PFF marker aircraft	Main force aircraft
Plotted by ground detail	⊙	⊙
Plotted by fires	⊙	⊙
Plotted	By ground detail	By fires
Within 3 miles	66	106
Outside 3 miles	37	-
Unplotted	40	183
No. of prints (with bombing) examined	432	

Scale: 1 inch = 1 mile

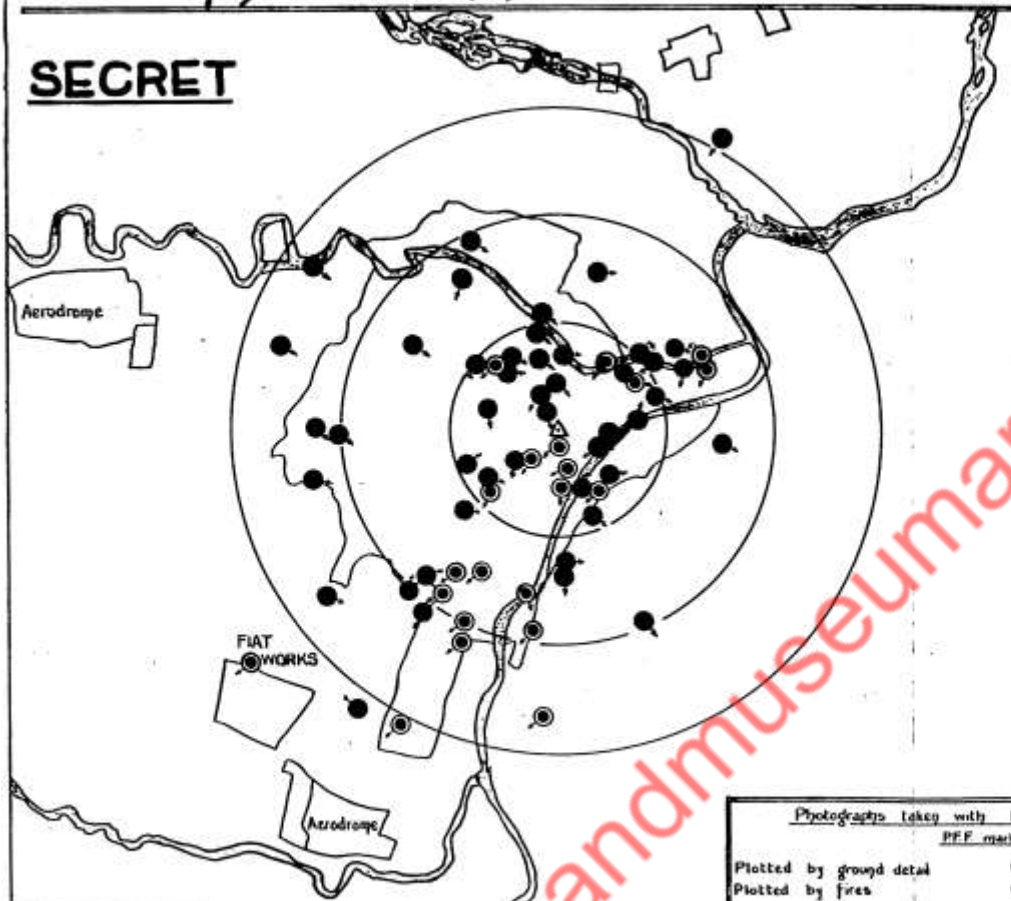
ORS/BC 2528
 Date 14.9.43. Issue 1/2
 Ref. NR400M.13

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FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 12/13 AUGUST 1943. TARGET: **TURIN**

464

SECRET



ORS/BC 2558
 Date: 17 9 43 Facer: JF
 Ref: N/A 400 (hd) 126

Scale: 1 mile = 1 inch

Photographs taken with Bomberg		
	PFF marker aircraft	Man Force aircraft
Plotted by ground detail	●	○
Plotted by fires	○	○
Plotted	By ground detail	By fires
Within 3 miles	62	-
Outside 3 miles	4	-
Unplotted	10	56
No. of prints (with bombing) examined		132

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COPY NO. 16

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 14/15th. AUGUST, 1943MILAN: Berlin:SUMMARYMILAN

140 Lancasters were despatched to Milan, the third attack delivered against the city in 8 nights. All but 6 reached the target, which was, as usual, clear of cloud; and, as usual, the attack was concentrated. Many new fires were started, including several in the Breda works, which was the special target for 31 of the force. Only one bomber was lost; we destroyed 2 fighters, and damaged 1 more.

Berlin

4 Mosquitoes carried out a harassing raid on Berlin; 3 others returned early. None were lost.

Weather Forecast

Midnight frontal positions: (1) cold from 50°N. 10°W. to N.W. Ireland. (2) warm from N.W. Ireland to Anglesey to Isle of Wight to 49°N. 05°E. to Mannheim (3) cold to Leipzig to Danzig and northwards.

Bases:- Generally fit all night. Little cloud, base above 2,000 ft.; visibility mainly above 2,000 yards, but locally 1,500-2,000 yards in 1 and 5 groups. Front should not affect bases till towards dawn.

Germany:- Much convection cloud over N.W. coast, tops above 15,000ft. Layer cloud with good clearances in Ruhr area. Cloud to great heights in frontal zones, layered at higher levels. Variable strato-cumulus S. of the fronts.

N. Italy:- Fine. Little cloud. Alps clear. Route:- base conditions to 49°N., where frontal belt will be entered, with 50-100 miles of continuous cloud in various layers up to 20-25,000 ft.; but with deep clear lanes, and possibly little cloud between 10,000ft. and 19,000ft. Patchy medium cloud in small amounts over West of France, but a layer of strato-cumulus, tops probably not above 5,000ft., will persist to Alps.

N.W. France:- Much low cloud, base below 1,000 ft.

Winds:-	750mb.	500mb.	300mb.
East Anglia - 49°N.	280°/35 m.p.h.	280°/65-70 m.p.h.	280°/110-120 m.p.h.
France - 46°N.	290°/20-25 m.p.h.	290°/40 - 45 m.p.h.	280°/60 m.p.h.
Norbury Plain.	290°/20 m.p.h.	290°/30 m.p.h.	300°/30 - 35 m.p.h.

Plan of AttackMILAN

Route Selsey Bill - Cabourg - N. End of Lake Bourget - Target - 4520N/05E - S. End of Lake Bourget - Cabourg - Selsey Bill.

Marking Method

(a) Route Marker flares, green steady, were to be dropped over Lake Bourget. 8 of the blind markers, supported by all backers-up after visual identification.

(b) 12 blind markers were each to mark the aiming-point with T.I. red and a ring of flares (4 at 6 sec. intervals).

...../(c). 6 visual markers,

(c) 6 visual markers, using red T.I. as guides, were to mark the exact aiming-point with T.I. yellow. These were not to be dropped except after certain identification of the aiming-point.

(d) 12 backers-up were to maintain the marking with T.I. green, aiming in order of preference at:-

- (1) yellow T.I. with 2 sec. overshoot.
- (2) estimated centre of green T.I. with 2 sec. overshoot.
- (3) estimated centre of red T.I. with 4 sec. overshoot.

(e) Main Force aircraft were to aim at the estimated centre of green with 1 sec. overshoot.

(f) 3 P.F.F. aircraft were to drop strings of 24 flares over a special target (Breda armaments factory) aiming their bombs at aeroplane hangars.

(g) Special force aircraft were to use these flares to identify and be their aiming-point visually. If unable to do so, they were to proceed to Milan.

(h) Route markers were to be dropped as on the outward journey.

6. Timing Zero Hour: 0115 hours T.C.T: 0112 - 0132 hours

Blind Markers

12 a/c at (Z - 3)

Visual Markers

6 a/c at (Z - 2)

Backers Up

3 a/c at (Z + 2)
8 a/c at (Z + 3)-(Z + 10)
1 a/c at (Z + 12)

Main Force

75 a/c (Z + 2)-(Z + 17)

Non-Marking P.F.F.

6 a/c at (Z - 3)

Visual Illuminators

3 a/c at zero

Special Force

28 a/c at (Z) - (Z + 6)

7. Markers Carried

Blind Markers

8 Lanc: (4 x 4 flares white) + 2 T.I. red LB. + 2 T.I. red + 2 flares green steady.
1 Lanc: (4 x 4 flares white) + 2 T.I. red LB. + 2 T.I. red

Visual Markers

6 Lanc: 2 T.I. yellow LB + 2 T.I. yellow.
12 Lanc: 2 T.I. green LB + 2 T.I. green + 2 FI green steady.

Visual Illuminators

3 Lanc: (6 x 4 flares white)

8. Tactics

WINDOFF was to be used only within 20 miles of the target.

Rate of discharge: 1 bundle per minute.

Timing

All crews were to be warned at briefing that no bombs were to be dropped before (Z + 2) on Milan or before zero on the special target.

Bombing Heights Special force, 5-8,000 ft., at the special target or below 6,000 ft. at Milan.

Double Summer Time would be in force throughout the operation.

9. Emergency Skymarking

P.F.F. informed 1, 3, 4, 5 and 6 Groups that in future all their primary markers would carry skymarkers (red + green stars) for use in an emergency created by cloud conditions. Since the timing of H2S aircraft in a ground-marking attack was entirely different from that required in sky-marking, it would not be possible to maintain continuous marking on such an emergency. Main Force aircraft should endeavour to attack at an I.A.S. of 165 m.p.h. and aim into the estimated centre of all flares visible, thus correcting for wind drift.

Sorties

10.	(a)	No. of aircraft despatched.....	140.	
	(b)	" " " reporting attack on primary area.....	133	(95.1%)
	(c)	" " " " " alternative area.....	1*	(0.7%)
	(d)	" " abortive sorties.....(technical defect.....5).....	5	(3.5%)
	(e)	" " aircraft missing.....	1	(0.7%)

* this aircraft was unable to identify its special target at the Breda works and bombed the built-up area of Milan.

Weather Experienced

11. Bases:- Local thunderstorms in Lincs. and East Anglia for take-off, persisting till midnight. Cloud then dispersed. Visibility moderate.

Route:- 4-6/10ths. layer cloud over Channel, base 6,000 ft., then 10/10ths. over French coast, tops 15,000 ft. 9-10/10ths. to Lao Bourget, tops 10,000 ft., occasionally to 15,000 ft. Varying amounts of cirrus above. Cloud broke to small amounts over Lao Bourget with clear conditions over Alps and Lombardy Plain.

Milan:- Cloudless. Visibility very hazy, but partly due to smoke in the target area. Full moon.

Winds at 18,000 ft:-	to 49°N.	-	290°/50 m.p.h.
	49-47°N.	-	290°/70 m.p.h.
	47°N.- Milan-	-	300°/35 - 40 m.p.h.
	Milan	-	290°/20 m.p.h.

Night Photographic Evidence

12.	No. of photographs examined.....	130
	" " " showing (plotted within 3 miles.....76)	
	ground detail { " outside 3 miles..... 5)	103
	{ unplotted.....22}	
	" " photographs showing (plotted..... 0)	27
	fire-tracks only (unplotted.....27)	
	" " aircraft reporting attack.....	133
	" " " estimated to have bombed within 3 miles of A/P.....	101

Narrative of Attack

13. The P.F.F. timing was good, apart from that of the blind markers who were strung out over about 10 minutes and did not provide the visual markers or the back-up with a proper pattern. The concentration was not particularly good, considering the excellent weather conditions and light defences, but the main centre was well on the aiming-point. The Breda Works were brightly illuminated by flares, and many hits were observed on the factory buildings. Large fires broke out in the town, the smoke rising to 5,000 ft.

Day Reconnaissance

14. Smoke covered the city of Milan to such an extent that reconnaissance photographs failed to give any satisfactory idea of the damage caused in this particular raid, although many new fires could be seen burning. A full report

...../on the sum results of the

on the sum results of the 4 attacks dated 7/8, 12/13, 14/15, and 15/16 August 1943, will be included in Night Raid Report No. 402.

Alternative Targets

15. One aircraft, unable to identify its special target at the Breda works bombed the built-up area of Milan.

Special Equipment

16. H2S 25 Y-aircraft were despatched - 10 blind-markers, and 15 main force aircraft carrying H2S as a navigational aid only. All the blind-marker reported attack and dropped markers, 9 on H2S and one visually. 8 of these have been plotted, mostly about 2 miles from the aiming-point in various directions. 9 of the other Y-aircraft found their sets serviceable right up to the target.

17. GEE The Southern Chain operated on the Carolina frequency throughout raid. Average ranges of 220 and 260 miles were obtained on the outward and homeward routes; these were much less than usual owing to weaker signals and stronger jamming. The interference was similar to that reported on 12/13th August, the spurious pulses being intense.

Defences

18. Flak and Searchlights The defences of Chartres were active on both outward and homeward routes, with moderate predicted heavy flak. The guns of Milan appeared to have been slightly increased, but were still ineffective except for light flak hosepiped from the Breda/Pirelli works. One aircraft was slightly damaged by flak over the target.

19. Fighters 8 approaches and one attack (over Lac Bourget) was reported. No fighter activity was overheard on intercepted wireless traffic during the outward journey, but 2 were airborne in the Ivreaux area on the return. These aircraft had evident difficulty in contacting the control. No fighter damage was sustained, but our gunners destroyed one FW.190 and one unidentified aircraft and damaged 2 other fighters.

Casualties

20.	No. of aircraft missing.....	1 (0.7%)
	" " " damaged { flak.....1 }	
	{ fighter.....0 }	1 (0.7%)
	{ other causes.....0 }	

There is no evidence of the place or cause of loss of the missing Lancaster. No damage was sustained apart from one minor hit from flak over the target.

BERLIN

21. 7 P.F.F. Mosquitoes were detailed on a harassing raid against the German capital. Difficult frontal conditions were encountered over the Low Countries, with 10/10ths cloud towering to 27,000 ft., and 2 aircraft had to return early because of icing. Another was intercepted by two fighters S.W. of Leeuwarden, and decided to abandon its mission as it had already lost time on take-off. The remaining 4 aircraft bombed Berlin. The target was practically clear of cloud, and a small glow was seen in the centre of the city as the aircraft turned for home. No flak was encountered, and no damage was sustained. All our aircraft returned safely.

MLM/JT.
BC/S. 26342/6/ORS.
15th. October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		BOMBING SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLK	FIGHTER	NOT ENEMY ACTION	ATTACKED	NOT ATTACKED	H.E.	Inc.
MILAN	8 PFF	Lanc. I	2	2	-	-	-	-	-	-	-	-	-	P. 209.0	107.5
		Lanc. III	32	30	-	-	1	-	-	-	-	-	-	-	-
	1	Lanc. I	3	3	-	-	-	-	-	-	-	1	-	M. 2.5	-
		Lanc. III	13	13	-	-	-	-	-	-	-	-	-	Heavy bombs	-
	5	Lanc. I	2	2	-	-	-	-	-	-	-	-	-	8000lb. 4000lb.	-
	Lanc. III	57	55	-	-	2	-	-	-	-	-	8	P. -	76	
MILAN TOTAL			109	105	-	-	3	1	-	-	-	1	8		
BREMA WORKS	8 PFF	Lanc. III	3	3	1 ^o	-	-	-	-	-	-	-	-	Tons of Bombs	
	1	Lanc. III	28	25	1*	-	2	-	1	-	-	-	-	H.E.	Inc.
BREMA TOTAL			31	28	1 ^o +1 ^o	-	2	-	1	-	-	-	-	P. 19.5	10.1
BERLIN	8 PFF	Mosq. IV	7	4	-	3	-	-	-	-	-	-	2	P. 3-1	
TOTAL			147	137	1 ^o +1 ^o	3	5	1	1	-	-	1	10		

^o Also attacked Primary
^{*} Unable identify special target.
 *attacked with main force on Milan.

RAID TRACK NOT AVAILABLE

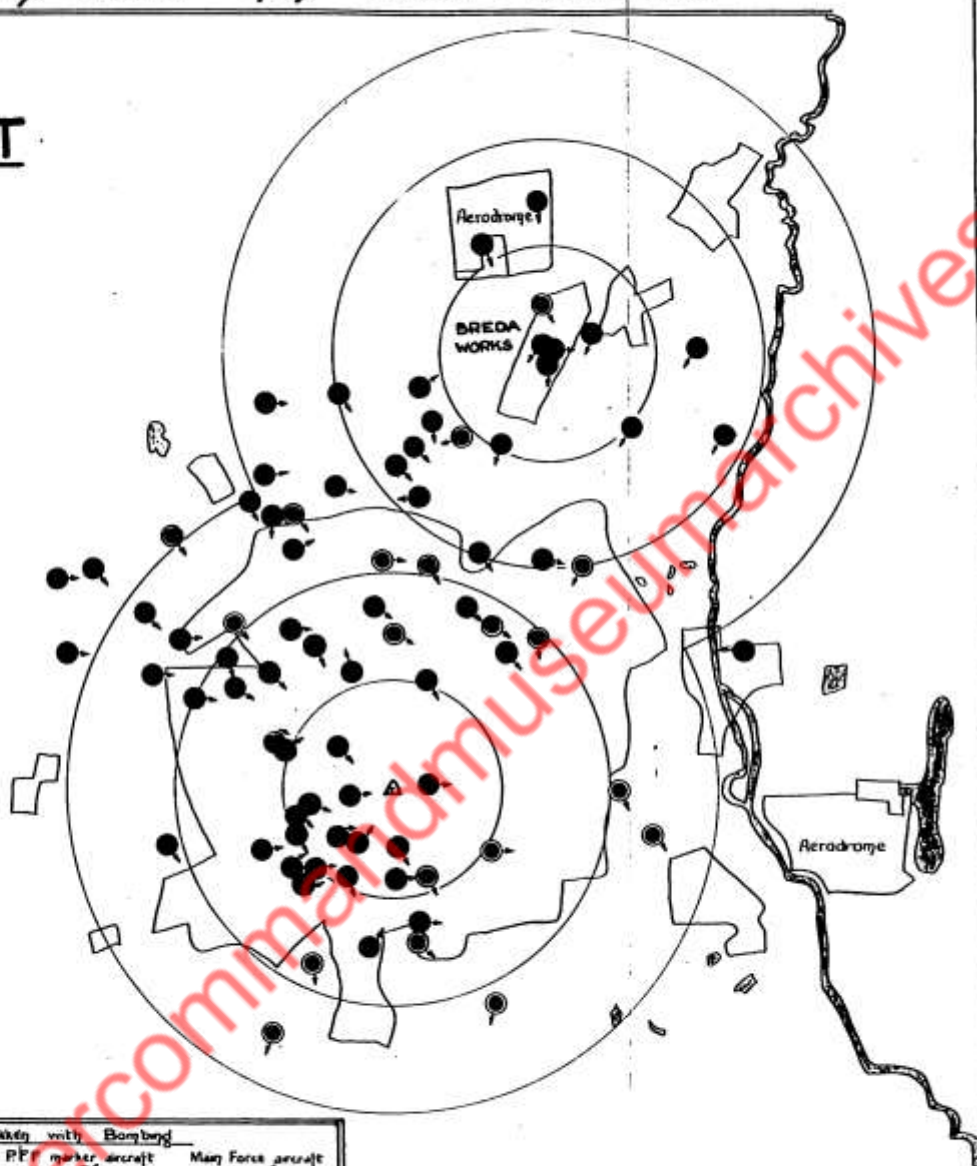
www.bombercommandmuseumarchives.ca

FINAL PLOT OF NIGHT PHOTOGRAPHS

468

TAKEN 14/15 AUGUST 1943. TARGET: MILAN

SECRET



Photographs taken with Bombs		
	PP marker aircraft	Main force aircraft
Plotted by ground detail	●	●
Plotted by fires	○	○
Plotted	By ground detail	By fires
Within 3 miles	76	-
Outside 3 miles	5	-
Unplotted	22	27
No. of prints (with bombing) examined		130

Scale:- 1 inch = 1 mile

O.R.S./B.C. 257B

Date: 1994) Tracer 9/7

Ref: N/A 401. Ctd.: (7)

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 15/16th AUGUST 1943.MILAN : Berlin : Minelaying : Leaflets.SUMMARY.

A force of 199 Lancasters delivered a very concentrated attack on the city of Milan, inflicting considerable damage. The losses, all of them aircraft of 5 Group, were heavier than usual for this target, and may be attributed to the defences in northern France rather than to Italian defences, which were not active.

8 Mosquitoes set out to attack Berlin, and 5 completed the task. All returned safely.

Minelaying

63 aircraft were despatched to lay mines in enemy waters. A total of 139 mines was laid by 57 aircraft off the Frisian Islands and the west coast of France. 16 aircraft failed to return.

Leaflets

Leaflets were scattered over northern France by 16 aircraft of Training Group. All returned safely, but one crashed on return, after a combat with unidentified aircraft.

Metereological Forecast

Home Bases:- fit all night, with varying amounts of cumulus and strato-cumulus, dispersing during the night. High and medium cloud, generally above 10,000 feet, increasing for return, particularly in 5 and northern Groups. Visibility moderate or good.

Route to Milan:- small amounts of cloud over France. Conditions over Germany uncertain; possible layers of cloud between 12,000 feet and 18,000 feet, broken, with good clear lanes. Peaks may be obscured. Return similar, but Alpine cloud more broken still.

Milan:- 5/10ths or less medium cloud between 12 and 18,000 feet.

Route to Berlin:- occasional showers over eastern North Sea and coastal areas of N.W. Germany, with 5-8/10ths cumulus and strato-cumulus, base 1,500-2,000 feet, tops to 15,000 feet, tending to lower later in the night. Cloud will break up inland, decreasing to less than 5/10ths strato-cumulus over Berlin, with good visibility.

Frisian Islands:- risk of showers. 4-8/10ths cloud, lowest base 1,500 feet. Visibility moderate to good.

Brest to Lorient:- small amounts of strato-cumulus, with well layered and broken medium and high cloud above. Moderate visibility.

S. of Lorient:- little or no cloud. Good visibility.

Winds to Milan:

750 mb.

500 mb.

300 mb.

Bases - 49°N.

290°-300°/65 m.p.h.

290°+300°/60 mph. 290°-300°/75-80 mph.

49°N - Lyons

290°-300°/25 mph.

290°-300°/55 mph. 290°-300°/75 mph.

Lyons - Target

300°/20 mph.

290°-300°/45-50 mph. 290-300°/60 mph.

/..... Milan.

LULAE.

Plan of Attack

6. Route. Solsoy Bill - Cabourg - N. end of Lac du Bourgot - TARGET - 45°20'N. 09°05'E - S. end of Lac du Bourgot - Cabourg - Solsoy Bill.

7. Marking Technique.

(a) Route-marking flares (green steady) were to be dropped over Lac du Bourgot both on the outward and return flights by 8 blind-markers, the marking to be maintained by 11 backers-up, after visual identification.

(b) Blind-markers were to drop red T.Is on the aiming point and illuminate the target with white flares.

(c) Visual markers were to drop yellow T.Is on the aiming-point.

(d) Backers-up were to aim green T.Is at yellow T.Is or the estimated centre of existing greens or of reds, in that order.

(e) Main force aircraft were to aim to overshoot the estimated centre of green T.Is by one second.

(f) If cloud conditions made it necessary the blind and visual markers were to drop release-point flares (red with green stars), the main force to aim at the estimated centre of all release-point flares, flying at an indicated airspeed of 165 m.p.h.

8. Timing. (Zero Hour - 0000 hours) Period of Attack - 2357 - 0022 hrs

Pathfinder Force.

12 blind-markers to attack at (Z - 3)

5 visual markers " " " (Z - 2)

3 backers-up " " " (Z + 2)

15 " " " from (Z + 3) to (Z + 17) at one minute intervals.

Main Force

75 Lancasters - to attack from (Z + 2) to (Z + 12).

75 " " " " (Z + 12) to (Z + 22)

13 B Group aircraft " " at (Z - 3)

9. Markers to be Carried

4 blind-markers: 4 x 4 flares white + 2 T.I. red LB + 2 T.I. red + 1 flare (rod with green stars).

8 " : 4 x 4 flares white + 2 T.I. red LB + 2 T.I. red + 1 flare (rod with green stars) + 2 flares green.

6 visual-markers: 2 T.I. yellow LB + 2 T.I. yellow + 1 flare (rod with green stars).

7 backers-up: 2 T.I. green LB + 2 T.I. green

11 " : 2 T.I. green LB + 2 T.I. green + 2 flares green.

c. Tactics WINDOW was to be dropped only within 20 miles of the target, at the rate of one packet per minute.

Sorties

No. of aircraft despatched.....	199
" " " reporting attack on primary area.....	186 (93.5%)
" " " " " alternative area.....	1 (0.5%)
" " abortive sorties (manipulative defects).....	5 (2.5%)
" " aircraft missing.....	7 (3.5%)

Weather Experienced

d. Home bases: fit for take-off. Local rain in 1 and 5 Groups, and more continuous rain, with cloud at times below 1,000 feet, in 4 and 6 Group area. Visibility moderate.

Route: variable high and medium cloud over England, up to 10/10ths. at times at 12,000 feet, breaking to small amounts over north French coast. Cloudless over France. Alps clear, but some cloud in valleys. Cloudless over Barbary Plain. Winds: climbing to 18,000 feet over England - 290°/55 m.p.h.; France, 18,000 feet/300°/40-45 m.p.h.; N. Italy, 18,000 feet/290°/40 m.p.h.

Target: no cloud. Hazy. Full moon, up all night.

