

BOMBER COMMAND REPORT ON NIGHT OPERATIONS31st. AUGUST/1st. SEPTEMBER, 1943.BERLIN: Foret d'Hesdin: Brauweiler:SUMMARYBERLIN

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

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

6 OBOE Mosquitoes were despatched to attack Brauweiler. 3 completed the mission, one bombed Aachen and 2 failed to reach enemy territory.

Meteorological Forecast

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 at 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)	86
	(illness of crew.....6)	(13.8%)
	(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)	150
	(unplotted.....28)	
	No. of photographs showing fire-tracks	(plotted within 3 miles.....Nil)
	(" outside 3 miles.....103)	227
	(unplotted.....124)	
"	" 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

^{No}
 + Excluding suburban area. ~~Outline of "target area" is shown on~~ photographic plot. is issued.

...../13. Narrative of attack

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 6⁰⁰E. 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+ }	
	{ fighters..... 14+ }	49 (7.9%)
	{ 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

24. 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 OB/E 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.

31st AUGUST/1st. SEPTEMBER, 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	ATTACK-ED	NOT ATTACK-ED	H.E.	Inc.		
BERLIN	8 PFF	Mosq. IX	9*	9*	-	-	-	-	-	-	-	-	-	-	P. 725.9	619.2	
		Hal. IA	9	8	1 ^g	-	-	1	-	-	-	2	1	-	A. 23.4	12.9	
		Lanc. III	60	51	3 ^g	-	5	1	1.0 ^g 7	-	1.0 ^g	-	3	-	N. 45.3	56.5	
	8 MAIN FORCE	Hal. IA	11	8	1 ^g	-	2	1	-	-	-	-	4	-	-	Heavy Bombs	
		Lanc. I	1	1	-	-	-	-	-	-	-	2	1	-	-	1000lb.	
	1	Lanc. I	15	13	-	-	2	-	-	-	-	-	2	-	P. 268	-	
		Lanc. III	67	74	2	-	6	5	1	-	-	-	2	-	A. 6	-	
	3	Stir. I	1	1	-	-	-	-	-	-	-	-	-	-	-	N. 11	-
		Stir. III	105	64	5	6	14	16	1.0 ^g 3	1E ^g +2.0 ^g +5	-	13	6	-	-	-	-
	4	Lanc. II	9	6	-	-	3	-	-	-	1	-	-	-	-	-	-
		Hal. IIAV	48	31	1	-	13	3	1E+4	1.0 ^g	-	2	11	-	-	-	-
	5	Hal. IA	61	62	2	-	8	9	1	2.0 ^g	-	3	6	-	-	-	-
Lanc. I		21	18	1	-	1	1	1.0 ^g +1	-	-	1	2	-	-	-	-	
6	Lanc. III	108	89	1	4	11	3	1E+2.0 ^g +1	1.0 ^g +1.0 ^g +1	1E	4	21	-	-	-	-	
	Hal. IIAV	31	25	-	-	3	3	5	-	1.0 ^g	1	4	-	-	-	-	
BERLIN TOTAL			622	474	15+3 ^g	10	76	47	1E+1E+5.0 ^g +2.0 ^g +2.0 ^g	1E ^g +6.0 ^g +1.0 ^g +6	1E+2.0 ^g +1	26	72	-	-	-	

* Route-markers. ^g Also hit by British ammunition.
^g Also attacked primary x Also hit by flak. /Contd

31st AUGUST/1st. SEPTEMBER, 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 F/A	ATTACK-ED	NOT ATTACK-ED	H.E.	Inc.	
BERLIN TOTAL			622	474	15+3 ^g	10	76	47	1E+1E+5.0 ^g +2.0 ^g	1E ^g +6.0 ^g +1.0 ^g +6	1E+2.0 ^g +1	26	72	-	-	
POSET D'HESSIN	8 PFF	Mosq. IV	6	5	-	1	-	-	-	-	-	-	-	-	P. 69.3	3.3
		Hal. IA	5	5	-	-	-	-	-	-	-	-	-	-	-	-
		Well. X	12	11	-	-	1	-	-	-	-	-	-	-	-	-
		Well. III	5	5	-	-	-	-	-	-	-	-	-	-	-	-
		Well. X	1	1	-	-	-	-	-	-	-	-	-	-	-	-
		Well. III	3	3	-	-	-	-	-	-	-	-	-	-	-	-
93	Well. III	4	1	-	2	1	-	-	1	-	1	-	-	-	-	
	Well. X	2	2	-	-	-	-	-	-	-	-	-	-	-	-	
POSET D'HESSIN TOTAL			41	36	-	3	2	-	-	1	-	1	-	-	-	
BRANCKLES	8 PFF	Mosq. IV	6	3	-	2	-	-	-	1	-	-	-	-	P. 2.3	0.8
T O T A L			669	513	16+3 ^g	13	80	47	1E+1E+5.0 ^g +2.0 ^g	1E ^g +6.0 ^g +1.0 ^g +7	1E+2.0 ^g +2	27	72	-	-	

^g Also attacked primary.
^{*} Also hit by British ammunition.
^x Also hit by flak.

RAID TRACK AND BOMB PLOT NOT AVAILABLE

BOMBER COMMAND REPORT ON NIGHT OPERATIONS

23rd. SEPTEMBER, 1943.