Photographic Evidence

No. of photographs with bombing examined.....	179
" " " showing ground detail (plotted within 3 mls.....)	120
" " " " " outside 3 mls.....	5
" " " " " unplotted.....	22
" " " " " fire-tracks (plotted within 3 mls.....)	NIL
" " " " " " outside 3 mls.....)	NIL
" " " " " unplotted.....	32
" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming-point.....	149

Narrative of Attack

The markers were very well placed, despite the poor timing of the blind-bombers, which attacked over an interval of 11 minutes instead of simultaneously. The backing-up and the visual marking was good, and the main force bombed accurately, many photographs showing the aiming-point. The attack was concentrated in the centre of the town, with a slight spread to the south and west.

Light Reconnaissance

Reconnaissance photographs showed the results of the 4 raids in August, the nights of 7/8th., 12/13th., 14/15., and 15/16th. The cumulative effect was considerable, the incidents being slightly more concentrated in an area north of the town, between the Central Station and the Scala Farini Goods Yards, where a great deal of intense fires was seen after the raid of 12/13th., and in another area southwest of the city centre. Elsewhere the incidents were fairly evenly distributed over the city, the greater part of the damage being due to fire, although there was much demolition by H.E. Many fires were still burning 2 days after the last raid. It was estimated that about 44% of the fully built-up areas were destroyed or seriously damaged, and 14% of the less fully built-up.

Over 239 factories in the city and suburban areas were partially destroyed or damaged, 100 being identified. These included some of the most important Italian firms, such as Alfa Romeo, Isotta Fraschini, Breda and Pirelli, and the majority being concerned with engineering work, while others manufactured textiles and electrical apparatus. In all, 19 industrial concerns were totally destroyed, and 47 almost completely devastated.

...../17. Damage to

17. Damage to railway facilities was widespread but not very serious, although many tracks and sidings were hit, and goods and carriage sheds destroyed. A railway bridge was also hit, and buildings of the Central Station were superficially damaged. On 18th. August all goods depots and running lines appeared to be functioning normally.

18. 3 transformer stations, the town gas-works, 4 tram depots and 2 post-offices were among the public utilities seriously damaged. In addition 73 public or administrative buildings were damaged, 16 being almost completely wrecked. Several barracks and other military targets were also affected.

Alternative Targets

19. One aircraft dropped its load on various targets between Moulins and Macon owing to engine trouble.

Special Equipment

20. H2S 12 Y-type aircraft were despatched as blind-markers, and all attacked on H2S, 3 obtaining visual confirmation. The timing was not good, several aircraft being 5-10 minutes late. The accuracy was very good, all night photographs taken by blind-markers which were plotted being within 2 miles of the aiming-point.

21. 25 aircraft carried H2S as a navigational aid, and 21 reached the target with serviceable sets. 3 of these used it to confirm their positions when bombing.

22. GEE The Southern Chain operated on the Carolina frequency throughout. Average ranges showed an improvement, being 470 and 520 miles on the outward and homeward routes respectively. Jamming was the same as on the 12/13th. August, but the signals were very strong, and there were many reports of fixes obtained to the end of the charts.

Enemy Defences

23. Flak and Searchlights In the target area 40 to 50 heavy guns put up a barrage well below the majority of the bombers, and the 25 searchlights in operation were equally ineffective. Light flak and rocket projectiles were also reported. Elsewhere accurate heavy flak was active between Chartres and Orléans and there was a little light flak over the Alps. A few heavy guns operated at Aosta. 5 aircraft were hit by flak.

24. Fighters Intercepted wireless traffic suggested that the only fighters active on this night were in the Evreux area, where 7 aircraft operated when the bombers were outbound, and 5 on the return. 3 claimed victories, and there was one indirect reference to a bomber shot down. 11 interceptions, including 3 attacks, were reported by the bombers, but no damage was sustained. All but 4 interceptions occurred in northern France.

Casualties

25.	No. of aircraft missing.....	7 (3-5)
	" " " damaged (flak.....5)	}..... 8 (4-0)
	" " " (fighters.....NIL)	
	" " " (other causes.....3)	

It is possible that flak was responsible for 3 or 4 of the missing aircraft and fighters shot down 2 or 3. Most of these losses occurred in the Chartres area, where an enemy fighter was also destroyed. 2 Lancasters were damaged by incendiary bombs, and one crashed, and was totally destroyed, owing to engine failure.

Berlin

6. 8 Mosquitoes were despatched to attack Berlin, and 5 aircraft completed the task, bombing visually from very high level. Several bursts were seen near the centre of the city. 3 sorties were abortive owing to technical defects (2) and illness of the crew. Ground defences were active en route and over the target, bombers being hit.

Minelaying

7. Frisian Islands 24 Wellingtons of 1 Group were despatched to lay mines off the Frisian Islands and S. of Texel Island, and 19 completed the task, laying 38 mines. 3 aircraft returned early owing to technical defects and 2 were lost without trace.

8. Western France 14 of 15 Stirlings despatched by 3 Group laid a total of 53 mines off La Pallice and in the Gironde Estuary, one of these sustaining minor flak damage. The fifteenth Stirling failed to return.

9. Northwest France 4 and 6 Groups sent out 24 Wellingtons, which laid a total of 48 mines off St. Nazaire, Brest and Lorient, all returning undamaged.

Leaflets

10. 15 of 16 Wellingtons despatched by Training Groups scattered leaflets at key places in northern France, and the sixteenth dropped the leaflets on an alternative area, Lisieux. None was damaged by enemy action, but on the return the aircraft was shot down over England by an unidentified aircraft.

W/JT.

S. 25342/ /ORS.

14th. October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		Tons of Bombs		
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A	ATTACK-ED	NOT ATTACK-ED	H.E.	Inc.	
MILAN	8 PFF	Lanc.III	35	35	-	-	-	-	1C+1	-	-	-	1	-	P. 364.5	205.6
	8 MAIN FORCE	Lanc.III	12	12	-	-	-	-	-	-	-	1	-	-	1.7	1.2
	1	Lanc.I	5	5	-	-	-	-	-	-	-	-	1	2	12.5	8.6
	5	Lanc.III	62	57	-	1	4	-	1	-	-	1	2	-	Heavy Bombs	4000lb.
		Lanc.I	7	6	-	-	-	1	-	-	-	1	1	P. 147	-	-
		Lanc.III	78	71	1	-	-	6	2	-	1B+1C+1	1	3	M. 4	4	-
MILAN TOTAL			199	186	1	1	4	7	1C+4	-	1B+1C+1	3	8	-	-	-
BERLIN	8 PFF	Hooq.IV	8	5	-	-	3	-	3	-	-	-	-	-	P. 3.8 tons H.E.	-
BOMBING TOTAL			207	191	1	1	7	7	1C+7	-	1B+1C+1	3	8	-	-	-
MINELAYING	1	Well.X	20	15	-	-	3	2	-	-	-	-	-	-	30 mines	-
S. OF TEXEL	1	Well.X	4	4	-	-	-	-	-	-	-	-	-	-	8 mines	-
LA PALMICE	3	Stir.III	5	4	-	-	-	1	1	-	-	-	-	-	13 mines	-
GIRONDE	3	Stir.III	10	10	-	-	-	-	-	-	-	-	-	-	40 mines	-
ST. NAZAIRE	4	Well.X	8	8	-	-	-	-	1	-	-	-	-	-	16 mines	-
BREST	4	Well.X	8	8	-	-	-	-	-	-	-	-	-	-	16 mines	-
LORIENT	6	Well.X	8	8	-	-	-	-	-	-	-	-	-	-	16 mines	-
MINELAYING TOTAL			63	57	-	-	3	3	2	-	-	-	-	-	139 mines	-

...../Contd.

MILAN: BERLIN: Minelaying: Leaflets: 15/16th. AUGUST, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A	ATTACK-ED	NOT ATTACK-ED	
BOMBING TOTAL			207	191	1	1	7	7	1C+7	-	1B+1C+1	3	8	-
MINELAYING TOTAL			63	57	-	-	3	3	2	-	-	-	-	-
LA PALMICE	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	-
BLOIS	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	-
TOURS	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	-
LA FLECHE	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	1	-
LAVAL	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	-
COMPIEGNE	91	Well.Ic	1	1	-	-	-	-	-	1E	-	-	-	-
REIMS	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	-
	92	Well.III	1	-	1	-	-	-	-	-	-	-	-	-
MONTELOUIS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	-
REIMS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	-
ETAMPES	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	-
ABBEVILLE	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	-
ARONVILLE	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	-
LECON	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	-
CHATELAIN	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	-
DREUX	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	-
MINELAYING TOTAL			16	15	1	-	-	-	-	-	1E	-	1	-
TOTAL			286	263	2	1	10	10	1C+9	-	2B+1C+1	3	9	-

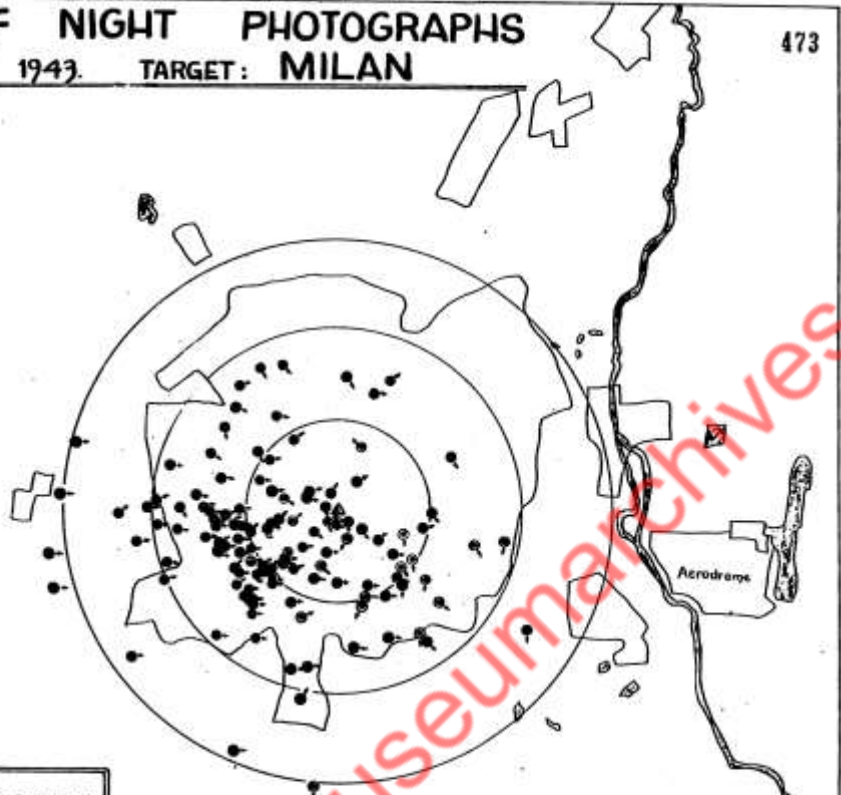
RAID TRACK NOT AVAILABLE

www.bombercommand.com/airmarches.ca

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 15/16 AUGUST 1943. TARGET: MILAN

473

SECRET



Photographs taken with Bombing		
	PFF marker aircraft	Map force aircraft
Plotted by ground detail	⊙	●
Plotted by fires	⊙	●
Plotted	By ground detail	By fires
Within 3 miles	120	—
Outside 3 miles	5	—
Unplotted	22	32
No of prints (with bombing) examined		179

Scale: 1 inch = 1 mile

ORS/BC 2508
 Date 20/9/43 Searched
 Ref N 4 402 0 4 566

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 16/17th AUGUST, 1943.TURIN.SUMMARY.

154 heavy bombers of 8 and 3 Groups made a concentrated attack on the town of Turin. The Fiat works were among the industrial premises damaged on this night. 4 bombers failed to return.

Metereological Forecast.

Estimated midnight position of fronts: (1) cold from Central Wales to Lincolnshire; (2) warm from 57°N. 02°E. - W. Holland.

Home bases: much cloud in N. England, probably with rain and cloud base 1000 feet or below; in S. England, variable amounts of cloud with clearances and local showers towards dawn. Visibility expected to be 2,000 yards or more S. of the cold front. 8 Groups should be fit all night, with small amounts of cloud at first, increasing 7-10/10ths later, base not below 1,500 feet, and visibility for return not below 2 miles.

Germany: much strato-cumulus and broken medium cloud in Hamburg - Kiel - Bremen area. Between 51°N. and 52½°N., strato-cumulus with breaks. Over W. Germany, 51°N., fine.

France, Alps and Italy: fine.

Turin and route: small amounts of cloud over Continent, including N. Italy.

Winds:	750 mb.	500 mb.	300 mb.
Base to 49 N.	270°/25 mph.	280°/45-50 mph.	270°/50 mph.
49 N. to Lyons	290°/15 mph.	300°/35 mph.	250°/35 mph.
Lyons to Turin	310°/15 mph.	320°/25 mph.	250°/20 mph.

TURINRoute of Attack

Route. Selsey Bill - 48°22'N. 00°20'E - N. end of Lac du Bourgot* - Target
 - S. end of Lac du Bourgot* - 47°50'N 00°00'E - 49°16'N. 00°40'W -
 Selsey Bill.

* See "Tactics" - para. 7.

Marking Technique

(a) Route marking flares (green steady) were to be dropped over Lac du Bourgot on outward and homeward flights by 8 Blind-markers; the marking was to be maintained by 6 backscup after visual identification.

(b) Blind-markers were to drop red T.Is on the aiming-point, and illuminate the target with white flares.

(c) Visual markers were to mark the aiming-point with yellow T.Is after visual identification. If necessary they were to release white flares.

/..... (d)

(d) Backers-up were to aim green T.Is to overshoot yellow T.Is by 2 seconds, or the estimated centre of green T.Is by 2 seconds, or of red T.Is by 3 seconds, in that order of preference.

(e) Main force aircraft were to aim to overshoot green T.Is by one second.

(f) If cloud conditions made it necessary, release-point flares would be dropped by all Y-type aircraft manned by qualified crews.

5. Timing. Zero-hour - 0015 hours. Period of Attack - 0012-0032 hours.

Pathfinder Force. (Halifaxes only).

12 blind-markers at (Z - 3).

6 visual-markers at (Z - 2).

2 backers-up at (Z + 2).

5 " from (Z + 3) - (Z + 7) - one aircraft per minute.

3 " at (Z + 9) - (Z + 10) and (Z + 12) - one at each time.

Main Force.

11 Halifaxes of 8 Group at (Z + 3) Turin Town Centre.

84 Stirlings of 3 ") - (Z + 2) - (Z + 17) "

14 Lancasters " 3 ")

25 Stirlings " 3 " (Z + 2) - (Z + 17) Fiat works if identified.

6. Markers to be Carried

8 blind-markers: 4 x 4 flares white + 2 T.Is red LB } 2 T.Is red + 1 release-point flare + 2 flares green.

4 " " 4 x 4 flares white + 2 T.Is red LB + 2 T.Is red + 1 release-point flare.

6 visual-markers: 1 x 4 flares white + 2 T.Is yellow LB + 2 T.Is yellow + 1 release-point flare.

6 backers-up: 2 T.Is green LB + 2 T.Is green + 1 release-point flare.

4 " " 2 T.Is green LB + 2 T.Is green.

Tactics

7. WHIDON was to be dropped at the rate of one packet per minute within 20 miles of the target. All 8 Group aircraft except backers-up were to proceed Lac du Bourget to 45°20'N 07°40'E., and from there make a north-south approach to the target. Backers-up and 3 Group aircraft were to fly directly from Lac du Bourget to the target. 25 Stirlings were to attack the Fiat works if identified; otherwise they were to attack Turin town centre.

Sorties

8.	No. of aircraft despatched.....	154
	" " " reporting attack on primary area.....	133 (8)
	" " " " alternative area.....	5 (1)
	" " abortive sorties (technical and manipulative defects).....	12 (1)
	" " aircraft missing.....	4 (1)

/..... Weather Experience

Weather Experienced.

9. Home bases: fit all night, apart from East Anglia, where there was local fog and mist between 0200 and 0300 hours, with fog and low stratus affecting 50-60% of airfields in this area by 0600 hours. Winds: 260 / 30 n.p.h.

Route: cloudless apart from patches of medium cloud over France. Wind: 15,000 ft/280°/30 n.p.h.

Target: no cloud. Hazy. Surface wind: calm. Wind at 18,000 foot/330° /20 n.p.h. Full moon all night.

Night Photographic Evidence

10.	No. of photographs with bombing examined.....	115
	" " " " showing ground detail (plotted within 3 mls...74)	
	(" outside 3 mls... 4)	.89
	(unplotted.....)	11
	" " " " " fire tracks.. (plotted within 3 mls...NIL)	
	(" outside 3 mls...NIL)	.26
	(unplotted.....)	25
	" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming-point.....	100

Narrative of Attack

11. The blind-markers attacked fairly accurately and on time, but owing to haze over the target the visual-markers brought back their yellow T.I's. The back-up effectively marked the target during the required period, and a concentrated attack developed. Some of the Stirlings detailed to attack the Fiat Works bombed green T.I's owing to haze.

Daylight Reconnaissance

12. Fresh damage definitely attributable to this raid included damage to the Fiat Works, to Viberti and Co. (coach-builders) and 2 unidentified factories. A number of buildings near the main railway station were also severely damaged.

13. In the 4 attacks on the nights of 12/13th July, 7/8th, 12/13th and 15/17th August, almost the whole of the town was affected, the most extensive damage being in the industrial and residential districts in the north and northeast. 10 buildings of the Fiat Works were damaged, 8 seriously. At least 50 other industrial concerns were damaged, including engineering works, and firms making electrical equipment, chemicals and textiles. The royal arsenal, the government tobacco factory, 3 railway stations and several warehouses were also hit. Residential damage was mainly to blocks of flats, over 330 of which were damaged.

Alternative Targets

14. 4 aircraft attacked alternative targets in the areas of Lacon, Marcilly, Donnoval and Courtalin, and another dropped its load 10 miles N.W. of the target.

Special Equipment

15. H2S. 11 Y-type aircraft were detailed to act as blind-markers, and 9 attacked, one dropping bombs only as his set was not working well enough to be certain of his position. The timing on the blind-markers was excellent and their accuracy good. 2 blind-markers failed to return.

16. H2S was used by 25 aircraft as a navigational aid; 22 of these reached the target with serviceable sets, 2 using it to check their position at bombing.

17. GKE. The Southern Chain operated on the Carolina frequency throughout the raid, and on the Zanesville frequency from 2200 to 2300 hours and 0230 to 0330 hours. The average ranges were 370 and 330 miles on the outward and homeward routes, and one navigator reported reception over the target. Jamming was heavy on the Carolina frequency but weak on the Zanesville frequency. However, the Carolina transmission was the stronger, and fixes were obtained at greater distances on this frequency than on the Zanesville.

Enemy Defences

18. Flak and Searchlights. Flak was reported at Turin, where the defences appeared to have increased, but were still weak and inaccurate, and over the Caen area, where 12-19 heavy guns were in action. 5 aircraft were hit by flak.

19. Fighters. Intercepted wireless traffic indicated that patrols were operating over Northern France, but these may have been directed against Fighter Command intruders. The one unsuccessful pursuit overheard was probably against an intruder. 8 interceptions were reported, including 3 attacks, all of which occurred over Turin. 3 aircraft were damaged by fighters.

Casualties

20. No. of aircraft missing..... 4 (2.5%)
 " " " damaged (flak..... 5)
 (fighters..... 3)..... 13 (8.4%)
 (other causes..... 5)

It was estimated that one aircraft was shot down by flak, over Argentan while outbound, and 3 were shot down by fighters over Turin, Lac du Bourget and over the English Channel on the return. 4 aircraft were damaged in landing accidents and one made a forced landing owing to engine failure.

110/PVD.
 BC/3.26342/4/ORS.
 17th October, 1943.

TURIN 16/17th. AUGUST, 1943.

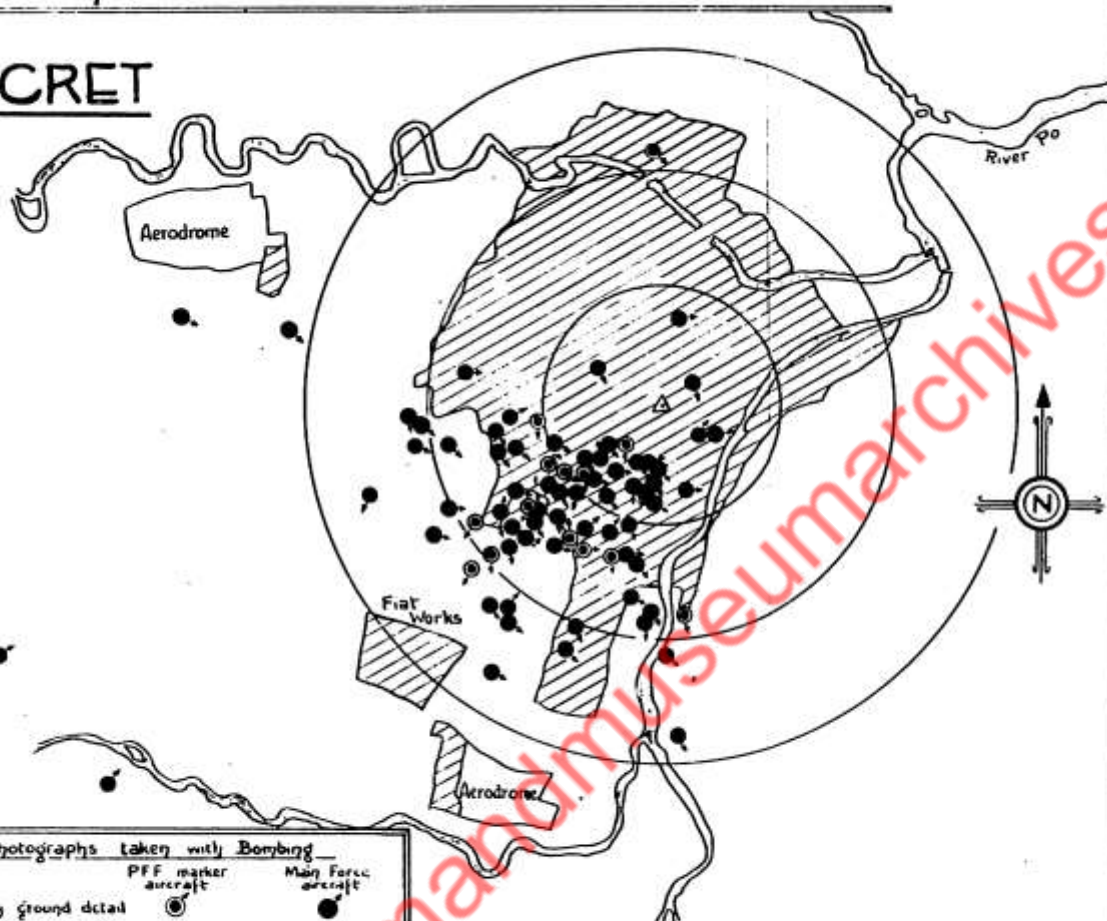
TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	SEC. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT R/A	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E. Inc.
TURIN	8 HFF	Hal.IIaV	2	2	-	-	-	-	-	-	1A	-	3	P. 112.8	125.5
		Hal.Ia	24	22	-	-	-	2	1	1	-	1	-	A. 1.7	5.5
	8 MAIN FORCE	Hal.IIaV	4	2	1	1	-	-	-	-	-	-	-	N. 4.0	2.0
		Hal.Ia	7	7	-	-	-	-	-	-	-	-	-	-	Heavy Bombs
3	Stur.I Stur.III Lanc.II	Stur.I	1	-	-	1	-	-	-	-	-	-	-	P. -	12
		Stur.III	102	88	4	3	6	1	4	1	1B+	1	1	A. -	-
		Lanc.II	14	12	-	1	-	1	-	1AD	-	1	1	N. -	1
TOTAL			154	133	5	6	6	4	5	1AC+2	1B+3C+1A	3	5		

RAID TRACK NOT AVAILABLE

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 16/17 AUGUST 1943 TARGET: TURIN

477

SECRET



Photographs taken with Bombing		
	PFF marker aircraft	Main Force aircraft
Plotted by ground detail	●	●
Plotted		
Within 3 miles	By ground detail 74	By fires -
Outside 3 miles	4	
Unplotted	11	26
No. of prints (with bombing) examined.	115	

Scale: - 1 inch = 1 mile

ORS/BC 2478
 Date 11 930 Tracer: JZ
 Ref MR40364d - ICC

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BOMBER COLAND REPORT ON NIGHT OPERATIONS 17/18th AUGUST 1943.PEENEMÜNDE, Berlin.SUMMARY.PEENEMÜNDE

1. 597 aircraft were detailed to attack the research and experimental station at Peenemünde, a small target of the highest priority. The force attacked in 3 waves, each wave having a separate aiming-point. A Master Bomber remained over the target throughout the raid issuing instructions to aircraft as they arrived. He was greatly responsible for the success of the operation. Much of the station was devastated and a number of highly important buildings were destroyed. 40 bombers were lost in conditions especially favourable to the night fighter.

Berlin

2. 8 Mosquitoes were despatched on a harassing raid against the German capital. They dropped their bombs an hour before the attack began at Peenemünde, and succeeded in diverting at least 2 Groups of fighters from the main target. One Mosquito was lost without trace; another crashed on return, but without injury to the crew.

Weather Forecast

Midnight frontal positions:- (1) warm from Stormway to Aberdeen to Rotterdam to 49°N. 10°E., becoming cold to Vienna and eastwards.

Bases:- Risk of isolated thunderstorms in later part of night. Otherwise bases should everywhere hold fit, with cloud base nowhere below 1,500'. Moderate visibility.

Germany:- Multi-layered cloud on warm front. Little cloud N.E. of the front - possibly thin strato-cumulus. Fine weather S. of the front. Swinmünde: probably less than 5/10ths alto-cumulus, and little or no cloud. Chance of clear sky. At worst 7-8/10ths medium cloud. Moderate Visibility. Route:- some thin medium cloud, especially on first half of route. Contrails may be troublesome above 15,000'.