Foret de Mormal: Cologne: Duisburg: Mine laying:SUMMARYFORET DE MORALL

1. A small force of 30 Wellingtons of 1 and Training Groups, led by 6 OBOE Mosquitoes and 5 Lancasters, made an attack on the ammunition camp in the Foret de Mormal. There was no photographic evidence of the success of the raid, but one large explosion was reported. All the aircraft returned early.

COLOGNE AND DUISBURG

2. 8 Mosquitoes set out on harassing raids to Cologne and Duisburg, and 5 completed the mission. One aircraft bombed an alternative area and 2 returned early.

MINELAYING

3. 303 mines were laid in enemy waters by 73 aircraft of a total of 89 despatched. All the aircraft returned undamaged.

METEOROLOGICAL FORECAST

4. Estimated midnight position of front: Bremen - just S.E. of Cologne - just N. of Bordeaux.

Bases: fit till 0300 hours, with small amounts of cloud. After 0300 hours, local smoke troubles, with some valley fog.

Germany: probably 10/10ths. layer cloud in Ruhr, with lanes, but a risk of cumulo-nimbus developing up to 30,000ft. en route. Further S.E. and E. a wide belt of thick, medium and low cloud extending above 20,000ft., probably to 30,000ft. with thunderstorms or thundery rain.

Foret de Mormal: small amounts 2-3/10ths. low and patchy medium cloud by 2200 hours. Some cirrus above 20,000ft.

France and Frisians: 5-7/10ths., base 2-3,000ft., and good visibility except in the Gironde Estuary, where 7-10/10ths. cloud at 1,000-1,500ft. is expected, with moderate visibility and risk of slight rain early. After 0100 hours an improvement is expected.

FORET DE MORALLMARKING TECHNIQUE

Route Base - Beachy Head - 50°16'N. 01°32'E. - TARGET -50°28'N. 03°54'E
51°05'N. 02°35'E. - Clacton - base.

Marking Technique

(a) 6 Mosquitoes were to mark the aiming-point with red T.I's, and 5 Lancasters were to back-up the marking with green T.I's, aiming at red T.I's. All T.I's to cascade at 6,000ft.

...../(b) Main force

(b) Main force aircraft were to aim at T.I.'s, preferably the red.

7. Timing Zero hour - 2200 hours Duration of Attack - 2156-2215 hours

Pathfinder Force

6 Mosquitoes from (Z - 4) to (Z + 16), one every 4 minutes.

5 Lancasters at (Z + 1), (Z + 2), (Z + 5), (Z + 6) and (Z + 9).

Main Force

30 Wellingtons from (Z) to (Z + 15).

SORTIES

8. No. of aircraft despatched..... 41
" " reporting attack on primary area..... 36 (67%)
" " abortive sorties (technical or
 manipulative defect.....4)..... 5 (12%)
 (unable to pinpoint.....1)
" " aircraft missing.....NIL

WEATHER EXPERIENCED

9. Target area: 8-10/10ths. thin strato-cumulus, tops 8-10,000ft., with 8/Ka cirrus at about 25,000ft. Very dark. Hazy. No moon.

NIGHT PHOTOGRAPHIC EVIDENCE

10. No night photographs were plotted.

RESULTS OF ATTACK

11. 4 of the 6 OBOE Mosquitoes dropped red T.I.'s accurately, and all the back-up aimed at these markers seen through cloud. The main force also bombed T.I.'s seen through cloud, and one large explosion was reported.

DAYLIGHT RECONNAISSANCE

12. No reconnaissance photographs were taken.

SPECIAL EQUIPMENT

13. OBOE 6 OBOE aircraft were despatched to mark the target. 4 carried out the task successfully, and 2 returned early owing to OBOE failures.

ENEMY DEFENCES

14. Flak and Searchlights Heavy flak and searchlights were in operation on the enemy coasts, but none of the aircraft was damaged.

15. Fighters 4 interceptions of enemy aircraft were reported, but no attack developed.

CASUALTIES

16. One Mosquito was damaged on landing, when the undercarriage collapsed. The remainder of the force returned undamaged.

COLOGNE AND DUISBURG

17. 4 Mosquitoes were despatched to Cologne and 4 to Duisburg. 3 of the former and 2 of the latter were successful, but no result was observed. One aircraft bombed a searchlight concentration on Walcheren or Noord Beveland, and 2 returned early owing to technical defects.

MINELAYING

18. Frisian Islands 54 aircraft were despatched to the Frisian Islands and S. Texel. 40 of these laid 202 mines successfully. 13 sorties were abortive owing to GEE fading and the bombs of another aircraft hung up. All the aircraft returned undamaged.

19. Western France 15 aircraft were despatched to lay mines off La Pallice and in the Gironde Estuary. 13 completed the task, laying 61 mines. One planted its mines wild, and another was lost without trace.

20. N.W. France 20 Wellingtons laid a total of 40 mines off St. Nazaire, Brest and Lorient, all returning without damage, although one aircraft was attacked by an enemy fighter.

EMO/JT.
 EC/S.26342/1/ORS3,
1st. November, 1943.