N. Italy:- Fine.

Winds to Swinmünde:-	750 mbs.	500 mbs.	300 mbs.
Bases: 2°E	200°/30 mph.	210°/35 mph.	230°/40 mph.
2°E - 7°E	240°/25 mph.	270°/35 mph.	280°/40 mph.
7°E - Target	290°/35 mph.	290°/45 mph.	290°/70 mph.

Plan of Attack

Routes 1, 3, 4, 5, 6 Groups 5510N/0700E - 5520N/0829E - 5441N/1325E - Rudon Island - Target - Lando - 5510N/0700E.

8 Group 5500N/0500E - 5520N/0829E - 5441N/1320E - Rudon Island - Target - Lando - 5500N/0500E.

Marking Technique.

(i) "Datum Light Red Spot Fires" were to be dropped on the Northern edge of Rudon Island by all blind-markers and 13 of the backers-up.

AIMING POINT P.

(ii) Blind-markers were to mark the A/C with T.I. red and strings of flares.

They were not to drop their bombs on this run, but would make a second run and drop them after the visual markers.

(iii) Visual markers were to mark the exact A/P with T.I. yellow, but only after certain identification.

(iv) Backers-up were to aim T.I. green in order of preference at:-

- (a) T.I. yellow.
- (b) centre of all T.I. green
- (c) centre of all T.I. red with 3 sec. overshoot.

AIMING POINT B.

(v) Shifters were to aim their T.I. red at the centre of all T.I. green, and were to approach exactly over Auden Island with their bombsights on the following false settings:-

Target height	5,000 ft.
T.V.	2,800 ft. per sec.

T.I. to be on single and salvo. They were then to wait 10 seconds before releasing their stick of bombs. Other settings were to be normal. Attack to be made at 12,000 foot. This would result in the T.I. dropping on the 2nd A/P when aimed at the first.

(vi) Backers-up to aim T.I. green at:-

- (a) centre of T.I. red
- (b) centre of T.I. green

AIMING POINT E.

(vii) Shifters were to aim red T.I. at centre of T.I. green as in (v), thereby marking the 3rd A/P while aiming at the second.

(viii) Backers-up were to proceed as in (vi)

Main Force were to aim their bombs at the centre of T.I. green, or as directed by the Master Bomber. They were to ignore T.I. red and T.I. yellow.

6. Timing Zero Hour: 0015 hours T.O.T.: 0011 - 0055 hours.

AIMING POINT Z.

Blind Backers

15 a/c at (Z-4)
No T.I. after zero but flares might be dropped after this time.

Visual Markers

6 a/c at (Z-2)
No T.I. after (Z+2)

Backers-up.

3 a/c at zero
2 a/c at (Z+1)
10 a/c (1 per min)
from (Z+2) to (Z+11)

Main Force

(Z+2) to (Z+15)	143 Hala.
	59 Stirs.
	25 Lancs.
	227 a/c

AIMING POINT F.

Shifters

6 a/c at (Z+12)

Backers Up.

3 a/c at (Z+14)
9 a/c (1 per min) from (Z+15)
to (Z+23)

Main Force

115 Lanc. at (Z+16) to (Z+27)

AIMING POINT E.

Shifters

6 a/c at (Z+24)

Main Force

(Z+28) to (Z+40) 126 Lancs.
54
180 a/c

Backers Up

3 a/c at (Z+26)
10 a/c (1 per min) from (Z+27) to (Z+36)

7. Total number of a/c planned.

Blind Markers 15 Visual Markers 6 Shifters 12 Backers Up 50
Main Force 522 Total 606 a/c.

8. Markers to be carried.

- (i) Blind Markers 15 Lancs. (3 x 4 flares, white) + 1 T.I. red LB + 3 T.I. red spot.
- (ii) Visual Markers 6 Lancs. 2 T.I. yellow LB + 2 T.I. yellow.
- (iii) Backers-up 23 Lancs. + 4 Hals. : 2 T.I. green LB + 2 T.I. green. 13 Lancs. : 2 T.I. green LB + 2 T.I. green + 3 T.I. red spot.
- (iv) Shifters 8 Lancs. + 4 Hals. : 2 T.I. red LB + 2 T.I. red.
- (v) Master Bombers 3 Lancs. : 2 T.I. red + 2 T.I. green + 2 T.I. yellow

9. Tactics

(i) WINDOW Continuously from 0800E to target and back to 0800E at the rate of one bundle per minute except between 0800E and 1000E where the rate was to be doubled.

(ii) Master Bomber A Master Bomber with two deputies was to give a commentary on the raid.

(iii) Importance of Target. The vital importance of this target was to be stressed to all crews.

(iv) Bombing Winds. Would be broadcast as previously.

(v) Bombing Height. 1 & 6 Groups were to bomb as low as possible between 6,000 and 10,000 ft. No a/c below 4,000 ft.

(vi) Bomb Loads. H.E. loads would be carried by all 4 Group and non-marking P.F.F. and by 75% of 1, 3, 5 and 6 Groups. Those aircraft carrying incendiaries were to bomb at the end of the attacks on each aiming point in order to interfere as little as possible with the marking technique.

(vii) Defences Non-marking P.F.F. Master Bomber were to carry anti-personnel bombs for use on flak defences in the target area.

(viii) "Red Spot Fires" Were to be used for the first time. These markers consist of a 250 lb. case, filled with cotton wool soaked in liquid. They burst and ignite at 3,000 ft. and burn on the ground like a vivid crimson fire for about 10 minutes.

/..... Sorties.

Sorties

10.	(a) No. of aircraft despatched.....	597	
	(b) " " " reporting attack on primary area.....	531	(89.0%)
	(c) " " " " " " " alternative area.....	3*	(0.5%)
	(d) " " abortive sorties (technical defect or manipulative error.....)	18)	
		(sickness of crew.....)	3)
		(late take-off.....)	1)
		(bombs hung up.....)	1)
	(e) " " aircraft missing.....	40	(6.7%)

* plus three aircraft which also attacked the primary.

Weather Experienced.

11. Bases:- Lincolnshire fit all night. East Anglia fit apart from local thunderstorms from 0100 - 0400 hours. Yorkshire: low stratus affected coastal districts by 2300-2400 hours, and the whole of S. Yorks by 0300 hours. Local thunderstorms from 0400-0500 hours - then generally fit.

Route:- Variable layer cloud, tops 4,000'; over North Sea, generally 5/10ths or less. No cloud over Denmark. Patches of 10/10th layer cloud over Baltic to 14°E; thence cloudless to target. Return: similar, but 10/10th medium cloud in layers from 2-3°E to English coast at 10-17,000', with isolated thunderstorms. Visibility good.

Peenemunde:- Small amounts of layer cloud at 3,000'. Moon nearly full. Visibility good, but smoke screen in target area. Surface wind: W/10 mph.

Winds: Base - Danish coast at 18,000' : 250°/45 mph, decreasing to 30 mph. from Danish coast to 11°E and veering slowly to 290°, then increasing towards target to 290°/40 mph.

Enemy Airfields:- little cloud. Moderate visibility.

12. Night Photographic Statistics

No. of photographs examined.....	457
" " " showing ground detail (plotted within 3m.....)	171)
	(" outside 3m..... 0)
	(unplotted..... 53)
" " " showing fire-tracks (plotted within 3 m.....)	18)
	(" outside 3m..... 0)
	(unplotted..... 215)

It is probable that nearly all the aircraft bombed within 3 miles, and the majority within 1 mile of the aiming-point. The presence of a smoke-screen over the target makes an exact assessment impossible.

Narrative of Attack.

13. The blind-markers opened the attack well on time, but not accurately, most of their T.I. falling 1½ - 2 miles beyond their correct aiming point "P". This seems to have been due to Ruden Island, their release point, registering poorly on the Y-apparatus; many aircraft carried on and mistakenly released their markers on the image of the northern tip of the Peenemunde peninsula. Some crews tried to confirm their position visually, but were misled by the similarity of the Karlshagen Labour Camp to the buildings around their aiming point. Fortunately, however, one aircraft (156/0) dropped its markers really accurately and was supported by the Master Bomber and 5 visual markers between zero - 3 and zero + 2. At least 4 of these 6 salvos of yellow were placed near aiming point "P", although a very effective smoke screen, started soon after the first markers were dropped, hampered visual identification. Only one visual marker dropped his yellow near the inaccurate concentration of reds. The backscattered up supported the good work of the visual markers; of the 8 plotted by

photographs, 6 are shown in the immediate vicinity of aiming point "F". The first wave of the main force attacked soon after the first groups of the backers-up had fallen, and about two-thirds of the aircraft bombed the correct concentration, the remainder being diverted to the encampment.

14. The first wave of "shifters" attacked punctually between zero + 10 and zero + 12. 4 of the 5 were plotted, but only one showed aiming point "B", the others overshooting to aiming point "F". The second wave of backers-up naturally tended to support the incorrect markers of the shifters, but were warned of their inaccuracy by the Master Bomber, with the result that this phase of the attack came to be fairly well centred on aiming point "B", although slightly to the seaward side of the factory.

15. The transfer from aiming point "B" to "E", was less successful than that from "F" to "B". 5 of the 6 shifters in the next wave were plotted, 3 between "E" and "B" and 2 the other side of "F". Because of this overshooting, most of the third wave of backers up also bombed 1-1½ miles beyond the correct position, so that much of this wave was centred on "B" instead of on "E". The Master Bomber was apparently under the impression that this was the correct aiming point, and continually broadcast that the groups were well placed, exhorting the main force to support them. No T.I. were photographed on aiming point "E" until zero + 33, and even then comparatively few aircraft bombed them. Those which did so employed visual identification, or else a time and distance run from Ruden Island.

Day Reconnaissance

16. Photographs taken 12 hours after the attack showed many buildings still burning in the Experimental Station at Peonowunde. Damage to factories and houses for personnel was extremely severe. In the N. manufacturing area (Experimental Establishment - A.P. "E"), 27 buildings of medium size, including the Senior Officers' Mess, were completely destroyed, and 9 others, including some of the largest and most important, badly damaged. In the S. manufacturing area (Factory Workshops - A.P. "B"), one large building was partly demolished by 2 direct hits, and another of equal size seriously affected. A medium-sized building was damaged by a direct hit, and another by blast. Many hits were recorded on the railway tracks in this part of the station, and one on a stationary train. The steampipe which skirts the foreshore on the E. side was disrupted in at least 10 places. The target area was full of craters.

17. In the living and sleeping quarters (Karlshagen K.D.F. Camp - A.P. "F"), 40 small detached huts were completely flattened and 50 more gutted by fire or shattered by H.E., as well as 3 large barrack-type blocks in the central section. One of the camp, a large carriage shed was half demolished, and a coal dump was still on fire at the time of photography. In the nearby labour camp to the S., at least 23 out of 45 large huts for personnel were completely destroyed, and others damaged. A few detached houses suffered badly from H.E.

Alternative Targets

18. 3 aircraft resorted to alternative targets: 2 bombed Sylt and a third an island E. of Rostock. 3 other aircraft, which had already attacked the primary, dropped bombs on Ruden Island (2) and Stralsund.

Special Equipment

19. H2S: 67 Y-aircraft were despatched - 16 blind-markers and 51 main force aircraft carrying H2S for navigational purposes only. 15 of the blind-markers reported attack, 12 dropping flares and T.I. on H2S, and the other three retaining their markers, since their sets were unserviceable. 39 main force aircraft found their sets in working order over the target but none used them for bombing. 2 H-aircraft were lost.

20. GEE: The Northern Chain operated on the Utah frequency and the Eastern Chain on the Wyoming frequency throughout the raid. The Eastern Chain also operated on the Arizona frequency from 2315 to 0145 hours. Average ranges of 315

and 340 miles were obtained, and the maximum range was 524 miles. Many types of jamming were reported, and this was the limiting factor on the Wyoming frequency. The weakness of the Utah transmission limited the ranges on the Northern Chain, but relatively free fixes were obtained on the Arizona frequency, which was mainly jammed by "noise." The use of various transmission frequencies forced the enemy to spread his jamming, so that fixes were obtained on the normal frequency beyond the usual range, several being over 400 miles and one 524 miles.

Defences

21. Flak and Searchlights:- Light flak was active in the target area against low flying aircraft. Heavy flak was reported as slight, in the form of barrage at 10,000 ft. There were few searchlights near the target. Active opposition was encountered off the track at Flensburg, Kiel and Abnora. 14 aircraft were damaged.

22. Fighters:- Little was overheard of individually controlled fighters but one patrol was intercepted on V.H.F. Other V.H.F. traffic may not have been heard because of the distance of all the overland part of the route from our intercepting stations. A running commentary was, however, heard in operation from 2220 until 0224, announcing the probable target for the approaching force consecutively as Kiel, Berlin, Rostock, Swinemunde and Stettin. At least 2 groups of fighters were directed to the German capital after the diversionary Mosquitoes had dropped their bombs. From aircraft heard landing on W/T it is estimated that the total fighter effort was about 100 aircraft. R/T gave no indication of the success achieved, apart from one fighter which claimed the destruction of 3 bombers as it was about to land at Sylt. 92 interceptions were reported, including 26 attacks, not an excessive number for so long a journey in bright moonlight. Fighter activity was marked along the whole route, but especially along the first part of the homeward journey. 7 returning bombers were damaged by enemy aircraft.

Casualties

23.	No. of aircraft missing.....	40 (6.7%)
	" " " damaged (flak..... 14)	
	(fighter..... 7).....	33
	(non-enemy action.... 11)	

The aircraft attacked in 3 waves - 231 Lancasters, Stirlings and Halifaxes from zero + 2 to zero + 12 : 113 Lancasters from zero + 16 to zero + 24 : and 180 Lancasters and Halifaxes from zero + 28 to zero + 40. 6 aircraft were lost in the first wave (2.5%), 3 (2.7%) in the second wave and 29 (6.1%) in the third wave. The reasons for the heavy losses in the last wave are probably:-

- (1) The fighters sent to Berlin had probably returned.
- (2) More than half these aircraft bombed from less than 8,000'.
- (3) The last wave straggled and 35 aircraft bombed in 15 minutes after the planned end of the attack.

24. 34 losses have been located; 11 in the target area (4 to fighter and 7 to flak) 9 outbound (1 to fighter, 4 to flak at Flensburg, Sylt, Lando and Abnora and 4 to unknown causes), 13 hombound (4 to fighter, 4 to flak, and 5 to unknown causes) and one on route, the direction of which is uncertain. Fighters were probably responsible for most of the unknown losses.

BERLIN

25. 8 P.F.F. Mosquitoes were ordered to make a diversionary raid on Berlin an hour before the start of the main attack. 7 bombed the capital, from a clear sky. One aircraft overshot on landing and was destroyed, but the crew escaped unhurt. One aircraft was lost without trace. All carried WINDON.

MIL/PVD.
BC/3.26342/2/ORS.
20th October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		A/C REPORTING OVER ENEMY TERR.		MISSING	DAMAGE			INTERCEPTIONS		RESULTS			
				PRIM. AREA	ALL. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FLAMMER	NOT E/L.	FLAK-KILLED	NOT ATTEMPTED	Tons of Bombs			
															H. E. Inc.		
BERGHEIM	B PFF.	Hal. IIAV	1	1	-	-	-	-	-	-	-	-	-	-	P. 1518.0	270.0	
		Hal. IA	14	13	-	-	-	1	-	-	-	-	-	-	N. 9.3	2.1	
		Lanc. I Lanc. III	1 58	1 55	1 ^o	-	-	3	-	-	-	-	-	-	-	M. 122.7	26.6
	B MAIN FORCE	Hal. IA	6	5	-	-	-	-	1	-	-	-	-	-	-	-	-
		Lanc. III	14	14	2 ^o	-	-	-	-	-	-	-	-	-	-	-	-
	1	Lanc. I	20	18	-	-	2	-	-	-	-	1AC	1	2	-	-	
		Lanc. III	93	86	2	-	2	3	-	1AC+1	2	5	14	-	-	-	
	3	Stur. I	1	1	-	-	-	-	-	-	-	-	-	-	-	-	
		Stur. III Lanc. II	53 12	47 11	-	-	4	2	1	-	-	1B	5	5	-	Heavy Bombs 4000lb.	
	4	Hal. IIAV	87	80	1	-	3	3	1AC+5	1	1B+1	4	10	-	P. 227	-	
		Hal. IA	58	55	-	-	1	2	1	-	-	-	9	-	N. 2	-	
	5	Lanc. I	23	10	-	-	1	4	-	-	-	1AC+1	-	2	-	M. 14	
		Lanc. III	96	79	-	-	2	13	6	2AC	1AC+2	9	8	-	-	-	
	6	Hal. IIAV	37	29	-	-	2	6	-	-	-	1	2	7	-	-	
Hal. IA		16	12	-	-	-	4	-	1AC	-	-	-	1	-	-		
		Lanc. II	9	6	-	-	1	2	-	-	-	-	2	-	-		
BERGHEIM TOTAL			597	531	3+3 ^o	1	22	40	1AC+13	4AC+3	2B+3AC+6	26	66	Tons of Bombs			
BERLIN			8	7	-	-	-	1	1E	-	-	-	-	H. E.			
TOTAL			605	538	3+3 ^o	1	22	41	1E+1AC+13	4AC+3	2B+3AC+6	26	66	P. 5.2 N. 8			

^o Also attacked Primary.

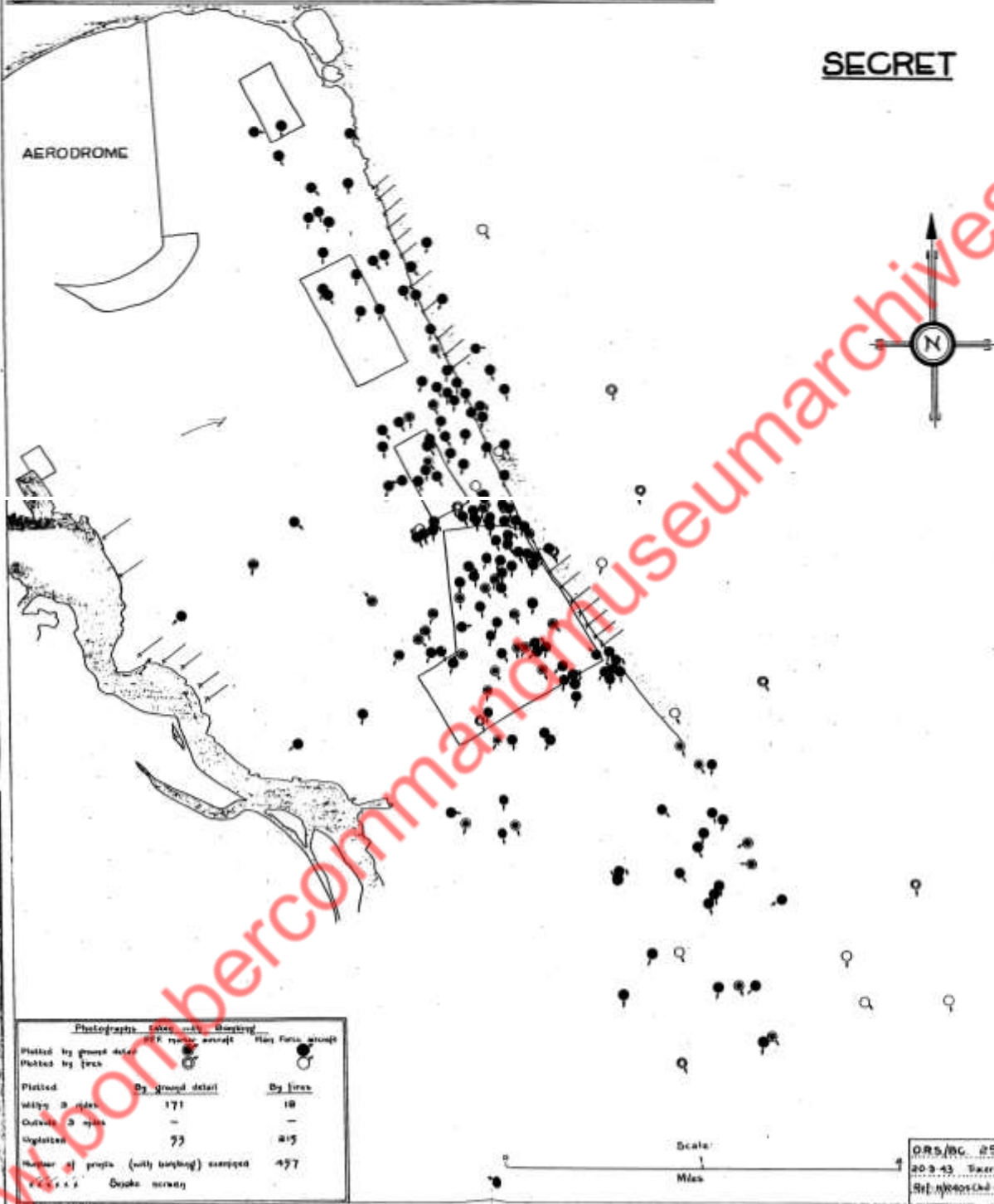
RAID TRACK NOT AVAILABLE

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FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 17/18 AUGUST 1943. TARGET: PEENEMÜNDE.

482

SECRET



Photographs taken with Stenby

	By ground detail	By fire
Plotted by ground detail	171	18
Plotted by fire	-	-
Plotted	171	18
With 3 sides	-	-
Outside 3 sides	-	-
Exhausted	73	25
Number of prints (with burning) exposed	457	

Double screen

Scale: 1 Mile

ORS/BC 259B
 20-9-43, Taken 17
 BY NIGHT/20-9-43

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 18/19th. AUGUST, 1943.LEAFLETSSUMMARY

1. 18 Wellingtons of 93 Group dispersed leaflets uneventfully over various towns in Northern and Central France; 2 others returned early for technical reasons. No damage or casualties were sustained.

Weather Forecast

2. Midnight frontal positions:- centre of low pressure off N.E. Scotland, with (1) warm front from centre to W. Denmark to 50°N. 09°E. (2) cold from centre to Zuyder Zee to Dijon to 45°N. 04°E. (3) cold from centre to E. Belgium to 44°N. 00°.

Bases:- doubtful; probably variable amounts of cloud, with fog developing locally towards dawn.

Germany:- widespread thunderstorms in frontal zones over North Sea and Continent. Much cloud at medium levels E. of the warm front. Little cloud E. of 15°E.

N. Italy:- little cloud. Alps covered.

N.W. France:- variable amounts of convection cloud.

Sorties

- | | | | |
|----|-----|---|----|
| 3. | (a) | No. of aircraft despatched..... | 20 |
| | (b) | " " " reporting leaflets dropped in prim. area..... | 17 |
| | (c) | " " " " " " " alt. area..... | 1+ |
| | (d) | " " abortive sorties..... | 2+ |
| | (e) | " " aircraft missing..... | 0 |

+ technical defect.

Weather Experienced

4. No cloud except at Orleans (10/10ths). Heavy ground haze. Three - quarters moon. Visibility generally good.

Enemy Defences

5. No opposition was reported.

Casualties

6. All aircraft returned undamaged.

MLM/JT.
BC/S. 26342/1/ORS3,
14th. October, 1943.

LEAFLETS: 18/19th. AUGUST, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGASSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRDL AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT K/A	ATTACK- ED	NOT ATTACK- ED	
BLOIS	93	Well. I Well. III	1 1	1 1	- -	- -	- -	- -	- -	- -	- -	- -	- -	
DREUX	93	Well. III	1	1	-	-	-	-	-	-	-	-	-	
CHARENTAIS	93	Well. III	2	2	-	-	-	-	-	-	-	-	-	
ANGERS	93	Well. I Well. III	1 1	1 1	- -	- -	- -	- -	- -	- -	- -	- -	- -	
L. FLECHE	93	Well. I	1	1	-	-	-	-	-	-	-	-	-	
ORLEANS	93	Well. I	2	2	-	-	-	-	-	-	-	-	-	
TOURS	93	Well. III	2	1	-	-	1	-	-	-	-	-	-	
ST. MICO	93	Well. III	2	2	-	-	-	-	-	-	-	-	-	
RENNES	93	Well. III Well. I	2 2	1 2	1 -	- -	- -	- -	- -	- -	- -	- -	- -	
LEVAL	93	Well. III	2	1	-	-	1	-	-	-	-	-	-	
TOTAL			20	17	1	-	2	-	-	-	-	-	-	

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 19/20th. AUGUST, 1943.BERLINSUMMARY

1. 8 P.P.F. Mosquitoes were detailed to carry out a harassing raid on Berlin. 6 bombed the capital, 1 returned early for technical reasons and one was lost.

Weather Forecast

2. Midnight frontal positions:- (1) occlusion from 59°N. 09°W. to 58°N. 05°W., becoming (2) warm from 58°N. 05°W. to Yorkshire to Portland Bill to N.W. France, and (3) cold from 58°N. 05°W. to Wigtown to Dublin, then S.W'wards. (4) cold from 50°N. 20°E. to Vienna to Alps.

Bases:- Cold front should not reach Operational Groups till dawn. At dusk, 1, 4 and 6 Groups will have moderate visibility and 7-10/10ths. cloud, mostly layered, lowest base 1,500'. 3, 5 and 8 Groups will have cumulus and strato-cumulus, base 2,000', tops 6,000', with broken medium cloud above and good visibility. For return (from N. Italy), 8-10/10ths. multi-layered cloud, base 1,000' in extreme S., lifting to 1,500' or above over operational areas. Visibility 2-4 miles, locally 1 mile.

Germany:- Hamburg-Kiel-Bremen: strato-cumulus with a few breaks. Central Germany (including Ruhr, Middle Rhine and Berlin): small amounts of strato-cumulus.

N. Italy:- Little cloud. Route: fine over France, risk of solid wall of cumulo-nimbus over Alps, with tops to 30,000'.

N.W. France:- Low stratus, with fog patches.

Sorties

- | | | | |
|----|-----|---|----------|
| 3. | (a) | No. of aircraft despatched..... | 8 |
| | (b) | " " " reporting attack on prin. area..... | 6 |
| | (c) | " " abortive sorties..... | 1+ |
| | (d) | " " aircraft missing..... | 1(12.5%) |
- + technical defect.

Weather Experienced

4. Berlin:- 4-7/10ths. strato-cumulus, tops 9,000'. Moon 66% of full. haze. Visibility good.

Enemy Defences

5. A little heavy flak was encountered from the guns of Berlin. One aircraft was slightly hit. No fighters were observed.

Casualties

6. One Mosquito did not return. Nothing was heard from the crew, and there is no evidence to suggest the cause or place of loss. The enemy communique stated that we lost an aircraft on this night, but mentioned no cause and did not specifically claim the aircraft as a victim of the defences.

M/JT.
S. 26342/1/ORS3,
19th. October, 1943.

REF: 19/20th. JUNE, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		DAMAGE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLAN	FIGHTER	NOT R/-	ATTACK- ED	NOT ATTACK- ED	Tons of Bombs H.E.	
BERLIN	8 PFF	Mosq. IV	8	6	-	-	1	1	1	-	-	-	-	P. 4.7 M. .8	

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 22/23rd AUGUST, 1943.LEVERKUSEN: Brauweiler: Hamburg: Minelaying: Leaflets.SUMMARY.LEVERKUSEN.

An OBOE groundmarking attack was planned against the I.G. Farbenindustrie works at Leverkusen, 10 miles N. of Cologne, but the target was covered with three layers of 10/10ths cloud and 9 of the 13 Mosquitoes failed through an incorrect setting of the Bailey Beam, so that the attack achieved no concentration. 417 of the 42 aircraft despatched reported attack, and, although reconnaissance showed only one incident in the chemical works, the German communique reported heavy casualties among the population of Cologne. We lost 5 bombers.

Brauweiler.

12 Mosquitoes left to attack the power station at Brauweiler on OBOE; but the Bailey Beam again caused trouble, and 7 had to bomb targets in the Ruhr visually. 5 attacked the primary and the other 2 returned early with engine trouble. No losses were sustained.

Hamburg.

6 Mosquitoes were sent on a harassing raid against Hamburg; 3 completed their attack. All returned safely.

Minelaying.

10 Wellingtons laid mines off the Dutch coast; but 25 out of 37 Stirlings despatched to the Frisians had to return early because of GEE failure. The remaining 10 reached their target. None were lost or damaged.

Leaflets.

7 Wellingtons dispersed leaflets uneventfully over towns in Northern France.

Weather Forecast.

Midnight frontal positions:- (1) cold front E. of Kiel and Hamburg to chain to W. Alps. (2) occlusion from Scilly islands to Brest to 44°N, 07°W.

Bases:- Fit all night. 5-8/10ths cumulus and cumulo-nimbus at dusk, tops 10-12,000 ft. Local heavy showers with cloud base 1,500 ft., and tops to 3,000 ft. Good visibility.

Germany:- Area of layer cloud behind cold front which should become well defined in the Ruhr by midnight. Probable conditions at 2300 hours: 8-9/10ths medium cloud at 12,000 ft., with uncertain amounts (probably 4-6/10ths) of residual cumulus at 4,000 ft. Medium cloud may have cleared Cologne by 0100. Hamburg will not clear till 0200. Persistent contrails likely above 20,000 ft. Local heat thunderstorm at 53°N 06°E is expected to die out quickly. E. of cold front: thunderstorms from 10,000 ft. cloud to great heights.

N. Italy:- Broken medium and low cloud.

France:- Little cloud in centre, increasing medium and low cloud in N.W. rain.

.../Winds to Ruhr

2.

Winds to Ruhr:-	<u>750 mbs.</u>	<u>500 mbs.</u>	<u>300 mbs.</u>
Bases:	240°/30 m.p.h.	220°/35 m.p.h.	210-190°/40 m.p.h.
- to 50.N.07E.	230°/25 "	210°/45 "	190°/80 "
- to target	210°/40 "	210°/40 "	190°/70 "

Winds to Hamburg:-			
- to Bight		210°/45 "	190°/85 "
Hamburg		210°/40 "	180°/75 "

LEVERKUSEN.

Plan of Attack.

7. Route.

5150.N/0230.E - Knooke - 5025.N/0705.E - 5042.N/0730.E - Target -
5103.N/0620.E - Noordwijk - 5235.N/0330.E.

8. Marking Technique.

- (a) Mosquitoes were to mark the exact A.P. with T.I. Red.
- (b) Backers-up were to aim T.I. green at T.I. red, if seen, with no overshoot otherwise at the centre of T.I. green with 1 sec. overshoot.
- (c) Main Force aircraft were to aim at T.I. red or the centre of T.I. green.
- (d) 11 Mosquitoes on training were to attack at the end of the main attack.

9. Timing.

Zero Hour: 2400 hours. T.O.T. 2356 - 0036 hrs.
(originally planned 1 hour earlier)

Mosquitoes.

Main Force.

10 a/c from (Z - 4) to (Z + 28) at 4 min. intervals. (+ 3 reserves).	1st wave (Z + 2) to (Z + 8)	73 La
	2nd wave (Z + 8) to (Z + 16)	100 Ha
	3rd wave (Z + 16) to (Z + 22)	73 La
	4th wave (Z + 22) to (Z + 30)	100 Ha
	5th wave (Z + 30) to (Z + 36)	73 La
		<u>419 a</u>

Backers-up.

2 a/c at (Z + 2)
22 a/c from (Z + 3) to (Z + 31)
@ 1 a/c/min except at times
of Mosquitoes and at (Z + 23)

Non-Marking P.F.F.

13 a/c at (Z + 2)

10. Markers to be carried.

<u>Mosquitoes.</u>	13 Mosq:	2 T.I. red LB + 2 T.I. red.
<u>Backers-up.</u>	24 Lano:	2 T.I. green LB + 3 T.I. green.

11. Tactics.

WINDOW to be used. Rate of discharge: one bundle per minute, on track from 0250.E to target and back to 0330E.

...../Sorties

Sorties

12.	(a)	No. of aircraft despatched.....	462
	(b)	" " " reporting attack on primary area.....	417 (90.2%)
	(c)	" " aircraft reporting attack on alternative area.....	4 (0.9%)
	(d)	" " abortive sorties (technical defect or manipulative error..... 34) (sickness of crew..... 2).....	36 (7.8%)
	(e)	" " aircraft missing.....	5 (1.1%)

Weather Experienced

13. Bases:- Variable amounts of cloud, generally small. Visibility moderate to good.

Route:- Little cloud over North Sea and Continent to 20 miles from target. Good visibility. Wind at 17,000ft: 240°/30-40 m.p.h.; at 22,000ft. 220°/30-40 m.p.h..

Leverkusen:- 10/10ths. medium cloud, tops 12-15,000ft.; 7-10/10ths. above to 20-23,000ft.; 10/10ths. from 29,000ft. to 31,000ft. Light rime in cloud above 20,000ft. St. Elmo's fire. Contrails above 20,000ft. Thunderstorms. Quarter moon. Wind at 20,000ft.: 190°/40 m.p.h.

Night Photographic Statistics

14. None of the photographs showed ground detail owing to cloud.

Narrative of Attack

15. 9 of the 13 Mosquitoes failed to attack. 22 of the 23 back-up reached the target, but no markers were dropped except by one aircraft which released them accidentally with its bombs. No concentration could be achieved by the main force, although they kept to their planned time-table; there were some reports of dummy T.I. and flares shot up by the enemy, and these added to the confusion.

Day Reconnaissance

16. Reconnaissance showed no damage to the chemical works except to a large 3-bay building in the N.E. corner. The German High Command communique spoke of "very heavy casualties" among the population of Cologne, and also mentioned Dusseldorf as having received the brunt of the attack, although the latter statement seems unlikely in view of the line of approach.

Alternative Targets

17. 4 aircraft attacked alternative targets, 3 in the areas of St. Trond, Nieuwe-Sluis and Willebroeck, and the fourth in an unspecified position.

Special Equipment

18. OBOE 13 OBOE Mosquitoes, including 3 reserves, were despatched by the P.F.F. Only 4 aircraft, 2 of which were reserves, were successful, with the result that there were large gaps in the marking. Some of the failures were due to technical trouble in the OBOE system, but the majority were due to the aircraft being out of position when the time came for them to start their runs. This was caused by an inaccurately laid Bailey Bean, which led many navigators astray.

19. H2S 19 aircraft carried H2S, solely for navigational purposes. 14 reached the target with their sets in working order and 3 bombed blindly on H2S. All returned safely.

20. GEE The Eastern Chain operated on the Wyoing frequency throughout the raid and on the Arizona frequency from 2300 to 0100 hours. The average range on the outward route was 290 miles and on the return 265 miles. One aircraft/received Gee over the

received GEE over the target, at a distance of almost 400 miles. Jamming of various types was seen on both frequencies, the worst being "noise". On the outward route spurious pulses were seen over Belgium, but they were not reported on the return over Holland. Wyoming signals were strong, but blotted by jamming. The Arizona signals were reported as weak, possibly because they were completely jammed at the range for which they should have been used.

Defences

21. Flak and Searchlights Searchlights were unable to penetrate the cloud, but illuminated it to silhouette our bombers for the benefit of the fighters. Barrage fire was encountered all along the Dusseldorf-Cologne belt, in which Leverkusen is situated, and the guns of Aachen, Munchen-Gladbach, Hertogenbosch, Brussels, Antwerp and Knocke were active en route. 20 aircraft sustained minor damage from flak.

22. Fighters Intercepted wireless traffic suggested that a dual system of fighter control was used W. of Gilze, attempts being made to vector single fighters. 7 such attempts were heard, but none resulted in contacting bombers. E. of Gilze and over the Ruhr, an indeterminate number of fighters were given general directions concerning the progress and height of the bombers. The indirect outward route and the scatter of our force caused the control considerable difficulty. The intention seemed to be to direct the fighters to the main target but the scattered bombing made this difficult to discover, and many fighters were despatched to Dusseldorf. One fighter claimed 2 successes, but radio traffic gave no indication of any other contact with British aircraft.

23. 3 attacks and 9 combats were reported on the outward journey, 3 combats over the target area and 5 attacks and 8 combats on the homeward route. These figures are very low for this area, and the heavy cloud must have greatly hampered the effectiveness of the fighter force operating under loose control over the Ruhr and Rhineland. 2 aircraft were damaged by fighters.

Casualties

24.	No. of aircraft missing.....	5 (1.1.5)
	" " " damaged (flak.....20)	
	{ fighter..... 2 }	24
	{ non-emy action..... 2 }	

Crews' observations suggest that 2 bombers were shot down by fighters near Cologne and Utrecht, and one by flak in the target area. The other two missing aircraft may have been destroyed by fighters near Bonn and Ghent.

BRAUWEILER

25. 12 OBOE Mosquitoes were despatched to bomb the power station at Brauweiler but only 3 succeeded. The Bailey Bean, inaccurately laid, was again the troublesome factor, although 2 aircraft had to return early with engine trouble. 5 bombed Leverkusen visually, and 2 others attacked Cologne and Coblenz. All returned undamaged.

HAMBURG

26. 6 Mosquitoes went on a harassing raid against Hamburg. The target was covered with 10/10ths. cloud up to 26,000ft., but 3 aircraft attacked on D.R. runs from GEE fixes. The other three returned early, one on being attacked by a fighter, one for technical reasons and one because of the sickness of its observer. No losses or casualties were sustained.

...../RELAYING.

MINELAYING

27. 47 minelayers were despatched by 3 and 4 Groups - 37 Stirlings to the Frisians and 10 Wellingtons to the Dutch coast. All the Wellingtons reached their target, each aircraft laying 2 mines; but 25 Stirlings had to return early, because of GEE failure. Visibility was poor over the islands, very dark with a thick haze, although there was no cloud. No opposition was reported, and all aircraft returned undamaged from both areas.

LEAFLETS

28. 7 Wellingtons of 91 Group dispersed leaflets according to plan over the towns of Caen, Laval, Le Mans, Angers, Alencon, Argentan and Chartres. 2 fighters were seen but no combats resulted. All our aircraft returned without damage.

MLM/JT.
BC/S. 26342/2/ORS.
21st. October, 1943.

22/23rd. AUGUST, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS Tons of Bombs H.E. Inc.
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLANE	FIGHTER	NOT R/A	ATTACK-ED	NOT ATTACK-ED	
LEVERKUSEN	8 PFF	Mosq. IV	6	1	-	5	-	-	-	-	-	-	-	P. 824.0 877.6 A. 6.3 7.4 W. 9.4 13.6
		Mosq. IX	7	3	-	4	-	-	-	-	-	-	2	
		Lanc. III	23	22	-	-	1	-	4	-	-	-	-	
	8 NEW FORCE	Lanc. III	13	10	-	-	3	-	-	-	-	-	-	Heavy Bombs 8000lb. 4000lb F. 8 232 A. - - V. - 3
		Lanc. I	18	17	-	-	1	-	-	-	-	-	2	
	4	Lanc. III	87	85	-	-	1	1	2	-	-	-	5	
		Hal. IIIV	82	75	2	-	5	-	3	-	-	3	10	
	5	Hal. IA	56	51	1	-	3	1	4	-	-	-	7	
		Lanc. I	18	15	-	-	3	-	1	-	1	-	1	
	6	Lanc. III	90	86	-	-	2	2	1, C+5	1	1, C	3	16	
Hal. IIIV		40	33	-	-	6	1	-	-	-	-	3		
Hal. IA		14	11	1	-	2	-	-	-	-	-	-		
	Lanc. II	8	8	-	-	-	-	-	1, C	-	2	1		
LEVERKUSEN TOTAL			462	417	4	9	27	5	1, C+9	1, C+1	1, C+1	8	45	Tons of Bombs
BRAUWEILER	8 PFF	Mosq. IV	12	3	7	-	2	-	-	-	-	-	-	P. 2.3 H.E. A. 7.7
HAMBURG	8 PFF	Mosq. IV	6	3	-	3	-	-	-	-	-	1	-	P. 2.2 H.E.
BOMBING TOTAL			480	423	11	12	29	5	1, C+9	1, C+1	1, C+1	9	45	

...../Contd:

LEVERKUSEN: BRAUWEILER: HAMBURG: MINELAYING: Leaflets:
22/23rd. AUGUST, 1943. (Contd:)

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS Tons of Bombs
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLANE	FIGHTER	NOT R/A	ATTACK-ED	NOT ATTACK-ED	
BOMBING TOTAL			480	423	11	12	29	5	1, C+9	1, C+1	1, C+1	9	45	
MINELAYING PRISTIAN	3	Stir. III	37	12	-	-	25	-	-	-	-	-	-	67 mines
S. of TROOP	4	Well. X	10	10	-	-	-	-	-	-	-	-	-	20 mines
MINELAYING TOTAL			47	22	-	-	25	-	-	-	-	-	-	87 mines
LEAFLETS	91	Well. Ic.	1	1	-	-	-	-	-	-	-	-	1	
CLERK	91	Well. Ic.	1	1	-	-	-	-	-	-	-	-	-	
LAVO	91	Well. Ic.	1	1	-	-	-	-	-	-	-	-	-	
VE MANS	91	Well. Ic.	1	1	-	-	-	-	-	-	-	-	-	
ANDRE	91	Well. Ic.	1	1	-	-	-	-	-	-	-	-	-	
LONDON	91	Well. Ic.	1	1	-	-	-	-	-	-	-	-	-	
ARGENTON	91	Well. Ic.	1	1	-	-	-	-	-	-	-	-	-	
CHARTRES	91	Well. Ic.	1	1	-	-	-	-	-	-	-	-	-	
LEAFLET TOTAL			7	7	-	-	-	-	-	-	-	-	2	
TOTAL			534	452	11	12	54	5	1, C+9	1, C+1	1, C+1	9	47	

RAID TRACK AND BOMB PLOT NOT AVAILABLE

BOMBER COMFLND REPORT ON NIGHT OPERATIONS - 23/24th AUGUST, 1943.BERLIN: Minelaying: leaflets.SUMMARY.BERLIN.

1. 710 heavy bombers, with 8 OBOE Mosquitoes as route markers and 9 Mosquitoes to carry out a support attack, set out to bomb Berlin. The target was marked by Y-type aircraft, which all dropped T.I's. S.W. of the aiming-point. A fairly concentrated attack developed in this area, which was completely obscured by smoke from about 100 fires when reconnaissance photographs were taken. Enemy aircraft were very numerous over the target, and it is estimated that at least 35 of the 56 missing aircraft were lost to fighters.

Minelaying.

2. 40 Wellingtons were despatched to lay mines off N.W. France and the Frisian Islands. 64 mines were laid by 32 aircraft, and all returned undamaged.

Leaflets.

3. Leaflets were scattered over northern France by 18 of 22 Wellingtons which set out. No aircraft was lost.

Meteorological Forecast.

Estimated midnight position of cold front, 20°E over Germany.

Home bases: generally fit for take-off, with some local showers, particularly in the N., clearing during the night. Bases mainly fit for return, with small amounts of cloud. Rather poor visibility in smoky areas. Diversions available in 91 and 93 groups.

Germany and Denmark: patches of layer cloud in Ruhr - Middle Rhine area. Broken strato-cumulus over Hamburg and S. Denmark. Over Denmark N. of 55°N., much cloud, both convection and strato-cumulus, tops of convection cloud not above 15,000 ft. Broken medium and low cloud in Berlin area.

France: well-broken strato-cumulus.

Alps: convection cloud, tops probably limited to 15,000 ft.

Plain of Lombardy: well broken layer cloud.

Berlin and Route: 3-7/10ths convection cloud, tops 12,000 ft., possibly to 15,000 ft. locally, amounts decreasing along route. Over the target, probably 5/10ths less thin layer cloud at various levels, but there may be 10/10ths medium cloud near Berlin. Slight threat of thundery outbreaks near target area. On return, less cloud over land, but still 3-7/10ths cumulus over eastern North Sea.

Frisian Islands: broken convection cloud, base 2,000 ft., but down to 1,000 ft. occasional showers on the coast.

Winds:	750 mb	500 mb	300 mb
Bases - 5°E.	250°/30 n.p.h.	250°/30 n.p.h.	250°/35-40 n.p.h.
5°E - 11°E (out)	270°/20 "	220°/30 "	210°/45 "
(home)	260°/25 "	220°/35-40 "	210°/55 "
11°E - Berlin	270°/20 "	210°/45 "	200°/60 "

...../BERLIN

BEULIN.Plan of Attack.

5. Route: East Coast - $52^{\circ}50'N$. $03^{\circ}30'E$. - Egmond - $52^{\circ}50'N$. $09^{\circ}30'E$. - $52^{\circ}05'13^{\circ}47'E$. - TARGET - $52^{\circ}50'N$. $13^{\circ}40'E$ - $54^{\circ}20'N$ - Iano Island - $55^{\circ}00'N$. $07^{\circ}00'E$. - East Coast.

6. Marking Technique.

(a) 8 OBOE Mosquitoes were to drop red T.I's at $52^{\circ}50'N$. $06^{\circ}52'E$ (10 miles N. of track) and green T.I's at $52^{\circ}35'N$. $07^{\circ}02'E$ (10 miles S. of track) to mark the route. These markers were to be maintained throughout the passage of the main force.

(b) 8 blind-markers were to drop route markers (red spot fires) at $52^{\circ}47'E$. $12^{\circ}32'E$ (8 miles S. of Brandenburg). These were to be maintained by 13 backers-up and 2 recentrers.

(c) Blind-markers were to drop red T.I's on the aiming point if certain of their position.

(d) Backers-up were to aim green T.I's to overshoot estimated centre of red T.I's by 2 seconds or of green T.I's by 3 seconds.

(e) Recentrers were to drop green T.I's using H2S if serviceable; otherwise revert to backers-up.

(f) Main force aircraft were to aim at the estimated centre of all green T.I or as directed by the Master Bomber.

(g) Release-point flares were to be dropped by all Y-type aircraft if necessary.

7. Timing of Attack. Zero hour - 2345 hours. Period of Attack 2343-0027 hrs.Pathfinder Force.

29 blind-markers at $(Z - 2)$
 22 recentrers from $(Z + 10)$ - $(Z + 40)$ - 2 aircraft every 3 minutes.
 7 backers-up at $(Z + 1)$
 3 " " " $(Z + 2)$
 27 " " from $(Z + 3)$ - $(Z + 39)$ 1 minute except at times for recentrers
 8 OBOE Mosquitoes to drop route markers from 2210-2245 hrs. (one every 5 minutes)

Main Force.

90 Lancasters - $(Z + 2)$ - $(Z + 8)$
 113 Halifaxes - $(Z + 8)$ - $(Z + 15)$
 127 Stirlings - $(Z + 15)$ - $(Z + 23)$
 107 Lancasters - $(Z + 23)$ - $(Z + 29)$
 113 Halifaxes - $(Z + 29)$ - $(Z + 36)$
 88 Lancasters - $(Z + 36)$ - $(Z + 42)$
 10 Mosquitoes (Support attack) - $(Z + 16)$

8. Markers to be Carried.

OBOE Mosquitoes: 2 T.I. red LB + 2 T.I. green LB.

Blind-markers: 29 Lancasters } 2 T.I. red LB + 2 T.I. green LB
 9 Halifaxes } + 2 T.I. green.

Backers-up: } 29 Lancasters } 2 T.I. green LB + 2 T.I. green
 Recentrers: } 15 Halifaxes }

15 Halifaxes: 2 T.I. green LB + 2 T.I. green + 1 red spot fire.

Master bomber: 1 Lancaster: 4 T.I. green.

All Y-type aircraft to carry 1 flare (red/green stars).

9. Tactics. WINDOW was to be dropped, at the rate of one packet per minute, from $52^{\circ}00'N.$ to $9^{\circ}20'E.$ and $12^{\circ}E.$ to target to $8^{\circ}E.$ The Master Bomber was to broadcast from (Z - 1) to (Z + 10). A support attack was to be carried out by 10 Mosquitoes, carrying H.E. and WINDOW, which was to be dropped at the rate of 1 bundle per minute, from $52^{\circ}00'N.$ $13^{\circ}20'E.$ to the target, and en route home until the supply was exhausted. WINDOW was also to be carried in the bomb doors, and these bundles were to be released with the bombs over the target.

Sorties.

10.	No. of aircraft despatched	727
	" " " reporting attack on primary area	575 (79.1%)
	" " " " " " alternative area	17 (2.3%)
	No. of abortive sorties (technical & manipulative defect 69)	
	{ weather 3	
	{ illness of crew 4	79 (10.9%)
	{ navigational error 2	
	{ damaged by birds 1	
	No. of aircraft missing	56 (7.7%)

Weather Experienced.

11. Route: Variable amounts of convection cloud, mainly 7-8/10ths tops 10-12,000 ft. increasing locally to 10/10ths S. of Bremen, with tops to 15,000 ft. or above. Heavy clear ice was encountered at times in cloud, with bumpiness and occasional static. Cloud dispersed to small amounts E. of $11^{\circ}E.$ On return, little cloud was met between Berlin and the W. Danish coast. Cloud increased to 7-10/10ths., tops 10-12,000 ft. over the North Sea, decreasing again between $5^{\circ}E.$ to bases.

	<u>Winds:-</u>	<u>15-18,000 ft.</u>	<u>25,000 ft.</u>
	Bases to $5^{\circ}E.$	240°/25 n.p.h.	250°/25 n.p.h.
	$5^{\circ}E.$ - $10^{\circ}E.$	220°/40 "	220°/35 "
	$10^{\circ}E.$ - Target	230°/25-35 "	200°/45 "

Target: Mainly cloudless. Moderate visibility, with smoke haze. Half moon, rising about 2330 hours.

Flight Photographic Evidence.

12.	No. of photographs with bombing examined	468
	" " " showing (plotted within 3 miles 4)	
	ground { " outside 3 " 147	168
	detail (unplotted 17)	
	" " " showing (plotted within 3 miles NIL)	
	fire { " outside 3 " 250	300
	tracks (unplotted 50)	
	" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming point	5
	" " " estimated from the photographic evidence to have bombed the Target Area of Berlin	180

Narrative of Attack.

13. The route marking was successfully carried out by 6 OBOE Mosquitoes and as far as can be ascertained the marking with red spot fires by Y-type aircraft S. of Brandenburg was also accurate. Many of the main force, however, were late, and approached the target from the S.W. instead of following the planned route, which could have brought them in from S.S.E.

14. 9 Mosquitoes were despatched to drop WINDOW over Berlin, to help protect early Pathfinders. 8 of these attacked on E.T.A., 6 from the last GEE fix, and 2 after pinpointing on Hanover.

15. The timing of the blind-markers was good, but the red T.I's appeared to be centred on a point about 4 miles S.W. of the aiming point. The backers-up marked the target continuously from zero to (Z + 51), but several bombed short, so that the centre of the attack moved back to 6 miles S.S.W. of the aiming point. The Master Bomber believed the greens were well placed, and encouraged the main force to bomb them. About half the rocentrers realised that the attack was misplaced, and bomb north of the concentration. Since, however, their T.I's (green) were the same as those of the backers-up few of the main force were attracted, and the bombing remained centred 6 miles S.S.W. of the aiming-point. Consequently the Charlottenburg/Wilmersdorf area suffered severely, but the centre of Berlin escaped serious damage. It was estimated that about $\frac{1}{2}$ of the attack fell on the vulnerable area Berlin and most of the remainder on lightly built-up suburban areas.