COLOGNE: DISTRICT: PORT DE MERILL: Midwaying
2/3rd. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	100% REPORTING ATTACK ON		ADAPTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS Tons of Bombs H. E. Inc
				PRIM. ARR.	ALT. ARR.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLK	FIGHTER	NOT F/A	ATTACK- ED	NOT ATTACK- ED	
COLOGNE	B	Hoag. IV	4	3	-	-	1	-	-	-	-	-	-	P. 2.3
DUISBURG	B	Hoag. IV	4	2	1	-	1	-	-	-	-	-	-	P. 1.6
PORT DE MERILL	B	Hoag. IV	6	4	-	-	2	-	-	-	1.0	-	-	P. 72.3 2.9
	B	Lanc. III	5	5	-	-	-	-	-	-	-	-	-	
	1	Well. X	12	11	-	-	1	-	-	-	-	-	-	
	91	Well. Io	6	5	-	-	1	-	-	-	-	-	-	
	92	Well. III	2	2	-	-	-	-	-	-	-	-	-	
		Well. X	4	4	-	-	-	-	-	-	-	-	-	
		Well. III	1	-	-	-	1	-	-	-	-	-	-	
		Well. X	5	5	-	-	-	-	-	-	-	-	-	
PORT DE MERILL TOTAL			41	36	-	-	3	2	-	-	1.0	-	4	
BOMBING TOTAL			49	41	1	-	3	4	-	-	1.0	-	4	

...../Contd:

COLOGNE: DISTRICT: PORT DE MERILL: Midwaying
2/3rd. SEPTEMBER, 1943. (Contd.)

TARGET	GROUP	TYPE	SORTIES	100% REPORTING ATTACK ON		ADAPTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS Tons of Bombs
				PRIM. ARR.	ALT. ARR.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLK	FIGHTER	NOT F/A	ATTACK- ED	NOT ATTACK- ED	
BOMBING TOTAL			49	41	1	-	3	4	-	-	1.0	-	4	
MINE-YIFF														
ST. N. LAURE	1	Well. X	8	8	-	-	-	-	-	-	-	-	-	16 mines
S. TRENK	1	Well. X	3	3	-	-	-	-	-	-	-	-	-	6 mines
GRAND R	1	Lanc. III	5	5	-	-	-	-	-	-	-	-	-	30 mines
LA P. SAIGE	3	Star. III	10	8	-	-	1	1	-	-	-	-	-	34 mines
PRESTON		Star. I	1	-	-	-	1	-	-	-	-	-	-	
		Star. III	14	10	-	-	4	-	-	-	-	-	-	54 mines
		Lanc. II	1	-	-	-	1	-	-	-	-	-	-	
		Lanc. I	1	1	-	-	-	-	-	-	-	-	-	
		Lanc. III	14	14	-	-	-	-	-	-	-	-	-	90 mines
		Hal. II & V	13	6	-	-	7	-	-	-	-	-	-	
		Hal. L	5	4	-	-	1	-	-	-	-	-	-	52 mines
		Lanc. II	2	2	-	-	-	-	-	-	-	-	-	
LOUISOT	6	Well. X	6	6	-	-	-	-	-	-	-	-	-	12 mines
BR SU	6	Well. X	6	6	-	-	-	-	-	-	-	-	-	12 mines
MIDWAYING TOTAL			89	73	-	-	15	1	-	-	-	1	2	303 mines
TOTAL			138	114	1	-	18	5	-	-	1.0	-	6	

Including 40 x 1000 lb. mines.
carried by Halifaxes.

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS3/4th SEPTEMBER 1943BERLIN : Foret de Raismes : Düsseldorf : Minelaying : LeafletsSUMMARYBERLIN

1. Berlin was attacked by a force of 316 Lancasters, with 4 Mosquitoes as "spoof" markers. The target was ground-marked by Y-type aircraft, the T.Is. falling mainly W. and N.W. of the aiming point, in an area which had not previously been seriously damaged. Much industrial damage was caused, mostly in the Siemensstadt/Charlottenburg area, including Siemens and Halske A.G. and Siemens Schuckertwerke A.G., electrical engineers, both of which works were severely hit. At least half of the 20 aircraft missing were shot down by enemy fighters.

FORET DE RAISMES

2. 32 Wellingtons of Training and 6 Groups, led by 6 OBOE Mosquitoes and 6 Halifaxes of the P.F.F., made an attack on the petrol or ammunition dump in the Foret de Raismes. Both marking and bombing were accurate, many aircraft attacking within one mile of the aiming-point. None of the aircraft was lost.

DUSSELDORF

3. 4 Mosquitoes were sent to bomb Düsseldorf; 3 completed the mission and the fourth bombed an alternative target. No damage was sustained by the aircraft.

MINELAYING

4. 56 aircraft were despatched by 3 and 4 Groups to lay mines in the Kattegat, off the Frisian Islands and off the west coast of France. 45 completed the task, laying a total of 165 mines in enemy waters. One aircraft failed to return.

LEAFLETS

5. 7 Whitleys set out to scatter leaflets in northern France. 6 carried out the task successfully, and the seventh failed to return.

METEOROLOGICAL FORECAST

6. Cold front moving very slowly E. and dying out; estimated midnight position Kiel - Hamburg - Dijon.

Home bases: fit for take-off, with varying amounts of strato-cumulus, base 3,000 ft., tops 8,000 ft. with a layer of 7-10/10ths cirro-stratus base about 20,000 ft., tops 25,000 ft. For return, little or no cloud except perhaps for the cirro-stratus layer. Visibility is expected to remain above 2 miles until about 04:00 hours, after which a progressive deterioration will set in. After 05:00 hours visibility below 1,500 yards may be widespread in 1, 5 and E. of Groups, and local in 3 Group, but in general, 50% of the bases in this Command are expected to have visibility above this figure.