Daylight Reconnaissance.

16. Photographs taken about 8 hours after the attack showed smoke drifting W. from fires in the Charlottenburg district, making most of the prints covering the S.W. of the city, the S. central area and the Wedding area almost useless for interpretation of damage. A chain of about 80 fires was seen on the western fringe of this great pall of smoke. These fires appeared to be burning in the top storeys of residential buildings, starting from Bismark Strasse in the N. of the Charlottenburg district to Bahnhof Steglitz in the S. The cloud of smoke in the Wedding area probably originated from fires burning there. In all about 100 fires were seen. There was little fresh damage in the central city area or in the N. of Berlin.

17. No further photographs were taken until 6th September, after 2 more major raids on the city. An account of the damage caused in all 3 raids is given in Night Raid Report No. 417.

Alternative Targets.

18. 19 aircraft, including 2 which attacked the primary target, bombed alternative targets. 3 of these aircraft bombed 2 alternatives each. These targets were in areas of Vechta (3), Quakenbruck (2), Thedinghausen (2), Bremen, Hazelnur, Nienburg, Twistringen, Lingen, Wittlingen, Walsrode, Hou Zittau, Kuppen, Altendorf, Cardelego, Egmond, Alkmaar, airfield, Mildonmeer dummy airfield and an unidentified airfield.

Special Equipment.

19. OBOE. 6 of the 8 OBOE Mosquitoes despatched dropped route markers successfully. One abandoned the task over base after flying into a flock of birds which damaged the aircraft, and the other returned early owing to OBOE failure.

20. H2S. 30 Y-type aircraft were detailed as blind-markers, and 25 reported attack. Of these, 19 dropped markers using H2S, and 6 aimed H.E. at T.I's, 5 owing to unserviceable sets and one because he was uncertain of his position. The blind markers were instructed to bomb on a range and bearing fix from the hooked projection on the N. side of Berlin. It appears that this projection being on the far edge of the city was not seen and strong echoes from areas much nearer to individual aircraft were mistaken for it.

21. A further 21 Y-type aircraft were despatched as rocentrers. 18 of these dropped their markers, 13 on H2S and 5 as backers-up. Those which obtained plot photographs bombed in the same area as the blind-markers, presumably being misled the same way.

22. 30 of the 43 aircraft carrying H2S for navigational purposes only, reached the target with serviceable sets. One bombed blind, and 3 others confirmed their positions with its aid. In all 94 H2S aircraft were despatched, and of these 64 reached the target with serviceable sets. 10 of the remainder returned early and 10 were lost.

23. GEE. The Northern Chain operated on the Utah frequency throughout, and the Eastern Chain on the Wyoming frequency throughout and the Maryland frequency from 2215 to 0115 hours. Although the average ranges were only 230 and 300 miles, a maximum range of 510 miles was obtained. Interference on the Wyoming frequency showed no change, being most intense over Holland and Denmark. The Maryland frequency was not jammed and the Utah frequency only slightly. However, signals on these frequencies were not strong and few navigators saw the A signals on either frequency. The Maryland transmission failed altogether on the return owing to technical trouble at the Master Station.

Enemy Defences.

24. Flak and Searchlights. Flak opposition was nowhere reported as severe. Over the target area several aircraft were engaged by flak after being coned by searchlights, but the general impression was that flak was of only moderate intensity, and confined to the lower height bands. Defences were in action at Amsterdam, Kiel, Bremen, Hanover and Ruzdeburg areas, all somewhat off track. Many searchlights were seen, but these appeared to co-operate more with fighters than with flak. Only 11 aircraft were hit by flak.

25. Fighters. 79 interceptions by enemy fighters, including 31 attacks, were reported. 23 of the attacks occurred within 100 miles of the target, 15 over the target itself. 3 of the other attacks were made by unidentified aircraft, probably intruders, over East Anglia. Intercepted wireless traffic, which was in the form of a running commentary to all fighters on the progress of the bomber stream, indicated that the enemy believed as early as 2238 hours, that Berlin might be the target, and at 2304 all fighters were ordered to proceed to Berlin. It has been suggested that the support attack by Mosquitoes 16 minutes before zero hour might have precipitated the order to proceed to that city; this, however, appears improbable since, owing to the superior speed of these aircraft, and to their more direct route, it is unlikely that they were nearer Berlin than the nearest heavy bomber at 2304 hours (when all fighters were directed to the city). In any case, they would not be ahead of the first heavy aircraft at 2238 hours, when the enemy first gave Berlin as the probable target. Wireless traffic also indicated that the rapid decrease in the number of interceptions towards the end of the attack was due to fog at enemy airfields.

Casualties.

26.	No. of aircraft missing	56 (7.7%)
	" " " damaged (flak 11)	. . . 45 (6.2%)
	(fighters 20)	
	(other causes 14)	

It was estimated that at least 33 aircraft were shot down by fighters, 9 of these occurred on the outward route, beginning with 2 over the Dutch coast, and 3 being in the region of the first track markers. It is probable that 20 or more were shot down in the target area, 3 on the homeward route, and one near Sweden. Flak probably brought down 12 aircraft, at Hanover, Bremen and Osnabruck on the outward route, 6 over the target, and at Rostock, Sylt and Hano on the return. Several coned aircraft which were engaged by flak over the target, were attacked by fighters at the same time, so that some of the aircraft reported as flak victims may have been shot down by fighters. It is believed that 2 bombers were lost in collision over the North Sea on the outward route, and that one came down into the sea on the return. In addition 2 aircraft, including one probable loss to fighters, came down in Sweden.

27. 2 aircraft collided over England on the return, one over-shot on landing and the other was burnt out after a take-off accident, all being destroyed. Other damage not due to enemy action was caused by a take-off accident, stresses set up during combat manoeuvres, engine failure, incendiary bombs (4 aircraft), British machine-gun fire (2) and a flock of birds.

.../inlaying.

Mine laying.

28. N.W. France. 24 mines were laid off Lorient and St. Nazaire by 12 Wellingtons which returned without incident.

29. Frisian Islands. 28 Wellingtons were despatched to the Frisian Islands. 40 mines were laid by 20 aircraft, 7 aircraft returning early since they were unable to get GEE fixes, and one because of poor visibility. All returned undamaged.

Leaflets

30. 92 and 93 Groups despatched 22 Wellingtons to drop leaflets in northern and central France, and 18 completed the mission. 3 turned back owing to technical defects and one was late. 3 aircraft were hit by flek, and 3 were intercepted by fighters, one being unsuccessfully attacked. No aircraft was lost.

EMO/LAS.
BC/S.26342/1/ORS.3.
23rd October, 1943.

BERLIN: MONFLYING: Leaflets:
23/24th. AUGUST, 1943.

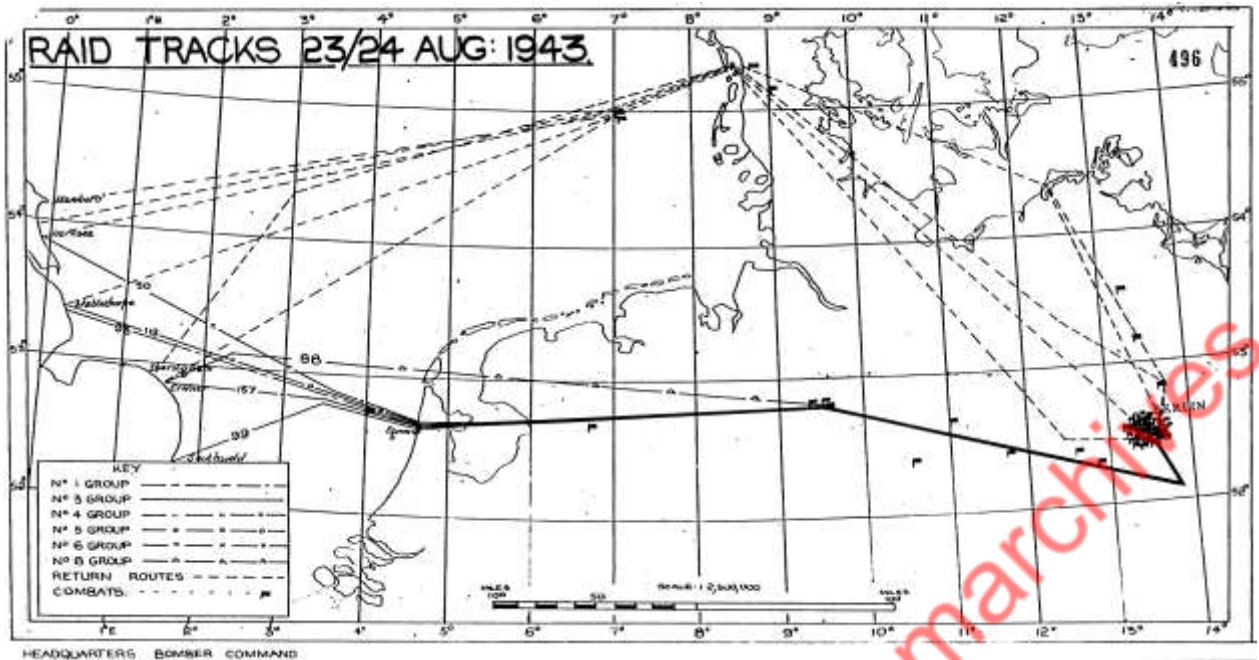
TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS		
				PRIM. AREL.	ALT. AREL.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLANE	FIGHTER	NOT R/A	ATTACK- ED	NOT ATTACK- ED	Tons Of Bombs H.E. Inc.		
BERLIN	8 FPF	Mosq. IX*	5*	5*	-	1*	1*	-	-	-	1	-	-	P. 872.3	767.0	
		Hal. IIIV	2	1	-	-	-	1	-	-	-	-	-	A. 16.7	23.2	
		Hal. Ia Lanc. III	21 66	15 59	-	1 1	2 1	3 4	1.0	1B+1.0C	-	5	2	5	M. 73.3	59.5
	8 MAIN FORCE	Mosq. IV	9	8	-	-	1	-	-	-	-	-	-	-	-	-
		Hal. IIIV	3	2	-	-	1	-	-	-	-	-	-	-	-	-
		Hal. Ia Lanc. I	8 1	2 1	-	-	4 -	2	-	-	-	-	-	-	-	-
		Lanc. III	16	10	-	-	1	1	-	-	-	-	-	-	-	-
	1	Lanc. I	20	16	-	-	2	2	-	-	-	-	-	1	-	-
		Lanc. III	67	77	-	-	4	6	3	1.0	1B	1	5	1	5	P. 287 A. 6 M. 18
	3	Stir. I	4	1	1	1	1	1	-	-	-	-	-	-	-	-
		Stir. III Lanc. II	120 13	84 8	8+2 ^o	-	12	16	2	1B+6.0C +3	2	13	6	-	-	-
	4	Hal. IIIV	86	72	-	-	11	3	2	1B+2	4B+1	3	3	3	-	-
		Hal. Ia	71	51	1	2	8	9	-	1.0C	-	2	1	1	-	-
	5	Lanc. I	24	22	-	-	1	1	-	-	1.0C	-	3	3	-	-
Lanc. III		100	90	4	1	3	2	2	1B+1.0C	1.0C+2	6	14	14	-	-	
6	Hal. IIIV	42	29	1	-	9	3	-	1.0C	1.0C	1	4	4	-	-	
	Hal. Ia Lanc. II	18 8	16 5	-	-	1 1	1 1	-	-	-	-	2	2	-	-	
BERLIN TOTAL			727	575	17+2 ^o	8	71	56	1.0C +10	2B+2B- 11.0C+ 5	4B+1B 2.0C+ 1.0C+6	31	48	-	-	

* Route markers.
o Also attacked primary.

BERLIN: MONFLYING: Leaflets:
23/24th. AUGUST, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREL.	ALT. AREL.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLANE	FIGHTER	NOT R/A	ATTACK- ED	NOT ATTACK- ED	
BOMBING TOTAL			727	575	17+2 ^o	8	71	56	1.0C+10	2B+2B- 11.0C+5	4B+1B 2.0C+1A +6	31	48	-
MONFLYING														
LORAIN	1	Well. X	6	6	-	-	-	-	-	-	-	-	-	12 mines
ST. N. LAURE	1	Well. X	6	6	-	-	-	-	-	-	-	-	-	12 mines
PRELLES	4	Well. X	16	15	-	-	1	-	-	-	-	-	-	30 mines
	5	Well. X	12	5	-	-	7	-	-	-	-	-	-	10 mines
MONFLYING TOTAL			40	32	-	-	8	-	-	-	-	-	-	64 mines
LE FLAYS														
AMERS	92	Well. X	1	1	-	-	-	-	-	-	-	-	-	-
ARRAS	92	Well. X	1	1	-	-	-	-	-	-	-	-	-	-
CHREUIL	92	Well. X	1	1	-	-	-	-	-	-	-	-	-	-
RENNES	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-
GRANVILLE	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	1
CHEBOURG	92	Well. III	1	1	-	-	-	-	1	-	-	-	-	1
ST. H. JO	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-
CAMBRI	92	Well. X	1	1	-	-	-	-	-	-	-	-	-	-
LE MANS	93	Well. X	2	2	-	-	-	-	-	-	-	-	1	-
CHARTRES	93	Well. III	1	1	-	-	-	-	-	-	-	-	-	-
		Well. X	1	1	-	-	-	-	-	-	-	-	-	-
ELMPS	93	Well. III	1	1	-	-	1	-	-	-	-	-	-	-
		Well. X	1	1	-	-	-	-	-	-	-	-	-	-
ORLEANS	93	Well. X	1	1	-	-	-	-	-	-	-	-	-	-
		Well. III	1	1	-	-	-	-	-	-	-	-	-	-
TONGES	93	Well. III	2	1	-	-	1	-	-	-	-	-	-	-
ARGENTAN	93	Well. X	2	1	-	-	1	-	1.0C	-	-	-	-	-
MOULINS	93	Well. III	2	1	-	-	1	-	1	-	-	-	-	-
LE FLAYS TOTAL			22	18	-	-	4	-	1.0C+2	-	-	1	2	-
TOTAL			749	593	17+2 ^o	8	75	56	1.0C+12	2B+2B- 11.0C+5	4B+1B 2.0C+1A +6	32	50	-

www.bombingcommandmuseumarchives.ca



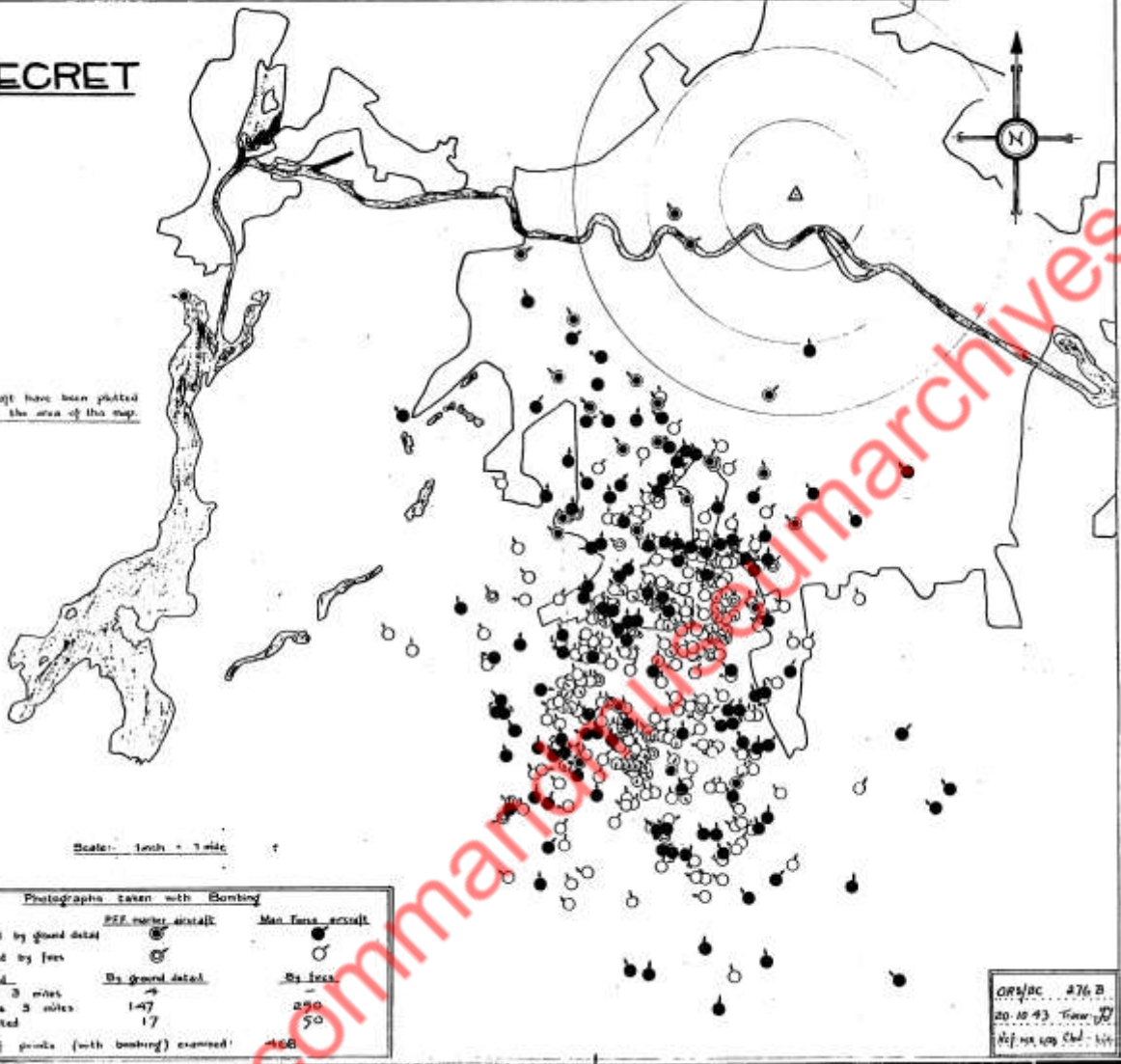
www.bombercommandmuseumarchives.ca

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 23/24 AUGUST 1943 TARGET: BERLIN

495

SECRET

✈ aircraft have been plotted
 outside the area of this map.



Scale: 1 inch = 1 mile

Photographs taken with Bombing		
	BFF night aircraft	Men-Tara aircraft
Plotted by ground detail	⊙	●
Plotted by jets	○	◊
Classified	By ground detail	By jets
within 3 miles	→	→
Outside 3 miles	147	290
Skipped	17	50
No. of prints (with bombing) examined:	126	

ORS/BC 476 B
 20. 10. 43. Form 57
 Ref. No. 100 541-114

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS

24/25TH AUGUST, 1943.

Berlin: Minelaying.

SUMMARY.

Berlin.

1. 8 P.P.F. Mosquitoes were detailed to follow up the heavy attack of the previous night; 7 attacked in the face of intense opposition. Many fires were still burning. The eighth bombed Essen. None were lost.

Minelaying.

2. 63 aircraft, out of a force of 66, laid 165 mines off the Frisians and the Dutch coast, and in the Heligoland Bight. All returned safely.

Weather Forecast.

3. Bases:- Probably fit all night. General visibility 2 miles or more till 0400, except in smoky localities N. of Humber. Diversions to Training Groups if required.

Germany:- Little cloud in centre and S. Residual convection cloud N. of 50°N., dissipating to small amounts by midnight.

N. Italy:- Fine.

France:- Local thundery activity over W. coast, with cloud base probably below 1,000' in N.W. Broken medium cloud in centre. Little cloud in E.

Holland-Heligoland:- Very well broken convection cloud, base 2,000'. Good visibility.

Wind at 20,000' to N. and Central Germany:- 230°/30 m.p.h.

Sorties.

Bombing.

Minelaying

4.	(a)	No. of a/c despatched	8	. . . . .	66
	(b)	" " " reaching primary area	7	. . . . .	63
	(c)	" " " attacking alternative area	1 ^M	. . . . .	0
	(d)	" " abortive sorties	0	. . . . .	3 ^M
	(e)	" " a/c missing	0	. . . . .	0
	(f)	" " mines laid . . . . .		. . . . .	165

^M engine trouble.

Weather Experienced.

5. Berlin:- 7/10ths. cumulus, tops 10,000'. Very hazy. Visibility poor.
 Frisians:- 0-3/10ths cloud, base 1,500'. Slight haze. Visibility good.
 Heligoland:- 4/10ths cloud, base 7,000'. Hazy. Visibility 2-3 miles
 Texel:- No cloud. Slight haze. Good visibility.

No moon.

..../Enemy Defences.

Enemy Defences.

6. Mosquitoes encountered active opposition from the Berlin defences. Many searchlights were operating in large cones with moderately accurate predicted heavy flak. 3 aircraft were slightly damaged. Enemy fighters were up in some strength, but when it became evident that no large-scale raid was in progress, they were ordered to the Ruhr for practice in searchlight co-operation.

7. Minelayers were engaged by flak from a number of coastal points, and 2 aircraft sustained slight damage over the Frisians. A Wellington was attacked by an unidentified twin-engined fighter 25 miles N. of Borkum Island, but escaped undamaged.

Casualties.

8. All our aircraft returned safely from all targets, 5 with minor damage by flak.

MLM/IAS
EC/S.26342/2/ORS.
29th October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT F/A	ATTACKED	NOT ATTACKED	Tons of Bombs H.E. Inc.
BERLIN	8 PFF	Mosq. IV	8	7	1	-	-	1	3	-	-	-	-	P. 5.2
WINDLIVING	1	Well. X	27	26	-	-	1	-	1	-	-	-	-	52 mines
FRISIANS	3	Stur. III	9	3	-	-	-	-	-	-	-	-	-	59 mines
	4	Lanc. II	2	1	-	-	1	-	-	-	-	-	-	
	4	Well. X	8	8	-	-	-	-	1	-	-	1	-	16 mines
HELDOLFD	4	Well. X	8	7	-	-	1	-	-	-	-	-	-	14 mines
S. OF TRIN	6	Well. X	9	9	-	-	-	-	-	-	-	-	-	18 mines
TEXEL	6	Well. X	3	3	-	-	-	-	-	-	-	-	-	6 mines
MINELAYING TOTAL			66	63	-	-	3	-	2	-	-	1	-	165 mines
TOTAL			74	70	1	-	3	-	5	-	-	1	-	

COPY NO. 16

BOMBER COMMAND REPORT ON NIGHT OPERATIONS,25/26TH AUGUST, 1943.Berlin: Mine-laying: Leaflets.SUMMARY.Berlin.

5 P.P.F. Mosquitoes carried out another harassing raid on Berlin; a sixth bombed Bremen for technical reasons. The embers of fires still burning from the heavy attack delivered 2 nights earlier could be seen in the German capital. All the Mosquitoes returned safely, although 2 were slightly damaged by flak.

Mine-laying.

36 Stirlings and Wellingtons laid 99 mines off the French Atlantic coast, in difficult weather conditions. 6 others returned early. None were lost or damaged.

Leaflets.

5 Wellingtons from Training Groups dispersed leaflets over towns in N. France. One aircraft returned early and one was lost without trace.

Weather Forecast.

Midnight frontal positions:- (1) occlusion from Shetland to 55°N.07°E. to 50°N.10½°E. (2) cold from 55°N.07°E. to 50°N.05°E. to 45°N. 01½°W.

Bases:- Mainly fit all night. Local showers N. of Wash. Visibility deteriorating towards dawn.

Germany:- Thundery cloud in frontal belt, tops above 20,000'. Broken medium and low cloud E. of front, dispersing to small amounts E. of 12°E.

N. Italy:- Residual convection cloud. Local thunderstorms over Alps.

France:- Broken convection cloud in N.W., with showers and good visibility. Cloud will break and lift in N.E., behind cold front. Local thunderstorms in S. coast: cloud base 2,000', falling temporarily to 1,000-1,500' in showers N. of 3°N. Good visibility.

<u>Sorties.</u>	<u>Berlin</u>	<u>Mine-laying.</u>	<u>Leaflets.</u>
(a) No. of a/c despatched	6	42	7
(b) " " " reaching primary area	5	36	5
(c) " " " attacking alternative area 1	1	0	0
(d) " " abortive sorties	0	6 (crew (tech.defect .1) failure)	1
(e) " " a/c missing	0	0	1
(f) " " mines laid . . . . .	. . . . .	99	

.../Weather Experienced

Weather Experienced.

6. Berlin:- Clear. Good visibility. No moon.

W. France:- 6-8/10ths cloud at Brest, decreasing to nil south of Lorient. Visibility good. 10/10ths cumulo-nimbus over Channel, base 700', tops above 10,000' with severe icing. No moon.

Enemy Defences.

7. The Mosquitoes attacking Berlin met intense accurate and predicted heavy flak, co-operating with 100 searchlights working in 3 cones. Enemy fighters were active, and 3 were encountered over W. France, but no claims were made. 2 Mosquitoes suffered flak damage.

Casualties.

8. One Wellington of 91 Group, detailed to drop leaflets over Montargis, was missing without trace. All other aircraft returned undamaged.

MM/IAS.
EC/S.26342/2/ORS.
29th October, 1943.

25/26th OCTOBER, 1943.

TARGET	GROUP	TYPE	SORTIES	✓/C REPORTING ATTACK ON		BORTIVE SORTIES		MISSED	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A.	ATTACKED	NOT ATTACKED	Tons of Bombs H.E.
BERLIN	8 PFF	Mosq-IV	6	5	1	-	-	-	2	-	-	-	-	P. 3.6 A. 0.8
UNDEVELOPING BREST	1	Well.X	12	8	-	-	3	-	-	-	-	-	-	18 mines
CISRONDE	3	Strif.I	1	1	-	-	-	-	-	-	-	-	-	29 mines
LA. PALLICH	3	Strif.III	8	8	-	-	-	-	-	-	-	-	1	32 mines
LORIENT	6	Well.X	6	6	-	-	-	-	-	-	-	-	-	12 mines
ST. N. Z. J. M.	6	Well.X	7	4	-	-	3	-	-	-	-	-	2	8 mines
MONTEVING TOTAL			42	36	-	-	6	-	-	-	-	-	3	99 mines
LEAFLETS														
PONT. INN. BLEAU	91	Well.X	1	1	-	-	-	-	-	-	-	-	-	
BERLIN	91	Well.III	1	1	-	-	-	-	-	-	-	-	-	
CH. VEAUDIN	91	Well.III	1	1	-	-	-	-	-	-	-	-	-	
ST. P. S.	91	Well.III	1	1	-	-	-	-	-	-	-	-	-	
BE. V. V. S.	91	Well.X	1	1	-	-	-	-	-	-	-	-	-	
ST. MALO	91	Well.III	1	-	-	-	1	-	-	-	-	-	-	
MONTARGIS	91	Well.III	1	-	-	-	-	1	-	-	-	-	-	
LEAFLET TOTAL			7	5	-	-	1	1	-	-	-	-	-	
TOTAL			55	46	1	-	7	1	2	-	-	-	3	

BOMBER COMMAND REPORT ON NIGHT OPERATIONS,

26/27TH AUGUST, 1943.

Mine-laying: Leaflets.SUMMARY.Mine-laying.

1. 29 aircraft laid 72 mines off the French Atlantic coast. 3 other aircraft returned early. None were lost or damaged.

Leaflets.

2. 1 Wellington was detailed to disperse leaflets over St. Malo, but had to abandon its task owing to the inexperience of the navigator.

Weather Forecast.

3. Midnight frontal positions:- A development of a low pressure centre over the Channel and N. France makes the situation unusually complex, but the approximate positions of fronts at midnight are estimated as follows: (1) $61^{\circ}\text{N. } 05^{\circ}\text{E.}$ to $55^{\circ}\text{N. } 16^{\circ}\text{E.}$ to Breslau. (2) $54^{\circ}\text{N. } 02\frac{1}{2}^{\circ}\text{E.}$ Cologne to Lyons, with another centre of low pressure situated over the North Sea.

Bases:- Variable amounts of cloud with fog developing locally late in night. Well broken cumulus and strato-cumulus at dusk, base 2,000', tops locally above 15,000', dispersing to small amounts by midnight. Visibility 2 miles until 04.00 hours.

Germany:- Area of rain and low cloud over S. North Sea, Low Countries and N. Germany, tops to 20,000'. Between 10°E. and 15°E. , residual convection cloud with breaks. Belt of thunderstorms near front 1. Much cloud in W., with low base and high tops.

N. Italy:- Broken medium cloud. Convection cloud over Alps.

France:- Variable cumulus and strato-cumulus, tops 10-15,000', over Channel and Bay of Biscay. Visibility good, except in local showers.

<u>Sorties.</u>	<u>Mine-</u> <u>laying.</u>	<u>Leaf-</u> <u>lets.</u>
4. (a) No. of a/o despatched	32	1
(b) " " " reaching primary area	29	0
(c) " " abortive sorties (tech. defect. 2) (weather . . . 1)	3 (nav. error)	1
(d) " " aircraft missing	0	0
(e) " " mines laid	72	

Weather Experienced.

5. W. France:- Variable amounts of cumulus, 0-10/10ths. Visibility poor at Brest and Gironde, good at Lorient and St. Nazaire. No moon.

..../Enemy Defences.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS27/28th. AUGUST, 1943.NUREMBURG: Duisburg: Minelaying: Leaflets.NUREMBURG

674 heavies were sent to Nuremberg, and found the target clear of cloud; but the backers-up bombed short of the blind-markers' well placed T.I., and initiated a creep-back which drew the weight of the attack outside the built-up area. However, considerable damage was caused in the E. of the town, and a number of priority factories were hit. 33 bombers were lost; the scatter of returning aircraft considerably reduced the efficiency of WINDOW, and enabled individual aircraft to be selected as targets for the enemy's controlled fighters.

Duisburg

3 Mosquitoes carried out a harassing raid against Duisburg. A fourth had to abandon its mission. All returned undamaged.

Minelaying

41 Wellingtons and Stirlings, out of a force of 47, laid 40 mins off the Frisians and 54 off the French Atlantic coast. One Wellington was lost.

Leaflets

9 Wellingtons and Whitleys dispersed leaflets over towns in Northern France; tenth returned early. None were lost.

Weather Forecast

Bases:- Mainly fit at dusk, with isolated showers and cloud 6-9/10ths, tops 12,000' rising locally to 15,000'. For return from S. Germany, 50% of bases 1, 4, 5 and 6 Groups will have visibility of 1,500 yards; 3, 8 and N. of 6 Group should keep 2 miles. Rain will spread from the E., reaching a line Portland - Ross-on-Wye - W. of Isle of Man by 0500 hours. Diversions S. of Wash in Training Groups.

Germany:- Thundery convection cloud will persist all night in N.W., lowering to great heights, with local thunderstorms in extreme N. Possible clearance in Berlin area, but much cloud may remain; better prospects in S. and E.

Nuremberg (1630 hours): Very good chance of only small amounts, but patches of 4-6/10ths may drift over at medium levels below 14,000'. Visibility moderate to good. Route (through Abbeville): Small amounts of residual cloud at various levels between 8,000' and 14,000'. Any tops above 12,000' will be isolated. Ruhr: some clearances in convection cloud, tops 15-20,000'. Cologne: 4-8/10ths. to 20,000', good visibility.

N. Italy: Local thunderstorms.

W. France: Varying amounts of strato-cumulus, base 1,500-2,000'. Visibility moderate.

Frisians: 4-7/10ths. cumulus, base 1,500'-2,000'. Visibility moderate to good.

...../winds to Nuremberg:

Winds to Nuremburg:	750 mbs.	500mbs.	300mbs.
Bases to 03°E.	300°/25 m.p.h.	300°/35-40m.p.h.	300°/60 m.p.h.
03-08°E.	280°/25-30m.p.h.	280°/45 m.p.h.	280°/70 m.p.h.
08°E.-Nuremburg.	260°/30 m.p.h.	250°/50 m.p.h.	250°/75 m.p.h.

NUREMBURGPlan of Attack

6. Route Beachy Head - 5005N/0125E - 4915N/0825E - 4900N/1100E - TARGET - 4940N/1050E - 5005N/0125E - Beachy Head.

7. Route Marking

- (a) T.I. Red at 4925N/0703E (13 miles 015° Saarbrucken) by 6 Blind Markers, 3 Visual markers, 12 Backers-up and 2 Recentrers.
- (b) Red Spot Fires at 4942N/0955E (6 miles 180° Wurzburg) by the same aircraft.

8. Marking Technique

- (a) Blind Markers were to mark the aiming point with T.I. red and flares.
- (b) Visual Markers were to identify the marshalling yards on the western side of the town, then to proceed on a track of 095T at 198 knots. True A.S. for 15 sec. (Lanc.) or 16 sec. (Hal.) after the yards appeared in the bomb sights, before releasing T.I. yellow and T.I. green in salvo.

If the yards were not identified the Visual Markers were to revert to the role of Backers-up, aiming green T.I. only at the centre of red T.I. (with an overshoot of 2 secs), and bringing back yellow T.I.

- (c) Backers-up to aim T.I. green at:-
- (i) T.I. yellow with no overshoot.
 - (ii) centre of T.I. green with 1 sec. overshoot.
 - (iii) centre of T.I. red with 2 sec. overshoot.
- (d) Recentrers were to aim T.I. green by means of their special equipment if serviceable. If not they were to act as normal backera-up.
- (e) Main force aircraft to aim at centre of green with one sec. overshoot or as directed by the Master Bomber.
- (f) All qualified Y crews were to carry 1 flare red with green stars to be used if cloud conditions made it necessary.

9. Timing Zero hour: 0030 hours. T.O.T.: 0026 - 0111 hours.

Blind Markers

20 a/c at (Z-4)

Visual Markers

8 a/c at (Z-3)

Recentrers

20 a/c (Z+10)-(Z+37)
 @ 2 a/c every 3 mins.

Main Force

P.F.F. (Z-4) 31 a/c.

1st. Wave	(Z+2) - (Z+8)	89 Lanc.
2nd. Wave	(Z+8) - (Z+15)	101 Hal.
3rd. Wave	(Z+15) - (Z+22)	109 Stir.
4th. Wave	(Z+22) - (Z+28)	89 Lanc.
5th. Wave	(Z+28) - (Z+35)	99 Hal.
6th. Wave	(Z+35) - (Z+41)	81 Lanc.
		<u>599 a/c.</u>

...../Backers-up.

Backers-up

6 a/c at (Z)
 2 a/c at (Z + 1)
 26 a/c at (Z + 2) - (Z + 36)
 @ 1 a/c per min. except at
 times of recenterers.

10. Markers to be carried

Blind Markers 4 Hal + 2 Lanc: (4x4 flares white) + 3 T.I. red LB +
 2 T.I. red + 1 T.I. Red Spot.

14 Lanc: (4x4 flares white) + 2 T.I. red LB. + 2 T.I. red.

Visual Markers 2 Hal. + 1 Lanc: 2 T.I. yellow LB. + 2 T.I. yellow + 1 T.I.
 red LB. + 1 T.I. Red Spot + 1 T.I. green.

5 Lanc: 2 T.I. yellow LB. + 2 T.I. yellow + 1 T.I. green.

Recenterers & Backers-up

12 Hal + 28 Lanc: 2 T.I. green LB. + 2 T.I. green.

14 Lanc: 2 T.I. green LB. + 2 T.I. green + 1 T.I. Red
 Spot + 1 T.I. red LB.

N.B: (i) In addition 11 Y-aircraft to carry 1 flare red/green stars.
 (ii) T.I. green were to cascade from 3,000ft., 6000ft. and 10,000ft.

11. Tactics

WINDOW To be discharged at the rate of one bundle per minute. from
 0300E - 0540E, 0700E - 0950E, within a 20 mile radius of the target, and from
 0925E-0712E and 0545E-0330E.

Master Bomber

A Master Bomber and a deputy would be available over the target area
 until (Z + 17).

Concentration 1, 4, 5 and 6 Groups were warned to avoid violent weaving
 and evasive action, which lowers the concentration and increases the risk of
 collision.

P.F.P. Blind Markers, Visual Markers, and Non/Markers were to orbit for
 2 mins. 1 mile after passing the Red Spot Markers en route home, in order to
 increase the concentration.

12. Special Equipment

To test their equipment all qualified Y-aircraft were to drop one small
 bomb (500 or 1000 H.C.) on Heilbronn en route to the primary.

Sorties

3. (a) No. of aircraft despatched.....674
 (b) " " " reporting attack on primary area.....588(87.3%)
 (c) " " " " " alternative area..... 7+(1.0%)
 (d) " " abortive sorties (technical defect or
 manipulative error.....40)
 (sickness of crew..... 4)..... 46 (6.8%)
 (collided with a/c..... 2)
 (e) " " aircraft missing..... 33 (4.9%)

(+ plus 2 aircraft which also attacked the primary.)

...../Weather Experienced

Weather Experienced

14. Bases:- Showers in Midlands at take-off; cloud dispersed rapidly. Visibility generally moderate, with mist in S. of 4 Group by 0500. Slight rain from W. reached a line Manchester -Boscombe Down, by 0500, with considerable medium and high strato-cumulus in E.

Route:- 7-10/10th. cumulus, tops 10-12,000', over Channel, thence patches of cloud with isolated tops to 12,000'.

Nuremburg:- 0-2/10ths. cloud below aircraft. No moon. Good visibility.

Wind at 18,000': 300°/30 n.p.h. (250°/30 n.p.h. also reported)

Surface wind: W.S.W. 10-15 n.p.h.

Night Photographic Statistics

15.	No. of photographs examined.....	533
"	" " " showing ground detail	{ plotted within 3 mls...69 " outside 3 mls...123 }.....240 (unplotted..... 48)
"	" " " " fire-tracks	{ plotted within 3 mls...63 " outside 3 mls...156 }.....293 (unplotted..... 74)
"	" " aircraft reporting attack.....	588
"	" " " estimated to have bombed within 3 miles of the aiming-point.....	160

Narrative of Attack

16. 10 of the 12 blind-markers which opened the attack have been plotted, nearly all to the E. or E.N.E. of the aiming-point, with the M.P.I. 1½ miles due east; none were more than 3 miles out. The flare illumination on the W. of the town was consequently insufficient to enable the visual markers to identify the marshalling yards, and the raid developed as a blind bombing attack.

17. The early backers-up unfortunately tended to bomb E. of the M.P.I. of the blind-markers' reads, so that the main force started well away from the built-up area. After zero + 5, many aircraft were plotted as much as 5-8 miles E., although no T.I. were photographed in this area until zero + 11. It is possible that short-burning decoys may have been active in this region, drawing the attack away from the town centre. It is clear from the plot of night photographs that the planned line of approach was not adhered to and that most aircraft approached from the S.E. (i.e. up-wind) instead of from the S.S.W.

18. After zero + 15, the attack drifted steadily downwind to a point about 8 miles S.E. of the target. This drift was almost certainly due to cumulative undershooting by the backers-up, 4 of whom were plotted from 2-8 miles S.E.; and possibly also to enemy T.I. This might have been prevented if enough of the recenterers had been fitted with H23; of the 5 whose sets did work, 2 were plotted in the original area marked by the blind-markers.

19. This attack resembles the raid on Nuremburg of 10/14th. August, in that on both occasions the visual markers could not operate according to plan, and the Y-aircraft opening the attacks dropped their T.I. to the E. of the town. But whereas on the earlier raid the approach was from the N.W., so that the bombing moved back across the N.E. of the town causing considerable damage, on the 27/28th the force came up from the S.E. and the attack drifted back to the E. and S.E., with the result that the town escaped serious destruction.

20. The 27/28th. was the first occasion since the introduction of recenterers (on the 24/25th. July) on which there was any extensive backward creep from the target, and it is significant that on this night, owing to H23 failures, only 5 of the 20 recenterers functioned. Even these 5 might have effectively kept the attack

...../in position had they

in position had they dropped T.I. of a distinctive colour. A Master Bomber was employed, but could do little owing to the difficulty of visual identification once the initial flare illumination was over.

Day Reconnaissance

21. The results of the heavy raid of 10/11th. August were only approximately given in Immediate Interpretation Report No. K.1665. Photographs taken on 2nd. September enabled a detailed estimate of the total damage caused in the two raids to be undertaken.

22. The heaviest devastation occurred in the districts of Wöhrd, Garten Bei Wöhrd Rennweg, and others to the N.W. Industrial damage was on a considerable scale, involving 5 priority targets, 28 identified and 29 unidentified factories. Most of these were metal working and munitions works, and many suffered severely. The main building and a subsidiary building of the main railway station, as well as the goods depots at the North, South and East stations and other railway property, were effectively hit. Serious damage was caused to the town electricity supply offices, the transformer for current from the power station at Gebersdorf and the main post office. Several military establishments in or near the town were hit, including 3 hutted camps, and the local airfield. Important public buildings were damaged, notably the Gauleiter Palais; and business and residential property suffered heavily in the district of Wöhrd.

Alternative Targets

23. 7 aircraft bombed alternative targets, in the areas of Mannheim, Kaiserslautern, Karlsruhe, Albert, Amiens and Le Treport (2). 2 other aircraft, which had previously attacked the primary, dropped part of their loads near Soberheim and St. Quentin. 19 of the 47 P.F.P. aircraft detailed to drop one small H.E. bomb on Heilbronn en route to test their H2S equipment did not do so for various reasons, but released their entire loads on Nuremberg.

Special Equipment

24. H2S 89 Y-aircraft were despatched; 19 blind markers, 20 reentrers and 50 main force aircraft. 18 blind markers attacked, but only 13 on H2S; and one of these dropped no T.I. owing to a hang-up. The other 5 dropped H.E. only. 8 reentrers attacked, but the serviceability of their H2S was low and only 5 released markers. 9 of the remainder joined the backscattered and 4 dropped H.E. only. 38 of the main force aircraft reached the target with their sets in order; they carried H2S for navigational purposes, and only one used it to check his position at bombing. 2 Y-aircraft were lost.

25. GEE The Eastern Chain operated on the Wyoming frequency throughout and on the Maryland frequency from 2300 to 0300 hours. Average ranges of 320 and 240 miles were obtained, the maximum range being 457 miles. Heavy jamming on the Wyoming frequency north of Paris decreased in intensity further east. There was no jamming on the Maryland frequency until the return trip. Interference was mainly noise and spurious pulses. Complete sets of signals seen on the Maryland frequency over the Channel, when Maryland was not operating, were believed to be from the South Western Chain.

Defences

26. Flak and Searchlights The first arrivals over the target met a fairly light barrage to a height of 22,000'; but when the attack opened, the ceiling of fire fell to 18,000' and the intensity slackened, presumably owing to the presence of fighters in the target area. 30-40 searchlights were active, coning aircraft for the guns and fighters; sometimes the guns ceased firing at a coned bomber when a fighter fired a signal of red stars. Outside the target area, searchlights were active at Frankfurt, Mannheim, Darmstadt and Saarbrücken, mostly co-operating with flak. 30 aircraft were damaged.

27. Fighters Both G.C.I. control and a running commentary were heard on this night. Vectoring of individual fighters occurred only on the westerly part
...../ of the route, mostly

of the route, mostly from the areas of Charleroi/Nezieres, Charleroi/Trier, St. Quentin/Rheims, Courtrai/Namur and E. of Namur (H/P); and Laon/Cambrai, Laon/St. Quentin, Deelen/Venlo and St. Trond/Scoesterberg (VH/F). The running commentary opened at 2336 with a warning that the bombers were approaching Darstadt (which lay well N. of the route), announced the dropping of the first bombs on Nuremberg, and at 0033, one minute after the main force should have begun to bomb, ordered all fighters to the latter town. They were apparently to orbit a searchlight beam and wait for the invading force. The route from the target was detailed at 0057. Jamming of the running commentary was attempted with TDSKL, achieving, it is believed, some success.

28. 113 interceptions were reported, including 32 attacks and 49 other contacts. Half of this unusually large number of attacks were made on the homeward route, when the scatter of the returning force resulted in an inadequate WINDOW cover. This was aggravated by the omission of 4 Group to drop WINDOW in one area. 12 encounters also took place over the target. Single-engine fighters, especially PW.190's were most active on the return route between the target and the route-markers, and near the French coast. Yellow flares, bursting at the height of bombers, were used to illuminate them for the fighters, and red flares were fired from aircraft to guide fighters to the bomber stream. 9 aircraft sustained fighter damage.

Casualties

29. No. of aircraft missing.....33 (4.9%)
 " " " damaged..(flak.....30)
 (fighter.....9).....56 (8.3%)
 (non-enemy action...17)

Crews' reports and intercepted wireless traffic suggest that losses occurred as follows:-

- (i) outward route 4 to fighters, including 2 just W. of the WINDOW area near St. Quentin, probably to controlled fighters. 1 to flak over Karlsruhe.
- (ii) target area 10 losses, probably 5 or 6 to fighters. 2 bombers were observed to collide.
- (iii) homeward route 8 to fighter, including 2 more near St. Quentin. 5 to flak, mainly to defended areas off route, e.g. Mainz, Frankfurt and Mannheim.

Lack of concentration on the return route undoubtedly assisted the vector of controlled fighters.

DUISBURG

30. 4 P.P.F. Mosquitoes left on a harassing raid against Duisburg. 3 attacked the city on D.R. runs from GEE fixes, above 9/10ths low cloud. The fourth aircraft experienced a complete failure of its V.F.P. equipment while circling its base and abandoned its mission. One fighter was observed, but no combat resulted; and all our aircraft returned unamaged.

MINELAYING

31. 47 Wellingtons and Stirlings were despatched on a mining operation off the W. coast of France and the Frisians. 41 reached their targets and 94 mines were laid. 5 sorties were abortive for technical reasons, and one because of heavy cloud obscuring the target. 10/10ths. strato-cumulus covered the W. coast of France, base 2,500' and tops 15,000', only breaking in the extreme S., where visibility was good. Aircraft detailed for the Frisians found well broken cumulus, not more than 6/10ths., over the islands. One Wellington did not return from Lorient; there is no evidence of the cause. All the rest returned undamaged.

LEAFLETS

32. 9 Wellingtons and Whitleys from 91 and 93 Groups dispersed leaflets over towns of Blois, St.Malo,Rennes,Granville and Cherbourg. A tenth returned early on engine trouble. No losses or casualties were sustained.

MJH/JT
 BC/S. 26342/2/ORS3,
 22nd. October, 1943.

27/28th. JULY, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS			
				PRIM. AREA.	ALT. AREA.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/L.	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E. Inc.		
NUREMBERG & HEILBRONN	B PFF	Hal. II	1	-	1	-	-	-	-	-	-	-	-	-	P. 852.2	542.6	
		Hal. IA	10	9	-	(5)*	1	-	2	1	1	1	2	-	M. 7.4	6.4	
NUREMBERG	B PFF	Lanc. III	36	34	1 ^o	-	-	2	3	1	1	3	2	-	M. 31.7	46.5	
		Hal. IA	7	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	MAIN FORCE	Lanc. I	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
		Lanc. III	21	18	1	-	-	1	-	-	-	-	-	-	-	-	-
	1	Lanc. I	20	17	-	-	-	-	1	-	-	1	1	7	-	-	-
		Lanc. III	85	79	-	-	-	5	1	-	-	1	1	7	-	-	-
	3	Stir. I	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-
		Stir. III	102	86	-	1	4	11	1	1	1	1	5	6	-	-	-
	4	Lanc. II	10	7	-	-	2	1	-	-	-	-	-	1	-	-	-
		Hal. IIAV	79	62	4	-	8	5	1	1	1	2	5	10	-	-	-
	5	Hal. IA	60	49	1	-	6	4	3	-	-	1	1	5	-	-	-
		Lanc. I	24	23	-	-	1	-	-	-	-	1	2	5	-	-	-
6	Lanc. III	116	109	1 ^o	-	3	4	1	1	1	1	8	26	-	-	-	
	Hal. IIAV	36	30	-	-	5	1	1	1	1	1	5	5	-	-	-	
	Hal. IA	19	17	-	-	1	1	1	1	1	1	1	2	-	-	-	
11	Hal. IA	11	10	-	-	1	-	-	3	-	-	-	1	-	-	-	
	Hal. II	11	10	-	-	1	-	-	3	-	-	-	1	-	-	-	
NUREMBERG TOTAL			674	588	7+2 ^o	4	42	33	18+2	6	18+3	32	80	-	-	-	
DUISBURG	B PFF	Mosq. IV	4	3	-	-	1	-	-	-	-	-	1	-	-	P. 2.0 tons	
BOOMBING TOTAL			678	591	7+2 ^o	4	43	33	18+2	6	18+3	32	81	-	-	-	

* Also hit by flak. Also attacked Primary.

* These 19 a/e did not attack Heilbronn for various reasons but attacked Nuremberg: not counted as abortive in total.

...../Contd

506

NUREMBERG: LUFTUNG: 44th. VFG: Leaflets: 27/28th. JULY, 1943.

(Contd.)

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS		
				PRIM. AREA.	ALT. AREA.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/L.	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E. Inc.	
BOOMBING TOTAL			678	591	7+2 ^o	4	43	33	18+2	6	18+3	32	81	-	-	-
MINDELING	1	Well. X	9	8	-	-	1	-	-	-	-	-	-	-	-	16 mines
LORIENT	1	Well. X	9	7	-	-	1	1	-	-	-	-	-	-	-	14 mines
PRISANS	3	Stir. III	3	3	-	-	-	-	-	-	-	-	-	-	-	18 mines
LA PALICE	6	Well. X	12	11	-	-	1	-	-	-	-	-	-	-	-	22 mines
	4	Well. X	14	12	-	-	2	-	-	-	-	-	-	-	-	24 mines
MINDELING TOTAL			47	41	-	-	5	1	-	-	-	-	-	-	-	94 mines
LEAPLET	91	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-	-
BLON	91	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-	-
ST. HLO	93	Well. X	1	1	-	-	-	-	-	-	-	-	-	-	-	-
REES	93	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-	-
	93	Well. X	1	1	-	-	-	-	-	-	-	-	-	-	-	-
GRANVILLE	93	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-	-
	93	Well. X	1	1	-	-	-	-	-	-	-	-	-	-	-	-
CHERBOURG	93	Wh. V	3	2	-	-	1	-	-	-	-	-	-	-	-	-
LEAPLET TOTAL			10	9	-	-	1	-	-	-	-	-	-	-	-	-
TOTAL			735	641	7+2 ^o	4	49	34	18+2	6	18+3	32	81	-	-	-

Also attacked Primary.