Germany: for about 100 miles on either side of the cold front, thick strato-cumulus to 8-10,000 ft. with broken layers of medium and high cloud above. of this belt, good breaks in strato-cumulus are expected. The Ruhr is doubtful since, although the frontal strato-cumulus may clear, considerable amounts of inner cloud may drift in from the North Sea. E. of the belt there may be breaks in the strato-cumulus, which will probably be only 1,500-2,000 ft. thick.

/French and Danish

French and Danish Minelaying areas: no cloud below 2,000 ft.

Route to Berlin: conditions uncertain, but no cloud apart from cirrus is expected above 6,000 ft., till about 10°E., when a layer at medium levels is probable. On return, cloud in various levels is expected over Denmark region. Some cumulo-nimbus probable in E. North Sea, tops not above 12,000 ft. Broken cloud only, further W.

Berlin: 7/10ths cumulus with medium cloud above to a total of 10/10ths. Risk of thick medium cloud, probably not above 15,000 ft., over the target.

	<u>750 mb.</u>	<u>500 mb.</u>	<u>300 mb.</u>
Bases to target	260°/10 mph to light var: < 5 mph.	260°-240°/15 mph.	260°-230°/25-30 mph.
Target to bases	Light var: < 5 mph. - 240°/10 mph.	220°-240°/25-20 mph.	210°-260°/25-40 mph.

BERLIN

PLAN OF ATTACK

7. Route Bases: 52°45'N 03°30'E - Egmond - 52°40'N 09°00' - Brandenburg - TARGET - 52°33'N 13°42'E - 55°55'N 13°25'E - 58°00'N 11°00'E - 57°00'N 06°00'E - Bases.

8. Marking Technique

(a) 10 blind-markers, all Y-type aircraft, and 14 backers-up (including 5 Y-type aircraft) were to drop red spot fires at 52°38'N 08°20'E (8 miles 360°, Dummer See), warning yellow T.Is. on Brandenburg and red T.Is. at 54°32'N 13°34'E (5 miles 120° Bergen, Isle Der Rugen).

(b) Blind-markers equipped with H2S were to mark the aiming point with red T.Is.

(c) Backers-up were to aim green T.Is. to overshoot the estimated centre of red T.Is. or of green T.Is. by 2 seconds.

(d) Main Force aircraft of 8 Group were to aim at the estimated centre of all red T.Is. Half of the rest of the main force were to aim 1/2 mile N. and half 1/2 mile S. of the estimated centre of all T.Is.

(e) If cloud conditions made it necessary, sky-marking flares (rod with green stars) were to be released by all Y-type aircraft manned by qualified crews. The main force was then to aim at the centre of all release-point flares on an exact heading of 086°T. with bombsight set for time, height and airspeed, and zero wind.

9. Timing Zero hour - 2315 hours Period of Attack - 2313-2329 hours

Pathfinder Force

28 Blind-markers at (Z-2)

5 Backers-up (Y-type aircraft) at (Z+4), (Z+6), (Z+8), (Z+10), (Z+12), one at each time given.

6 Backers-up at (Z+1)

16 Backers-up from (Z+2)-(Z+12). alternately 1 minute and 2 minute intervals.

Main Force

26 Lancasters of 8 Group at (Z-2)

244 Lancasters at (Z+2) to (Z+14)

10. Tactics WINDOW was to be dropped at the rate of one packet per minute between 03°40' and 09°30'E and between 12°00'E and 13°30'E. 4 Mosquitoes were to drop white

/drip flares

drip flares from 120°T. 12 nautical miles Berlin on a tack 085°T, at 4 second intervals, as a diversion.

SORTIES

11.	No. of aircraft despatched.....	320*
"	" " " reporting attack on primary area.....	279* (87.2%)
"	" " " " " " alternative area.....	3 (0.9%)
"	" " abortive sorties (technical and manipulative defects.....16) (illness of crew..... 2).....	18 (5.6%)
"	" " aircraft missing.....	20 (6.3%)

* Including 4 Mosquitoes on diversionary attack.

WEATHER EXPERIENCED

12. Home bases: mainly clear skies. Moderate visibility most of the night, with very local mist and fog patches towards dawn.

Route: 10/10ths. cloud, tops 13-20,000 ft., extending over the whole route from the Dutch coast, breaking near Brandenburg, just W. of the target. One report of heavy rime in cloud at 20,000ft. Wind at 20,000ft., 180°-200°/15 mph. On the return 7-10/10ths. cloud began at 10-20 miles N. of Berlin, and extended to N. of Denmark and to 57°N. 06°E., tops 7-10,000ft., locally 13,000ft. Moderate rime and slight static reported over the North Sea. Winds to Denmark: 20-25,000ft. 200°/35-40 mph. Wind over the North Sea: 3-11,000ft. 210°/20-25mph. 20,000ft. 180°/35 m.p.h.

Target: no cloud below aircraft at 16-20,000ft. at beginning, increasing to 5/10ths. at end of attack. 9/10ths. cloud above. Visibility moderate. Winds: 16-20,000ft. 190°-200°/15 m.p.h. No wind during attack.

NIGHT PHOTOGRAPHIC EVIDENCE

13.	No. of photographs with bombing examined.....	212
"	" " " showing ground detail (plotted within 3 miles...9) (" outside 3 miles...78). 92 (unplotted..... 5)	
"	" " " " fire-tracks { plotted within 3 miles... 7 " outside 3 miles...96}. 120 (unplotted.....17)	
	No. of aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming point.....	20
	No. of aircraft estimated from the photographic evidence to have bombed the target area*.....	85

* Excluding the suburban area. The "target area" is as shown on the photographic plot.