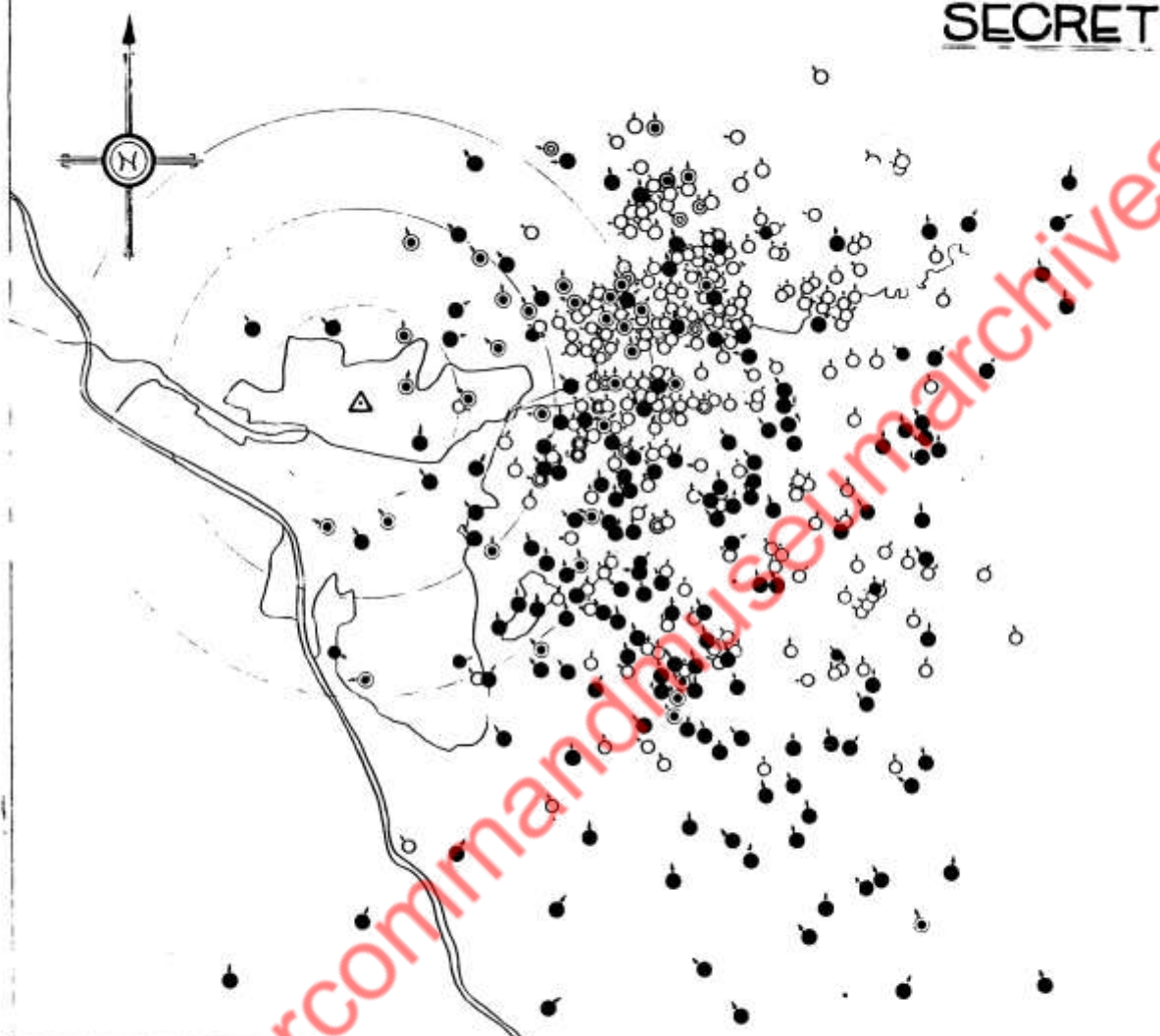
RAID TRACK NOT AVAILABLE

www.bombing.com/museum/raids.ca

FINAL PLOT OF NIGHT PHOTOGRAPHS 507

TAKEN 27/28 AUGUST 1943. TARGET: NURNBERG

SECRET



Photographs taken with Bombing

	DEF marker aircraft	Main force aircraft
Plotted by ground detail	●	○
Plotted by fires	○	○
Plotted	By ground detail	By fires
Within 3 miles	69	63
Outside 3 miles	123	156
Unplotted	48	74
Total plots (with bombing) contained		533

Scale - 1 inch = 1 mile

OR5/BU 477B
20/1/43
4/1/43

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS,29/30TH AUGUST, 1943.Cologne: DuisburgSUMMARY.

1. 8 P.P.F. Mosquitoes were sent to harass Cologne and Duisburg. All 4 attacked the former target, but only 2 reached Duisburg; one had to turn back because of bad weather, and one was lost to unknown causes.

Weather Forecast.

2. Bases:- The positions of a cold and a warm front affecting operational areas tonight are uncertain. The cold front should clear East Anglia by midnight, but may give general trouble at dusk. By about 0200 hours, warm front will affect bases, with 10/10ths cloud at 1,000' above mean sea level and local drizzle or light rain. These conditions will persist all night.

Germany:- Much thick medium cloud over S. North Sea, with tops to 20,000'. Large amounts of strato-cumulus, tops 5,000', over whole of Germany.

N. Italy:- Little or no cloud. Much layer cloud over Alps, but peaks clear.

France:- Cold front is unlikely to clear the Brest area much before dawn, so that low cloud will persist N. of Nantes. Further S., conditions may be good, with broken strato-cumulus at 1,500' or above, tops 4,000'. Cloud base very low in W. Channel.

Sorties.

	<u>Cologne.</u>	<u>Duisburg.</u>
3.		
(a) No. of a/c despatched	4	4
(b) " " " reaching primary area	4	2
(c) " " abortive sorties	0 .. (weather)	1
(d) " " a/c missing	0	1

Weather Experienced.

4. W. Germany:- 10/10ths stratus, tops 26,000'. Cirrus above, Good visibility.

Enemy Defences.

5. Very slight and inaccurate flak was reported. Searchlights could not penetrate the cloud. No fighters were in evidence.

Casualties.

6. One Mosquito on Duisburg was missing without trace. The enemy made no claim on this night, and the loss must be ascribed to "causes unknown." No other casualties were sustained.

HLM/L.S.

BC/S.26342/2/ORS.3.

30th October, 1943.

COLOGNE: DUISBURG:
29/30th. AUGUST, 1943.

D. UNIT	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A	ATTACK- ED	NOT ATTACK- ED	Persons of Honor	H. E.
COLOGNE	B IFF	Mosq. IV	4	4	-	-	-	-	-	-	-	-	-	P.	3.1
DUISBURG	B IFF	Mosq. IV	4	2	-	-	1	1	-	-	-	-	-	P.	1.6
TOTAL			8	6	-	-	1	1	-	-	-	-	-		

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS.

30/31ST AUGUST, 1943.

MUNCHEN-GLADBACH: Duisburg: Forêt d'Eperleques

Mine-laying.

SUMMARY.

MUNCHEN-GLADBACH.

1. The twin towns of Munchen-Gladbach and Rheydt, 35 miles W. of Dusseldorf, were successfully attacked by 589 aircraft. The target was covered with 7-9/10ths thin cloud, but this broke at times to 2-4/10ths, enabling the T.I. of the OBOE ground-markers to be clearly seen through the gaps. More than 50% of the built-up centre of each town was devastated, and no less than 144 factories were damaged, as well as much railway property. 25 aircraft were lost, and 6 others crashed over England.

Duisburg.

2. 9 Mosquitoes carried out a harassing raid on Duisburg; 2 others returned early and one was lost without trace.

Forêt d'Eperleques.

3. 12 Pathfinders and 33 Wellingtons from Training Groups were detailed to attack an ammunition dump in the Forêt d'Eperleques, near St. Omer. The bombing was accurate, but hampered by the failure of 3 of the 6 Mosquitoes. Large white explosions were reported by returning crews. One Wellington was lost.

Mine-laying.

4. 9 Stirlings laid 51 mines off the Frisians without loss.

Weather Forecast.

5. Midnight frontal positions:- cold front E. of Stottin to Nuremberg to Stuttgart to Linoges.

Basos:- Cloud dispersing to small amounts by dusk. Good visibility.

Germany:- N. of 53-54°N.: much convection cloud, tops to 15,000' or above. Belt of medium cloud to 50-100 miles W. of front. Good breaks in layer and convection cloud in Ruhr area. Good visibility. Munchen-Gladbach (forecast at 2115 hours): cloud amounts uncertain, good chance of 5/10ths or less, little risk of 10/10ths. Late attack preferable. Small amounts of cloud over North Sea, average tops 6-7,000'.

Winds:-	<u>750 mb.</u>	<u>500 mb.</u>	<u>300 mb.</u>
Basos - 04° E	310°/35 m.p.h.	320°/75-80 m.p.h.	320°/110 m.p.h.
04° E - Ruhr	290°/50 "	290°/75 "	290°/110 "

MUNCHEN-GLADBACH.

Plan of Attack.

Route. East Coast - 5210.N/0240.E - Knocko - 5110.N/0430.E - Target - Turn
side left - 5135.N/0340.E - 5210.N/0240.E - East Coast.

7. Marking Technique.

- (1) Mosquitoes were to mark the exact aiming points with T.I. red.
- (2) Backers-up were to aim green T.I. either at T.I. red with 1 sec. overshoot, or at the centre of T.I. green, overshooting by 2 secs.
- (3) Main force aircraft were to aim at T.I. red or the centre of T.I. green.
- (4) The aiming point would be changed at (Z + 22) and crews were to be careful to ignore markers remaining to the North after this time.
- (5) T.I. red were to cascade from 6,000': T.I. green from 3,000', 6,000' and 10,000'.

8. Timing. Zero Hour: 0200 hrs. T.O.T.: 0156 - 0244 hrs.Mosquitoes.

11 a/c (Z - 4) - (Z + 36)
 @ 4 min. intervals with
 2 reserves.

Backers-up.

2 a/c (Z + 2)
 13 a/c (Z + 3) - (Z + 19) @ 1/min
 except at Mosquito times.
 2 a/c (Z + 25) - (Z + 29)
 7 a/c (Z + 26) - (Z + 27) &
 (Z + 30) - (Z + 37)

Q 1/min except at Mosquito
 times and (Z + 35)

Main Force.

1st Wave (Z) - (Z + 7)	100 Lancs.
2nd Wave (Z + 7) - (Z + 15)	32 Well. + 98 Lancs. ^x
3rd Wave (Z + 15) - (Z + 22)	113 Stir. ^x
4th Wave (Z + 24) - (Z + 30)	93 Lancs. ^x
5th Wave (Z + 30) - (Z + 38)	27 Well. + 89 Hal.
6th Wave (Z + 38) - (Z + 44)	88 Lancs.

620 a/c.

^x includes 8 Group aircraft

9. Marker Loads.

10 Mosq.: 2 T.I. red L.B. + 2 T.I. red.

Backers-up.

7 Hal. + 19 Lancs.: 2 T.I. green L.B. + 2 T.I. green.

10. Tactics.(i) WINDOW.

Dropping zone. 0140 E to target and back to 0240 E.

Rate of dropping: one bundle per minute, except from 0240 E, to 0600 E. on outward journey when two bundles per minute were to be dropped.

(ii) Fighter Tactics. 1, 4, 5 and 6 Groups were to be warned that the enemy was using large numbers of freelance fighters, especially over the target, and that there at least attacks would come from above, in order to give the enemy the advantage of a silhouetted bomber against the target flares, searchlights and flares.

..../Sorties.

Sorties.

11.	(a)	No. of a/o despatched	660
	(b)	" " " reporting attack on primary area	589 (89.2%)
	(c)	" " " " " alternative area	4 ^x (0.6%)
	(d)	" " abortive sorties (technical defect or manipulative error 35) (collided 2) (reserve markers, not reqd. 2) 42 (6.4%) (sickness of crew 1) (navigational error 1) (crashed on outward journey 1)	
	(e)	" " aircraft missing	25 (3.8%)

^x (plus one aircraft which also attacked the primary)

Weather Experienced.

12. Bases:- Little cloud. Visibility moderate to good.

Route:- Little cloud at first, increasing over North Sea to 7-9/10ths, tops 10-12,000', base 8,000'; these conditions persisted to the target.

Munchen-Gladbach:- 7-8/10ths thin cloud, breaking at times to 2-4/10ths tops 8-10,000'. No moon. Visibility 5-10 miles.

Wind at 20,000 to target: 300-310°/70-80 m.p.h.

Night Photographic Statistics.

13.	No. of photographs examined	428
	" " " showing (plotted within 3 miles . . . 20) ground (" outside 3 " . . . 5) 53 detail (unplotted 28)	
	" " " showing (plotted within 3 miles . . . 87) fire (" outside 3 " . . . 41) 375 tracks (unplotted 247)	
	" " aircraft reporting attack	589
	" " " estimated to have bombed within 3 miles	260

Narrative of Attack.

14. Owing to cloud conditions over the target, few photographs showed ground detail, and none taken after the first phase, so that it is impossible to give an accurate account of the course of the raid. 8 Mosquitoes worked with their usual precision, and the aiming-point was kept marked with red T.I. throughout the attack. The first greens were on time, and were continuously maintained until the end of the raid; they were not well grouped at first, but improved to an excellent concentration on the second aiming-point. The planned gap from zero + 22 to zero + 24 was nullified by the third wave of aircraft attacking 3 minutes late; there is no evidence to show how rapidly the aiming point was changed. Owing to a very strong wind from E.N.W., instead of from W. as forecast, many crews were blown far S. of track, and released on E.T.A. since they could see no T.I. through the cloud. Thus some of the bombing drifted 15 miles S. but this, like the backing-up, improved towards the end of the attack, when the fires were concentrated and visible for 120 miles.

Day Reconnaissance.

15. Munchen-Gladbach and the adjoining town of Rhoedt are important traffic centres situated at the junction of main through-lines from London, Antwerp and Amsterdam to Dusseldorf and the Ruhr, and are probably used as dormitory towns for workers engaged in the larger industries of Dusseldorf. In addition to the large

..../cable

cable works at Rheydt, both towns contain numerous medium-sized and small industrial plants, mostly manufacturing textiles.

16. Reconnaissance photographs, taken 6½ days after the raid, showed extensive damage to both towns, mostly due to fire. In the central area of each, where destruction was heaviest, rather more than 50% of the built-up property was devastated, while the corresponding figure for the suburbs was 33%. The Kabelwerke Rheydt sustained major damage to important buildings and subsidiary damage elsewhere, and no less than 143 other factories, mostly unidentified, were hit, many of them completely demolished. Gas and electricity works were gravely affected, together with much railway property, including the important marshalling-yards at Rheydt, where direct hits were recorded on the tracks, and repair sheds and a goods shed were damaged. Buildings were destroyed at the 3 stations of Rheydt, Mulfart and Odenkirchen, and an engine roundhouse near Munchen-Gladbach was disintegrated. Many public buildings were gutted, including both Town Halls, the Reichsbank, 2 fire stations and 3 post offices.

Alternative Targets.

17. 4 aircraft attacked alternative targets, in the areas of Hasselt, Knoeke, Peor and Roermond. A fifth, which had already bombed the primary target, bombed an H.E. bomb W. of Roermond on the return journey.

Special Equipment.

18. OBOE: 13 OBOE Mosquitoes, including 2 reserves, were despatched; 8 reported attack, 3 returned early with OBOE failures and the 2 reserves were not called. 5 aircraft marked the first and 3 the second aiming-point. The timing was good and the marking continuous throughout the attack. 1 OBOE aircraft was detailed to drop bombs for practice at the conclusion of the main attack. This aircraft did not get the beam correctly, and was 2 miles off at switch 1. The ground station switched off before the run was completed, but the navigator misunderstood his Morse instructions and bombed on an incorrect signal.

19. H2S: 31 Y-aircraft were despatched, using H2S for navigational purposes only. All reported attack, all but one with their sets in working order. None used it as an aid to bombing. All returned safely.

20. GEI: The Eastern Chain operated on the Wyoming frequency throughout, on the Maryland from 0130 to 0330 hours and on Zanesville from 0100 to 0330 hours. The average ranges were 230 and 250 miles on the outward and return routes respectively, and 2 fixes were obtained over the target, 330 miles. There was heavy interference on all frequencies, mainly "noise". Spurious pulses were seen over Belgium but not further north. Most reports mention a weak B pulse on the Maryland frequency, but in general the pulses were blotted by jamming. The ranges were slightly above average for this target, almost the same results being obtained on each of the 3 frequencies.

Defences

21. Flak and Searchlights: The main opposition on route came from the Dutch and Belgian coastal zones. Outbound bombers reported slight activity from Knoeke, Ghent, Brussels and Malines and considerable heavy flak from Antwerp co-operating with 30 searchlights. Further inland, Eindhoven put up a curtain of light flak well below our aircraft, and moderately accurate heavy flak was encountered from Turnhout. Over the target, cloud hampered the ground defences which offered half-hearted opposition. Heavy flak, both barrage and predicted, was reported in the early stages, but seems to have been swamped within a few minutes. Light flak was hosepiped spasmodically up to 15,000 ft., and searchlights wandered aimlessly, doing little beyond illuminate the dense cloud for the benefit of the fighters. Homeward bombers were again engaged at Turnhout and Eindhoven, and met the usual warm reception from the Scheldt estuary and Antwerp. 14 aircraft sustained flak damage, at least 6 over the target and 2 while returning over Ostend.

22. Fighters: 2 types of wireless traffic were intercepted, the obsolescent G.C.I., and the newly introduced running commentary. G.C.I. was in operation over the W. Netherlands, controlling 17 fighters, no less than 15 of which mentioned hostiles; 8 controlled pursuits and one victory claim were heard. The running commentary control overlapped the G.C.I. area, first mentioning hostiles over the Scheldt estuary. Despite this, very few fighters appear to have made contact on the outward route, our crews reporting only 10 combats and no attacks, as opposed to 12 attacks and 21 other combats on the homeward route. This general control lends itself best to interception over the target, where nearly half the combats occurred, including 14 attacks and 20 approaches.

23. The reduced rate of dropping WINDOW on the outbound route appears to have been sufficient to prevent the G.C.I. system from operating successfully. Of the 8 controlled pursuits overheard, only 2 were against outbound bombers, and the single victory claim referred to a homebound aircraft. The 2 outbound pursuits were probably made against Mosquitoes, as the heights were given as 27,000 ft. and 26,000 ft., and Mosquitoes are not so well screened by WINDOW. 13 aircraft were damaged by fighters.

Casualties

24. No. of aircraft missing.....25 (3.8%)
 " " " damaged (flak..... 14)
 (fighter..... 13)
 (incendiaries..... 2)
 (friendly aircraft..... 1).....37
 (collision..... 1)
 (other causes..... 6)

25. Crews' observations suggest that at least 10 aircraft were destroyed by fighters, 6 over the target, 3 homebound in the Eindhoven-Roermond area and one over the North Sea, 40 miles off Orfordness. 7 more were probably lost to flak, 3 over the target, 2 at Antwerp and one each at Breda and Turnhout. The only outbound shoot-downs observed were at Knooke (3), Roermond and off Lowestoft where a P.F.F. aircraft is thought to have been shot down.

2 Wellingtons of 4 Group collided in mid-air soon after take-off, and were destroyed with their crews. A Halifax of 4 Group caught fire while taking off and was burnt out, while another crashed near Wisboch on return and was totally wrecked.

DUISBURG

26. 12 P.F.F. Mosquitoes were despatched on a harassing raid against Duisburg. 9 attacked on D.R. runs from GEE fixes, bombing from 28,000 ft., above 8/10ths cloud. Intense opposition was encountered from accurate heavy flak, co-operating with numerous searchlights. One aircraft was lost without trace; one other was slightly damaged by flak.

FORET D'EPERLEQUES.

Plan of Attack

27. Route:- Clacton - Gravelines - Target (505CN. 0210E) - Le Touquet - Beachy Head.
28. Target Marking: (a) Mosquitoes to mark the aiming point with T.I. red.
 (b) Backers-up to aim green T.I. at rods with no overshoot.
 (c) Main Force to aim at T.I. only, preferably red.

...../29. Timing.

29. Timing: Zero Hours: 2200 hours T.O.T.: 2156 - 2215 hours.

<u>Mosquitoes</u>	<u>Backers-up</u>	<u>Main Force</u>
6 from zero - 4 to zero + 16 (one every 4 minutes)	6 Halifaxes at: zero + 1 zero + 2 zero + 5 zero + 6 zero + 9 zero + 10	34 Wellingtons zero to zero + 15

Bomb Loads: 6 Mosq: 2 T.I. red LB + 2 T.I. red
3 Hal: 1 T.I. green LB + 1 T.I. green + 9 x 1,000 MC + 4 x 500 MC.
34 Well: 4-6 x 500 GP.

31. Tactics No WINDOW. Cameras to be carried. T.I. cascade from 6,000' Main Force to attack from 17-18,000 ft.

Sorties

32. (a) No. of aircraft despatched..... 45
 (b) " " reporting attack on primary area..... 33 (73.3%)
 (c) " " abortive sorties (tech. defect or manipulative error.....8)
 (late for markers.....2)
 (unable to pinpoint.....1) 11 (24.4%)
 (d) " " aircraft missing..... 1 (2.2%)

Weather Experienced

33. No cloud. Excellent visibility. No moon. Slight haze.

Night Photographic Statistics

34. No. of photographs examined..... 24
 " " " showing ground detail (plotted within 1 mile.....5)
 " " " " " outside 1 mile.....13) .. 18
 " " " fire-tracks only (unplotted)..... 6
 " " aircraft reporting attack..... 33
 " " " estimated to have bombed within 1 mile..... 7

Narrative of Attack

35. 3 Mosquitoes failed to attack for technical reasons; the remaining 3 bombed at zero - 1, zero + 4 and zero + 18. All 6 backers-up attacked between zero + 1 and zero + 9. The marking was fairly accurate, but drifted as much as 3 miles to the S.E. The Wellingtons completed their attack by zero + 15, according to plan. Crews reported 4 or 5 large white explosions in the target area.

Day Reconnaissance

36. No reconnaissance was undertaken.

Special Equipment

37. OICE: 6 OBOE aircraft were detailed to mark the target. 3 succeeded; 1 experienced OBOE failure and 2 returned early with engine trouble. None were lost.

H2S: 6 aircraft carried H2S as a navigational aid. All attacked, and in only one case was the set not in working order. None used it as a bombing aid.

Enemy Defences.

38. Little opposition was met, apart from some flak with searchlights at Gravelines which slightly damaged one aircraft. One fighter was seen, but no combats were reported.

Casualties

39. One Wellington of 92 Group was lost without trace. No other damage was sustained apart from one minor hit from flak.

MINELAYING

40. 9 Stirlings of 3 Group laid 51 mines off the Frisians without loss or damage.

MLM/PVD.
EC/S.26342/5/ORS.3.
28th October, 1943.

MUNICHEN-GLAUBACH: DUISBURG: PORT D'ESPERLEQUES: Minelaying:

30/31st. AUGUST, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A	ATTACK-ED	NOT ATTACK-ED	Tons of Bombs	H.E. Inc.
MUNICHEN-GLAUBACH	B FFF	Mosq. IV	6	5	-	1	-	-	-	-	-	-	-	-	P. 1000.0 1269.4 M. 5-4 10.3 M. 34-4 49.6
		Mosq. IX	8	4+2*	-	2+2*	-	-	-	-	-	-	-	-	
		Hal. II	1	1	-	-	-	-	-	-	-	-	-	-	
		Hal. IA	6	6	-	-	-	-	-	-	-	-	-	-	
		Lanc. III	16	15	-	-	-	1	-	-	-	-	1	-	
		Hal. II	1	1	-	-	-	-	-	-	-	-	-	-	
	MAIN FORCE	Hal. IA	9	7	-	-	2	-	-	2	-	-	4	1	Heavy Bombs 8000lb. 4000lb.
		Lanc. III	15	13	-	-	-	2	-	-	-	-	4	-	
		Lanc. I	18	15	-	-	3	-	-	-	-	-	2	4	
	1	Lanc. III	88	83	-	-	3	2	-	1+1C	-	-	2	5	P. 11 269 M. 1 1
		Well. X	28	23	-	-	2	3	1+1E	-	-	-	2	3	M. - 7
	3	Str. I	1	-	-	-	-	1	-	-	-	-	-	-	Of these the following a/c attacked BOMBERS
		Str. III	106	94	3	1	3	5	4+1E	1+1C	1C+1B	7	14	-	
	4	Lanc. II	11	11	-	-	-	-	-	-	-	-	-	-	Lanc. I 4 Lanc. III 35
		Hal. IIAV	66	62	-	-	3	1	-	1C+2B	1+2E	5	8	-	
		Hal. IA	51	42	-	-	4	5	2	-	1	2	6	-	
	5	Well. X	15	13	-	-	2	-	-	-	2E	-	-	-	Lanc. I 4 Lanc. III 35
		Lanc. I	27	23	-	-	3	1	-	1+1C	1+1C	3	6	-	
	6	Lanc. III	111	108	1°	-	2	1	2	-	1	1	1	1	Lanc. I 4 Lanc. III 35
		Hal. IIAV	32	27	-	-	1	2	2	1+1C+1B	-	4	7	-	
		Hal. IA	19	17	-	-	2	-	-	1+1AC	-	2	5	-	
		Lanc. II	11	9	1	-	1	-	-	-	-	-	-	-	
	Well. X	14	10	-	-	3	1	1B	-	-	-	-	-	-	
	MUNICHEN GLAUBACH TOTAL			660	589	4+1°	35	25	2E+1B +11	3B+6C +4	4E+1B- 2C+3	32	93	48 47 1	

° Also attacked Primary

* Reserve a/c not required.