NARRATIVE OF ATTACK

14. The majority of the red T.I's appear to have been dropped by the blind-bombers 2 to 5 miles W. to N.W. of the target, but one salvo fell very near the aiming-point and one 2 miles E. The back-up, which arrived late, probably owing to an inaccurate wind forecast, bombed the red T.I's to the W. and a good concentration developed there. The main force, which also arrived late, mainly bombed this concentration, or undershot further E. In consequence most of the bombs fell W. and N.W. of the aiming point, in an area which had not previously been heavily damaged.

NIGHT RECONNAISSANCE

15. Reconnaissance photographs revealed the damage caused in this raid and the attacks on the nights of 23/24th. August and 31st. August/1st. September. The damage in the north and northwest of the city, in the Siemensstadt,/Charlottenburg

Charlottenburg and Wedding areas, may be attributed to the raid of 3/4th. September, and the damage in the S.S.W. in the Schöneberg and Mariendorf districts, to the attack on 23/24th. August. The raid of 31st. August, 1st. September fell S.S.W. of the city centre, mainly on suburban areas and outlying villages.

16. Damage was confined almost entirely to the western half of the city, being heaviest in the Charlottenburg, Schöneberg, Friedenau and Mariendorf districts. Most of the damage appeared to be caused by fire, but several large and many small H.E. incidents were visible.

17. War industries suffered to a considerable extent. The most outstanding damage was to the Siemens works (priority 1+) at Siemensstadt, which are owned by Siemens Schuckertwerke A.G. and Siemens and Halske A.G., and form one of the largest electrical engineering concerns in Germany. Both were severely damaged; 75% of the buildings of the electro-chemical department of Siemens Schuckertwerke were burnt to the ground, and one-third of the rectifier works of Siemens and Halske was gutted, and much other damage was caused to both works. The associated Siemens Cable Works was also affected, though not seriously. Among other highly important electrical engineering works which were severely damaged were (1) the A.E.G. Brunnen Strasse, Wedding, manufacturing submarine engines, motors and generators; (2) the associated A.E.G. Turbine Works at Charlottenburg; (3) 2 works of Ges. Für Elektrische Unternehmungen (machine and precision tools); (4) Oerlikon G.m.b.H. The general engineering works of Berliner Maschinenbau A.G., Daimler-Benz A.G. and Klöckner-Humboldt-Deutz A.G., were also heavily hit. Many buildings of Askania-Werke A.G. at Mariendorf (one of the foremost manufacturers of optical instruments for aircraft) were destroyed by fire and H.E. In addition at least 40 other electrical and engineering firms were affected, several being totally destroyed. About 65 other factories and commercial warehouses were damaged, including the Luftschiffbau Zeppelin G.m.b.H. and Textilwerke A.G. (producing balloon fabric and parachutes) which were completely demolished, 2 oil storage depots seriously damaged, and a great leather warehouse at Schöneberg partly burnt out.

18. Rail communications were not seriously interrupted, but tracks were disrupted and waggons destroyed in and near the Tempelhof marshalling yard, and half the north of the main engine shed was stripped. Station property and rolling stock at 5 goods yards and at 5 passenger stations was destroyed or damaged, and underground railway depot buildings at Charlottenburg and Schöneberg were gutted.

19. 4 gasworks were damaged, the most severely hit being that at Mariendorf, which was the third largest in the city. The Unterspree and Steglitz power stations, the district electric switching station at Schöneberg and a pumping station at Charlottenburg were among important public utilities damaged. The police barracks and a large institution for chemical research at Jungfernheide each had a number of buildings destroyed by fire. About 29 large public buildings were also damaged.

20. A large number of hatted camps, including one large military barracks, was damaged, 350 to 400 huts and buildings being destroyed or damaged. Although there was no very large areas of devastation to business and residential property concentrations of severe damage by fire were visible in the Schöneberg, Friedenau and Steglitz districts, and many H.E. incidents were scattered throughout the S.W. of the central city area.

ALTERNATIVE TARGETS

21. Texel aerodrome, Brandenburg and Braunschweig were bombed by 3 aircraft, and 4 others which also attack Berlin, dropped part of their loads near Brandenburg, Greifswald, Gilhorn and Joachimthal.

SPECIAL EQUIPMENT

22. H2S 27 aircraft were despatched as blind-markers, and 23 of these

...../reported attack.

reported attack. 15 dropped markers using H2S, and 8 dropped H.E. only, owing to unserviceable sets (5), lateness (1), being coned by searchlights during the run-up (1), and failing to pick up the Muggel See on H2S (1). 10 of the blind markers had been instructed to bomb by a range and bearing fix on the Muggel See and the remainder with reference to the P.M. edge of the target. All were to confirm their position by a D.R. run from Brandenburg. This technique produced better results than in the 2 previous raids on Berlin, most of the blind-markers attacking 2-5 miles W. of the aiming-point. One was plotted over the aiming point and another overshot about 2½ miles to the E.

23. 32 aircraft carried H2S for navigational purposes, 24 of these reaching the target with serviceable sets. One bombed blindly on H2S, and another used it to confirm the positions of the marker, before bombing. In all 59 Y-type Lancasters were despatched, of which 53 attacked (42 with serviceable sets), 3 returned early and 3 were lost.

24. GEE The Northern Chain operated on the Utah frequency and the Eastern Chain on the Wyoming frequency throughout the raid. Both Zanesville and Marysville frequencies were transmitted by the Eastern Chain from 21:5 to 23:45 hours. On the outward route heavy interference was reported on all Eastern Chain frequencies, the jamming being of the usual type. No spurious pulses were seen. On the return north of Denmark, the Northern Chain was used, and was not jammed. The Wyoming signals were stronger than those of the other Eastern Chain frequencies, the A. signal on the Zanesville frequency being particularly weak. The A signal was also the weakest on the Northern Chain. Ranges on the outward route were normal, the average navigator being able to take fixes to the Lutch Coast. The Northern Chain worked well on the return, fixes being possible from north Denmark to 56°N., when A faded. The Wyoming frequency was used again S. of 55°N.

ENEMY DEFENCES

25. Flak and Searchlights Ground defences on the outward route were active only at Egmund, Magdeburg and Brandenburg, in each of which places heavy flak was reported, with searchlights at Egmund and Magdeburg. Both at Magdeburg, just outside the WINDOW zones, and at Brandenburg, inside the zone, flak was believed to be predicted. Over the target a moderately intense heavy flak barrage co-operated with large numbers of searchlights, but towards the end of the attack cloud spread over Berlin, and the defences decreased. On the return flak was reported at Swinemunde, Copenhagen and Skagen, and Swedish batteries were also active, their shells bursting well below the bombers. 10 aircraft were hit by flak, mainly over Berlin.

26. Fighters Intercepted wireless traffic indicated that patrols were active in the Gilze, Amsterdam, Deelen, Soesterburg and Enschede areas. 2 aircraft made 9 controlled pursuits in the Amsterdam/Soesterburg area, claiming 2 victories. Later general control operated, and little more was heard. 30 interceptions were reported, including 11 attacks and 14 other combats. 7 attacks occurred over the target area, 3 on the outward route and one on the return. Only 3 aircraft were damaged by fighters.

CASUALTIES

27.	No. of aircraft missing.....	20 (6.3)
	" " " damaged { flak.....10	
	{ fighters..... 3}.....	20 (6.3)
	{ other causes..... 7	

Few observations of falling aircraft were reported, so that no complete estimate of the causes of loss could be made. It is probable, however, that at least 10 bombers fell to fighters, at Egmund, Keppen, Osnabruck (2), Magdeburg, Strasburg and Berlin (4) and 5 to flak in the target area. Non-enemy action damage was caused by incendiary bombs (2), a collision (2), landing accidents (2) and a T.I. which exploded in the bomb-bay.

FORET DE RAISMESPLAN OF ATTACK

28. Route Base - Beachy Head - 50°20'N. 01°33'E - TARGET - 50°27'N. 03°40'E
- 50°10'N. 03°30'E - 50°10'N. 01°33' - Beachy Head - Base.

29. Marking Technique

(a) 6 OBOE Mosquitoes were to mark the aiming point with red T.I's., backed up by 6 Halifaxes with green T.I's. All T.I's to cascade at 6,000ft.

(b) Main force aircraft were to aim at red T.I's if seen, otherwise at estimated centre of all green T.I's.

30. Timing Zero Hour - 2200 hoursPathfinder Force

6 Mosquitoes at (Z-4), (Z), (Z+4), (Z+8) (Z+12), (Z+16).

6 Halifaxes at (Z+1), (Z+2), (Z+5), (Z+6), (Z+9), (Z+10).

Main Force

32 Wellingtons from (Z) to (Z+15).

SORTIES

31.	No. of aircraft despatched.....	44
"	" " " reporting attack on primary area.....	39 (88.6%)
"	" " " " " alternative area.....	1 (2.3%)
"	" " abortive sorties (technical and manipulative defect.....)	1
	{ navigational error.....	1
	{ weather.....	1
	{ illness of crew.....	1
"	" " aircraft missing.....	NIL
		4 (9.1%)

WEATHER EXPERIENCED

32. Target Area: 5-8/10ths. cloud, tops 6,000ft. Moderate visibility. Wind at 12,000ft. 220/15 m.p.h. No moon.

NIGHT PHOTOGRAPHIC EVIDENCE

33.	No. of photographs with bombing examined.....	24
"	" " " showing ground detail { plotted within 1 mile..5	}.. 12
	{ " outside 1 mile..3	
	{ unplotted.....4	
"	" " " " fire-tracks (plotted within 1 mile..8	}.. 12
	{ " outside 1 " ..3	
	{ unplotted.....4	
"	" " aircraft estimated from the photographic evidence to have bombed within one mile of the aiming point.....	22

NARRATIVE OF ATTACK

34. The target was accurately marked by the OBOE Mosquitoes, and the backing-up was almost equally good. The main force bombed accurately, many attacking within one mile of the aiming-point.

...../DAMNIGHT RECONNAISSANCE.

DAYLIGHT RECONNAISSANCE

35. The whole of the Forêt de Raismes was covered on prints of good quality. About 10 craters were seen E.S.E. of a road intersection and a few other craters were seen scattered throughout the forest.

SPECIAL EQUIPMENT

36. OBOE 5 of the 6 OBOE Mosquitoes despatched to mark this target completed the task successfully, but the sixth dropped his T.I. about 7 miles away owing to a manipulative error.

37. H2S The 6 Halifaxes which acted as packers-up carried H2S as a navigational aid, and all reached the target with serviceable sets. None, however, used it as an aid to bombing.