...../Contd:-

MUNICHEN-GLAUBACH: DUISBURG: PORT D'ESPERLEQUES: Minelaying:

30/31st. AUGUST, 1943. (Contd:)

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A	ATTACK-ED	NOT ATTACK-ED	Tons of Bombs	H.E. Inc.
MUNICHEN-GLAUBACH TOTAL			660	589	4+1°	35	25	2E+1B +11	3B+6C +4	4E+1B- 2C+3	32	93			
DUISBURG	B FFF	Mosq. IV	12	9	-	2	1	1	-	-	-	-	-	P. 6.8 .2	
PORT D'ESPERLEQUES	B FFF	Mosq. IV	6	3	-	1	2	-	-	-	-	-	-	P. 62.3 2.4	
	91	Hal. IA	6	6	-	-	-	-	-	-	-	-	-	M. 1.3 -	
" "	91	Well. Io.	5	4	-	-	1	-	-	-	-	-	-		
		Well. III	5	4	-	-	1	-	-	-	-	-	-		
	92	Well. X	1	1	-	-	-	-	-	-	-	-	-		
		Well. III	5	5	-	-	-	-	-	-	-	-	-		
93	Well. X	5	3	-	-	1	1	-	-	-	-	-	1		
	Well. Io.	1	1	-	-	-	-	-	-	-	-	-	-		
	Well. III	5	3	-	-	1	1	1	-	-	-	-	-		
Well. X	5	2	-	-	1	2	-	-	-	-	-	-	-		
PORT D'ESPERLEQUES TOTAL			45	33	-	3	8	1	1	-	-	-	1		
BORISKO TOTAL			717	631	4+1°	45	27	2E+1B +13	3B+6C +4	4E+1B- 2C+3	32	94			
MINELAYING FRIGATES	3	Str. I	1	1	-	-	-	-	-	-	-	-	-	6 mines	
		Str. III	8	8	-	-	-	-	-	-	-	-	-	45 mines	
MINELAYING TOTAL			9	9	-	-	-	-	-	-	-	-	51 mines		
TOTAL			226	640	4+1°	45	27	2E+1B +13	3B+6C +4	4E+1B- 2C+3	32	94			

* Reserve a/c not required.

° Also attacked Primary.

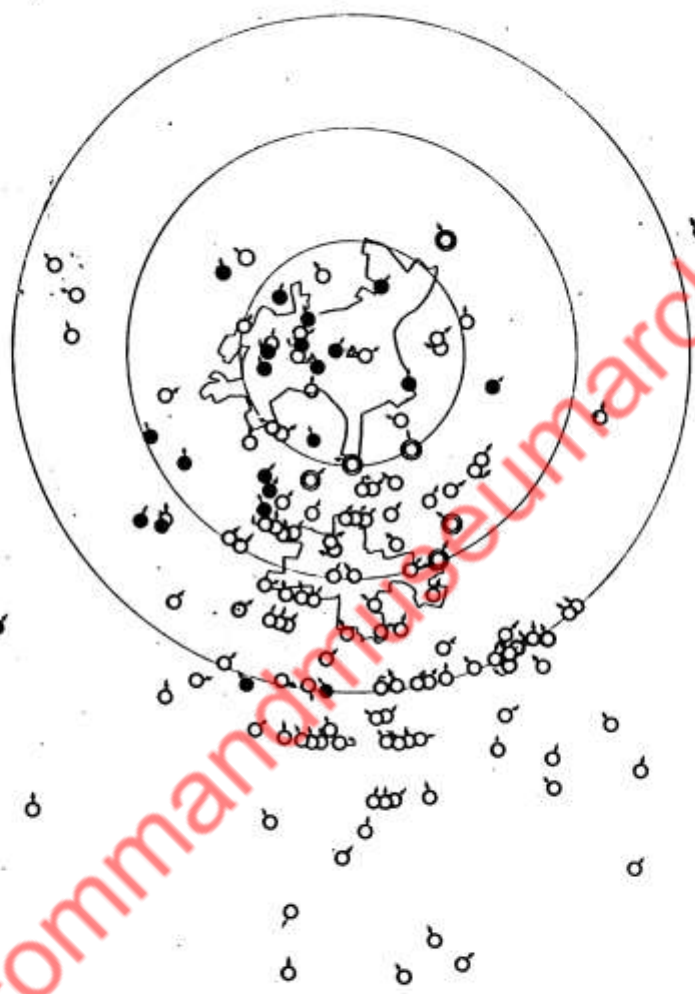
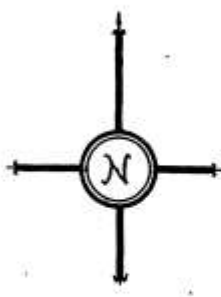
RAID TRACK NOT AVAILABLE

FINAL PLOT OF NIGHT PHOTOGRAPHS

515

TAKEN 30/31st AUGUST 1943. TARGET MUNCHEN-GLADBACH

SECRET



Photographs taken with Bomberg		
	P.F. marks A/C	Main force A/C
Plotted by ground detail	●	●
Plotted by fires	○	○
PLOTTED	By Ground Detail	By Fires
Within 3 miles	20	87
Outside 3 miles	5	41
UNPLOTTED	28	247
Total prints (with bombing) examined 428		
146 plots outside the area covered by this map		

Scale: 1 inch = 1 mile

DRS BC 361 A
Date 11 10 43 J.F.R. E.S.B.
Ref Cont.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS31st. AUGUST/1st. SEPTEMBER, 1943.BERLIN: Foret d'Hesdin: Brauweiler:SUMMARYBERLIN

1. A force of 613 heavy bombers, with 9 Mosquitoes as route-markers, set out to attack Berlin. The Y-type aircraft which acted as blind-markers and recentrers again released their markers S.S.W. of the city centre, and the backers-up and main force attacked still further S. owing to cloud obscuring all but the nearest T.I.'s. Thus the bombs fell mainly 8 to 30 miles from the aiming-point, on suburban districts and outlying villages. Enemy aircraft were very active, especially in the target area, and the majority of the 47 bombers lost probably fell to fighters.

Foret d'Hesdin

2. An ammunition dump in the Foret d'Hesdin was attacked by a small force of 30 Wellingtons of 4 and Training Groups, led by 6 OBOE Mosquitoes and 5 Halifaxes of 8 Group. The marking and bombing were excellent, and all the aircraft returned safely.

Brauweiler

3. 6 OBOE Mosquitoes were despatched to attack Brauweiler. 3 completed the mission, one bombed Aachen and 2 failed to reach enemy territory.

Meteorological Forecast

1. Estimated midnight position of fronts (1) warm from St. Abb's Head to Plymouth (2) cold from St. Abb's Head to S.E. Ireland.

Home bases: the part of the front S. of about 53° N is not expected to be effective, and bases in East Anglia and eastern Training Group bases may hold out all night. Possibility of low cloud base above 1,500 ft. with light rain in northern Groups. Local visibility troubles expected. For return, a warm front will be about N-S along the 1° W line over Operational Groups. In a narrow belt on this front S. of 54° N., cloud base below 1,000ft. with light rain. Elsewhere cloud base mainly above 1,500ft. Visibility 2 miles or more, but in S. of 6 Group and locally in 1, 4, 5 and 93 Groups, visibility 1-2 miles, due to slight rain or smoke.

France: broken medium and low cloud, base 1,500 ft. near west coast.

Europe: conditions over the continent fairly uniform, with some good breaks in variable thin strato-cumulus, tops 5-6,000ft., base about 3,000ft.

Berlin: good chance of clear skies, though patches of 4-6/10ths. strato-cumulus tops 6-7,000 ft. are possible. Ground visibility good.

...../7inds:

<u>Winds:</u>	<u>750 mb.</u>	<u>500mb.</u>	<u>300mb.</u>
Outward route:	250°-310°/20-30mph.	270°-320°/35-50mph.	240°-350°/40-70mph.
Target:	310°/30 mph.	320°/50 mph.	350°/70 mph.
Return route:	310°-230°/30-20mph.	310°-280°/50-25mph.	350°-260°/70-35mph.

BERLINPlan of Attack

5. Route East coast - 53°15'N. 04°00'E. - N. end of Texel Island - 51°47'N. 11°08'E. - 52°17'N. 14°05'E. - TARGET - 51°00'N. 09°30'E. - 50°30'N. 07°20'E. - Cayeux - Beachy Head.

6. Marking Technique

(a) Green T.I's were to be dropped as route-marker at 51°52'N. 11°43'E. (18 miles 187°Magdeburg) on outward and homeward routes by 8 blind markers, 9 backers-up and 2 recentrers.

(b) 9 OBOE Mosquitoes were to drop red T.I's at 50°17'N. 05°45'E (38 miles 202°Anchen) and green T.I's at 50°34'N. 06°10'E. (15 miles 167°Anchen), respectively 10 miles S. and N. of the homeward track.

(c) Blind markers were to drop red T.I's on the aiming-point by means of H2S, using the W.N.W. promontory as a datum, and releasing it 8 miles short range, 120° true from its centre, on a heading of 308°, with 30/30 scan.

(d) Backers-up were to maintain the marking with green T.I's aiming to overshoot the estimated centre of red T.I's by 3 seconds or of green T.I's by 2 seconds.

(e) Recentrers were to aim green T.I's using H2S if serviceable, otherwise to act as normal backers-up.

(f) Main force aircraft were to aim to overshoot the estimated centre of green T.I's by 1 second.

N.B: T.I's were to cascade at 3,000, 6,000 and 10,000 ft.

7. Timing Zero Hour - 2330 hours Period of Attack - 2328-0001 hours.

Pathfinder Force

30 blind markers at (Z-2)
 12 recentrers from (Z+12)-(Z+27), 2 every 3 minutes.
 5 backers-up at (Z)
 2 " " " (Z+1)
 22 " " from (Z+2)-(Z+28), 1 per minute except at recentrer times. 2
 at (Z+5).

Main Force

27 aircraft of 8 Group (Z-2)
 90 Lancasters (Z+2)-(Z+7)
 80 Halifaxes (Z+7)-(Z+11)
 11 Stirlings (Z+11)-(Z+18)
 87 Lancasters (Z+18)-(Z+22)
 84 Halifaxes (Z+22)-(Z+26)
 90 Lancasters (Z+26)-(Z+31)

8. Markers to be Carried

Blind Markers:	6 Halifaxes)	2 T.I. red LB. + 2 T.I. red.
	16 Lancasters)	
	8 Lancasters	2 T.I. red LB. + 2 T.I. red + 2 T.I. green LB.
		....backers-up.

Backers-up) 3 Halifaxes } 2 T.I. green LB. + 2 T.I. green
 Recentrers) 24 Lancasters }
 11 Lancasters 4 T.I. green LB. + 2 T.I. green.
 Route-markers 9 Mosquitoes 2 T.I. red LB. + 2 T.I. green LB.

All Y-type aircraft with qualified crews to carry 1 flare (red with green stars) in the fuselage.

9. Tactics WINDOW to be dropped, at one bundle per minute, from 04°00'E. to 09°30'E.; 12°00'E. to target to 12°00'E., 08°30'E. to 03°00'E.

Sorties

10.	No. of aircraft despatched.....	622
"	" " " reporting attack on primary area.....	474
"	" " " " " " alternative area.....	(76.2%) 15
"	" " abortive sorties (technical and manipulative defects.....)	77
	(illness of crew.....)	6
	(late.....)	2
	(taxying accident.....)	1
"	" aircraft missing.....	47
		(7.6%)

Weather Experienced

11. Home bases: mainly fit, with well broken cloud at 2,000 ft., and moderate visibility. Some mist patches formed in S. Yorkshire, and there was local drizzle during the night.

Route: broken cloud over England, increasing over the sea to 9-10/10ths., base 2-4,000ft., tops 8-10,000ft. Broken medium cloud to near the enemy coast. Sheet of strato-cumulus persisting to about 11°E., where it broke to 5-8/10ths. Visibility moderate to good. Winds at 20,000ft. 300°-320°/40-50 mph., veering at 8°E to 340°-360°/50-60mph.

Target: variable strato-cumulus, about 1,500ft. thick, 4-7/10ths. tops 8-10,000ft. increasing at times to 8-9/10ths. Visibility moderate to good. Wind: 20,000ft./340°/50-60 mph; 14,000ft./310°/30-35 mph. No moon.

Night Photographic Evidence

12.	No. of photographs with bombing examined.....	377
"	" " showing ground detail	(plotted within 3 miles.....1) (" outside 3 miles.....121) (unplotted.....28)
		150
	No. of photographs showing fire-tracks	(plotted within 3 miles.....Nil) (" outside 3 miles.....103) (unplotted.....124)
		227
"	" aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming point.....	2
	No. of aircraft estimated from the photographic evidence to have bombed the target area*.....	10

* Excluding suburban area. ~~Outline of "target area" is shown on~~ ^{No} photographic plot. is issued.

13. Narrative of Attack

Both on the outward and return route, green T.I's were released by Y-type aircraft 18 miles S. of Magdeburg. Red and green T.I's were also released 10 miles S. and N. of the return route at 6°E. by OBOE Mosquitoes.

14. The blind-markers were again misled by responses from some part of the target other than the promontory N.N.W. of Berlin, which was to be their datum point. Also, owing probably to the inaccurate wind forecast, the timing was poor, their attacks lasting for 27 minutes. Their T.I's fell 8 to 13 miles S.S.W. of Berlin, and there were never more than 7 red T.I's burning at one time. The backing-up was continuous, but owing to the scarcity of red T.I's and cloud which made all but the nearest T.I's invisible, the green T.I's fell further from the aiming-point. The main force also bombed the first T.I's seen, so that the attack spread back some 30 miles along the line of approach. The recenterers, only 4 of which dropped T.I's blindly on H2S, appeared to have little effect on the progress of the raid. Night photographs indicate that almost the whole of the attack fell 8 to 30 miles S.S.W. of the aiming point, mainly on the suburban districts and villages of Tetlow, Ruhlsdorf, Sputendorf and Genshagen.

Daylight Reconnaissance

15. No reconnaissance photographs were taken until 6th. September; the prints show damage caused in the 3 raids on the nights of 23/24th. August, 31st. August/1st. September and 3/4th. September, an account is given in Night Raid Report No. 417 for 3/4th. September. It is unlikely that much of the damage was caused by the attack at present under consideration.

Alternative Targets

16. 15 aircraft attacked alternative targets and 3, which also attacked the primary, dropped part of their load en route. The alternatives were in the areas of Texel Island (4), Vlieland, (2), Osnabruck (3), Bernberg (2), Halberstadt (2), Lingen, Brandenburg, Neuenhaus, Zossen, and Soltau.

Special Equipment

17. OBOE 9 OBOE Mosquitoes which were despatched to drop route-markers, to assist the bombers returning from Berlin, all completed the task successfully.

18. H2S Of the 30 Y-type aircraft which were detailed as blind-markers, 27 reported attack. 18 released markers on H2S, and 9 dropped H.E. only, one on H2S and 8 on T.I's. Both timing and accuracy were poor. Only 2 aircraft were plotted on the vulnerable part of the target, the remainder bombing the suburban districts and open country 8-12 miles S.S.W. of the aiming point. 11 of the 12 recenterers attacked, only 4 using H2S to drop markers. Another used the equipment to drop H.E. blindly.

19. 40 Y-aircraft used H2S as a navigational aid. 24 reached the target with serviceable sets, and one bombed blindly. In all, 82 Y-aircraft were despatched, of which 71 reached the target, 51 with serviceable equipment. 8 Y-type aircraft returned early and 3 were lost.

20. GEE The Eastern Chain operated on the Wyoming frequency throughout and on the Maryland frequency from 2200 to 0200 hours. On the outward route the average range was 235 miles and on the return 280 miles. The maximum range was 466 miles. The interference, which was of the usual types on both frequencies, was strongest on the outward route. Signals on the Wyoming frequency were strong, and reports of weak signals on the Maryland frequency may have been due to noise jamming. Nevertheless the ranges obtained on the Maryland frequency were considerably better than those on the Wyoming frequency.

Enemy Defences

21. Flak and Searchlights Little flak was encountered on the route, but the defences of areas near the route, including those of Osnabruck, Magdeburg, Dessau, and Coblenz, were active. Brilliant white flares, which appeared to have
...../been dropped from

been dropped from aircraft, possibly to assist night fighters, were observed along the route. In the target area slight to moderate heavy barrage fire was encountered. This decreased in intensity during the attack, possibly in part due to the spread of the raid away from the target. Searchlights, which were hampered by cloud, seemed to be less numerous than usual, but they effectively illuminated the cloud base to aid enemy fighters. 32 aircraft were hit by flak.

22. Fighters Intercepted wireless traffic indicated great fighter activity, aircraft being drawn from areas as widely separated as Grove in N. Denmark and Juvincourt and Dijon. The defences were prepared for the return of the bombers by the usual northerly routes, many beacons being active in these areas. The use of a southern route may account for the interceptions on the return being fewer than those on the outward journey. 5 ground controlled fighter patrols were heard operating from Deelen, Zwolle, Wunstorf, Flushing and an unlocated area. 4 pursuits resulted in one attack, but no claim was overheard. 98 interceptions were reported, including 26 attacks and 49 other combats. In all, 42 combats took place in the target area, 18 on the outward route and 15 on the return; all of the 33 combats en route occurred within 100 miles of Berlin, within which range 4 aircraft are believed to have been shot down by fighters. 14 bombers were damaged by enemy aircraft.

Casualties

23.	No. of aircraft missing.....	47 (7.6%)
	" " " damaged { flak..... 32 ⁺	49 (7.9%)
	{ fighters..... 14 ⁺	
	{ other causes..... 4)	

+ Including one damaged by flak and fighter.

It was estimated that most of the missing aircraft were shot down by enemy aircraft, 8 en route at Enkhausen, Rheine, Osnabruck, Hanover and between Magdeburg and the target (4), and up to 31 in the target area. 4 aircraft, which were off the route, were shot down by flak at Osnabruck, Dessau and Magdeburg (2). 4 further bombers were seen to crash near Leeuwarden (2), Dieppe and Magdeburg, the cause being unknown. At least 4 enemy fighters were destroyed. One aircraft was destroyed in collision, and other damage not due to flak or fighter was caused by taxiing accident, a landing accident and strains put on the aircraft during flight. Another bomber, which was damaged by an enemy fighter, was also seriously damaged by machine-gun fire from a Stirling.

Port d' Hesdin

Plan of Attack

21. Route: Base - Reading - Beachy Head - TARGET - Cayeux - Beachy Head - Reading - Base.

25. Marking Technique The aiming-point was to be marked with red T.I's by 6 OBE Mosquitoes, the marking to be maintained by 5 Halifaxes aiming green T.I's at red T.I's. All T.I's were to cascade from 6,000ft. Main Force aircraft were to aim at red T.I's if visible, otherwise at the estimated centre of all green T.I's seen.

26. Timing Zero Hour: 2200 hours.

Pathfinder Force

6 Mosquitoes at (Z-4), (Z), (Z+4), (Z+8), (Z+12) and (Z+16).
5 Halifaxes at (Z+1), (Z+2), (Z+5), (Z+6) and (Z+9)

Main Force

30 Wellingtons from (Z) to (Z+15)

...../Markers to be Carried:

27. Markers to be Carried

Mosquitoes: 2 T.I. red LB. + 2 T.I. red.
 Halifaxes : 1 T.I. green LB. + 1 T.I. green.

Sorties

28. No. of aircraft despatched..... 41
 " " " reporting attack on primary area..... 36(87.3%)
 " " abortive (technical and
 manipulative defects.....3)
 (did not see T.I.'s.....2)..... 5(12.2%)
 " " aircraft missing.....Nil.

Weather Experienced

29. Target: 5-7/10ths. thin layer cloud, tops 2-4,000 ft. with broken upper cloud above 18,000ft. Visibility good. No moon.

Night Photographic Evidence

30. No. of photographs with bombing examined.....26
 " " " showing (plotted within 1 mile.....16)
 ground-detail { " outside 1 mile.....Nil }.....16
 (unplotted.....Nil)
 " of photographs showing (plotted within 1 mile..... 8)
 fire-tracks { " outside 1 mile.....Nil }.....10
 (unplotted..... 2)
 " of aircraft estimated from the photographic evidence to have
 bombed within one mile of the aiming point.....30
 (No photographic plot will be issued)

Narrative of Attack

31. The target was marked accurately and on time by the OBOE Mosquitoes, and the backing-up was also good. The main force, which was composed of Wellingtons of 4 Group and Training Groups, bombed very accurately on the markers, the attack lasting only about one minute longer than planned. The night photographic evidence indicates that most of the attack fell within one mile of the aiming point.

Daylight Reconnaissance

32. Photographs of fair quality covered the south-eastern part of the forest and the villages of Ruby-St. Leu and Ruby St. Ilen, the site of the ammunition dump being partially obscured by cloud, and covered on one print only. In addition the craters seen on the photographs might have been caused by this raid, or by attacks carried out on 2nd. September by aircraft of U.S. VIII Air Support Command and by aircraft of Fighter Command. 10 craters were visible in a clearing adjoining the site of the ammunition dump, 11 were in the nearby forest and about 40 in the field S. of the forest.

Special Equipment

33. OBOE 5 of the 6 OBOE Mosquitoes detailed to mark the target completed the task successfully. The sixth returned early owing to a failure of the OBOE apparatus.

34. H2B 5 Y-type aircraft, all of which reported attack, carried H2B as a navigational aid. 2 sets of equipment were unserviceable. In no case was the equipment used as an aid to bombing.

...../Enemy Defences

Enemy Defences

35. Flak and Searchlights Heavy flak co-operated with searchlights near St. Quentin, St. Valery and Cayeux, and slight light flak was encountered at Abbeville and over the target. None of the bombers was hit.

36. Fighters One Wellington, which was intercepted on the return by an enemy aircraft, sustained minor damage.

Casualties

37. All the bombers returned safely, one being damaged by fighter.

BR. UWEILER

38. 6 OBOE Mosquitoes were detailed to attack Brauweiler, and 3 completed the task successfully. One aircraft bombed Aachen owing to GEE failure, and another returned early owing to a technical defect. The sixth aircraft struck a stationary Mosquito while taxiing before take-off, sustaining minor damage.

EKO/JT.
 BJ/S. 26342/5/ORS3,
29th. October, 1943.

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31st AUGUST/1st. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	✓/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS			
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT R/A	ATTACK-ED	NOT ATTACK-ED	Tons of Bombs	H.E. Inc.		
BERLIN	8 PFF	Mosq. IX ^a	9 ^a	9 ^a	-	-	-	-	-	-	-	-	-	-	P. 725.9	619.2	
		Hal. IA	9	8	1 ^b	-	-	1	-	-	-	-	1	1	A. 23.4	12.9	
		Lanc. III	60	51	3+1 ^b	-	5	1	10C+7	-	10C	-	-	3	N. 45.3	56.5	
	8 MAIN FORCE	Hal. I	11	8	1 ^b	-	2	1	-	-	-	-	-	-	-	Heavy Bombs	
		Lanc. I	1	1	-	-	-	-	-	-	-	-	2	1	ADCOB.		
	1	Lanc. I	19	16	-	-	-	-	-	-	-	-	-	-	10	P. 268	
		Lanc. III	15	13	-	-	-	-	-	-	-	-	-	-	2	A. 6	
	3	Stir. I	87	74	2	-	6	5	1	-	-	-	-	-	2	N. 11	
		Stir. III	1	1	-	-	-	-	-	-	-	-	-	-	-	-	
	4	Lanc. II	105	64	5	6	14	16	10C+3	1E ^a +20C+5	-	-	13	-	6		
		Hal. IIAV	9	6	-	-	3	-	-	-	1	-	-	-	-		
	4	Hal. IIAV	48	31	1	-	13	3	1E+4	10C	-	-	2	11			
Hal. IA		61	42	2	-	8	9	1	20C	-	-	3	6				
5	Lanc. I	21	18	1	-	1	1	10C+1	-	-	-	1	2				
	Lanc. III	108	89	1	4	11	3	1E+10C+10C ^x +1	1E	4	21						
6	Hal. IIAV	31	25	-	-	3	3	5	-	10C	1	4					
	Hal. IA	16	13	-	-	-	3	-	-	-	-	-	-				
6	Lanc. II	11	5	-	-	5	1	1	-	-	-	-	-				
BERLIN TOTAL			622	474	15+3 ^b	10	76	47	1E+1E+50C+24	1E ^a +60C+10C ^x +6	1E+20C+1	26	72				

^a Route-markers.

^b Also hit by British ammunition

^c Also attacked primary

^x Also hit by flak.

...../Contd

31st AUGUST/1st. SEPTEMBER, 1943. (Contd.)

TARGET	GROUP	TYPE	SORTIES	✓/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS		
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT R/A	ATTACK-ED	NOT ATTACK-ED	Tons of Bombs	H.E. Inc.	
BERLIN TOTAL			622	474	15+3 ^b	10	76	47	1E+1E+50C+24	1E ^a +60C+10C ^x +6	1E+20C+1	26	72			
POWET D'HESSIN	8 PFF	Mosq. IV	6	5	-	1	-	-	-	-	-	-	-	-	P. 65.3	3.3
		Hal. IA	5	5	-	-	-	-	-	-	-	-	-	-		
		Well. X	12	11	-	-	1	-	-	-	-	-	-	-		
		Well. III	5	5	-	-	-	-	-	-	-	-	-	-		
		Well. X	1	1	-	-	-	-	-	-	-	-	-	-		
		Well. III	3	3	-	-	-	-	-	-	-	-	-	-		
92	Well. X	Well. X	3	3	-	-	-	-	-	-	-	-	-			
		Well. X	3	3	-	-	-	-	-	-	-	-	-			
93	Well. III	Well. III	4	1	-	2	1	-	-	-	-	1	-			
		Well. X	2	2	-	-	-	-	-	-	-	-	-			
POWET D'HESSIN TOTAL			41	36	-	3	2	-	-	1	-	-				
BRANDEL	8 PFF	Mosq. IV	6	3	-	2	-	-	-	-	1	-	-	P. 2.3	0.8	
TOTAL			669	513	16+3 ^b	13	80	47	1E+1E+50C+24	1E ^a +60C+10C ^x +7	1E+20C+2	27	72			

^c Also attacked primary.

^b Also hit by British ammunition.

^x Also hit by flak.

RAID TRACK AND BOMB PLOT NOT AVAILABLE

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