ENEMY DEFENCES

38. Flak and Searchlights Heavy flak was in action at Arras, Cambrai, Valenciennes and Cayeux, and in the target area, and a single searchlight was operating 10 miles S. of the target. The only aircraft which was hit by flak, crashed on the return.

39. Fighters 3 Wellingtons were intercepted, but no attack developed.

CASUALTIES

40. All the aircraft returned, but one Wellington was destroyed owing to flak damage.

DUSSELDORF

41. 3 of 4 Mosquitoes despatched to Dusseldorf carried out a successful harassing raid, the target being bombed on E.H.L. from the last GEE fix. The fourth Mosquito bombed an unspecified target near Brielle owing to a navigational error. All the aircraft returned undamaged.

MINELAYING

42. Kattegat and Alborg 24 Halifaxes and Stirlings were despatched to lay mines in the Kattegat and off Alborg, and 19 of these aircraft laid a total of 52 mines in enemy waters. One Stirling failed to return, and is believed to have crashed in north Denmark, the cause being unknown. 4 sorties were abortive owing to technical defects (3), unable to pinpoint (2).

43. Frisians 15 Stirlings set out to lay mines off the Frisian Islands. 10 completed the task, laying 58 mines, and 5 returned early owing to technical defects.

44. Western France 16 of 17 Stirlings despatched, laid a total of 55 mines off La Pallice and in the Gironde Estuary. One aircraft was caught in searchlights and brought back its mines.

LE PLEYS

45. 7 Whitleys were sent to scatter leaflets over northern France. 6 completed the mission without incident, and the seventh was lost without trace.

RD/JT.
EC/S. 26342/3/ORS,
31st. October, 1943.

3/4th. SEPTEMBER, 1945.

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 R/A	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E.	Inc.	
BERLIN	8 PFF	Mosq. IV	4*	4*	-	-	-	-	-	-	-	-	-	-	P. 562.4	367.7	
		Lanc. III	54	48	3	-	4	1	4	1AC	1B	-	-	-	4. 12.1	-	
		Lanc. III	25	21	4	-	1	3	2	-	1AC	2	-	-	1/4 41.5	27.8	
		Lanc. I	18	17	-	-	1	-	-	-	-	-	4	-	-	Heavy Bombs	4000lb.
		Lanc. III	91	76	-	-	7	8	-	1AC	1-2AC	2	7	-	-	P. 273	-
		Lanc. II	4	4	-	-	-	-	-	-	-	1B	-	1	-	4. 5	-
MAIN FORCE	8 PFF	Lanc. I	19	15	-	-	1	3	1	-	-	-	3	-	M. 20	-	
		Lanc. III	102	91	-	-	6	5	2+1E	1E	1AC	3	13	-	-	-	
		Lanc. II	3	3	-	-	-	-	-	-	-	1	-	-	-	-	
BERLIN TOTAL			320	279	3+4°	-	18	20	9+1E	2+0+1E	1+4AC	11	28				
DUSSELDORF	8 PFF	Mosq. IV	4	3	1	-	-	-	-	-	-	-	-	-	H.E.	-	
															P. 2.3	-	
															4. 8	-	
BERLIN TARGETS TOTAL			324	282	4+4°	-	18	20	9+1E	2+0+1E	1+4AC	11	28				

* Spoof markers outside Berlin.
 ° also attacked Primary.

BERLIN: POINT 101 (NORTH); DUSSELDORF: HIES-PAUL; LE-FLETT: 3/4th. SEPTEMBER, 1945. (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 R/A	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E.	Inc.
GERMAN TARGETS TOTAL			324	282	4+4°	-	18	20	9+1E	2+0+1E	1+4AC	11	28			
PORT DE RAISMES	8 PFF	Mosq. IV	5	4	1	-	-	-	-	-	-	-	-	-	P. 73.9	3.5
		Mosq. IX	1	1	-	-	-	-	-	-	-	-	-	-	4 T.I.	(250lb.)
		Hal. LA	6	6	-	-	-	-	-	-	-	-	-	-	-	-
		Well. X	8	8	-	-	-	-	-	-	-	-	-	-	-	-
		Well. III	5	5	-	-	-	-	-	1E	-	-	-	-	-	-
		Well. X	3	2	-	-	-	1	-	-	-	-	-	-	-	-
PORT DE RAISMES TOTAL	8 PFF	Well. III	8	6	-	-	2	-	-	-	-	-	2	-	-	
		Well. Ia	4	4	-	-	-	-	-	-	-	-	-	1	-	
		Well. III	2	2	-	-	-	-	-	-	-	-	-	-	-	
Well. X	2	1	-	-	1	-	-	-	-	-	-	-	-	-		
PORT DE RAISMES TOTAL			44	39	1	1	3	1E	-	-	-	-	-			
BOOMBING TOTAL			368	321	5+4°	1	21	20	9+2E	2+0+1E	1+4AC	11	31			

° also attacked Primary.

...../Contd.

BERLIN: POINT 101 (NORTH); DUSSELDORF: HIES-PAUL; LE-FLETT: 3/4th. SEPTEMBER, 1945. (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 R/A	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E.	Inc.
BOOMBING TOTAL			368	321	5+4°	1	21	20	9+2E	2+0+1E	1+4AC	11	31			
MINLAYING																
MINLAYING		Stir. III	9	7	-	-	1	1	-	-	-	-	-	-	21 mines	-
KATTEGAT	4	Hal. IIAV	3	1	-	-	2	-	-	-	-	-	-	-	-	-
		Hal. IA	9	8	-	-	1	-	-	-	-	-	-	-	22* mines	-
AALBORG	3	Stir. III	3	3	-	-	-	-	-	-	-	-	-	-	9 mines	-
FRIELANG	3	Stir. I	1	1	-	-	-	-	-	-	-	-	-	-	-	-
		Stir. III	14	9	-	-	5	-	-	-	-	-	-	-	58 mines	-
GRONDE	3	Stir. III	13	12	-	-	1	-	-	-	-	-	-	-	41 mines	-
LA PALICE	3	Stir. III	4	4	-	-	-	-	1	-	-	-	-	-	14 mines	-
MINLAYING TOTAL			56	45	-	-	10	1	1	-	-	-	-	-	165 mines	-
LE-FLETT																
DREUX	91	Whit. V	1	1	-	-	-	-	-	-	-	-	-	-	-	-
HEVREUX	91	Whit. V	1	1	-	-	-	-	-	-	-	-	-	-	-	-
HEVREUX	91	Whit. V	1	1	-	-	-	-	-	-	-	-	-	-	-	-
ORLEANS	91	Whit. V	4	3	-	-	-	1	-	-	-	-	-	-	-	-
LE-FLETT TOTAL			7	6	-	-	-	1	-	-	-	-	-	-	-	-
TOTAL			431	372	5+4°	1	31	22	10+2E	2+0+1E	2+4AC	11	31			

° Also attacked Primary.

* Including 8 x 1000.

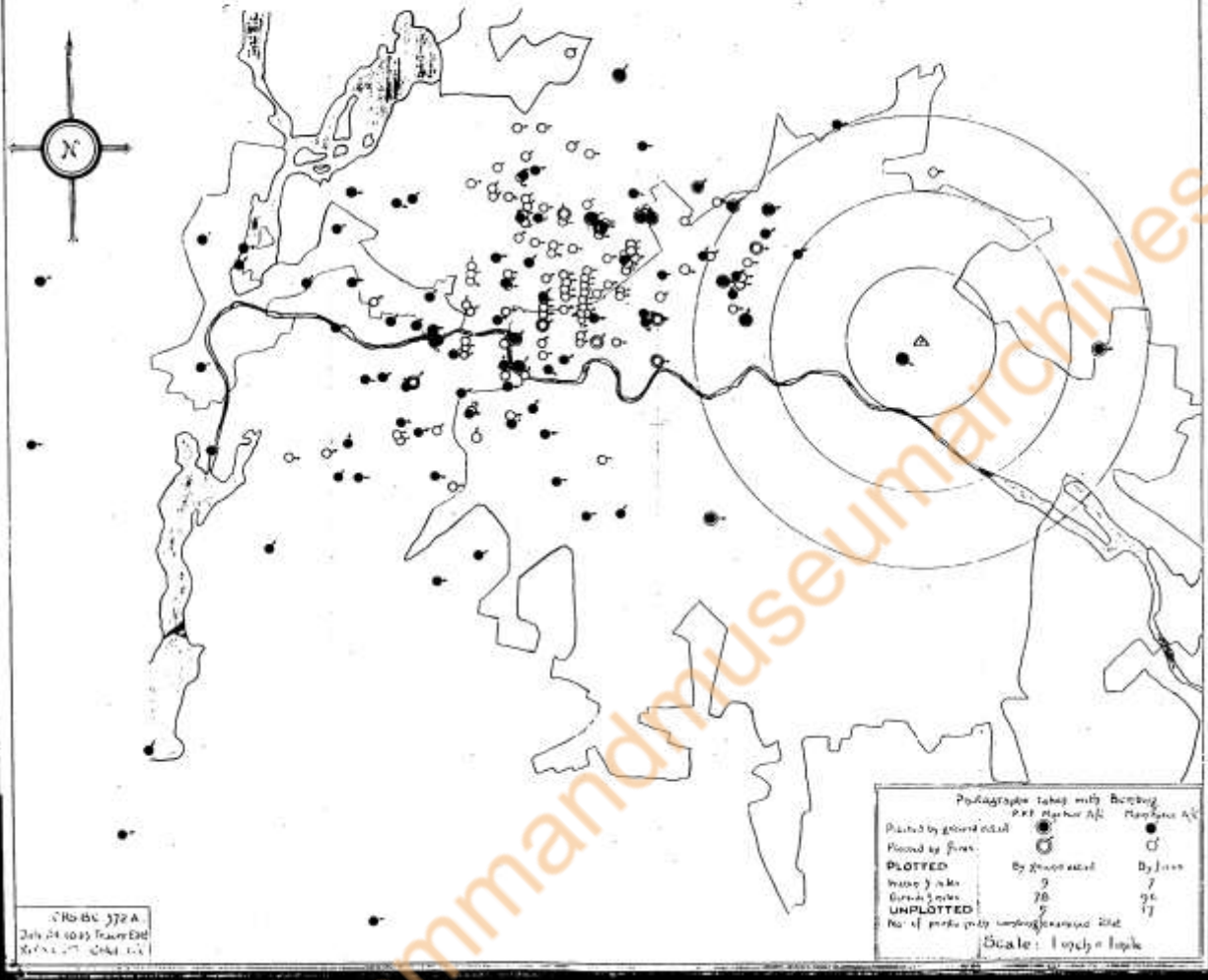
FINAL PLOT OF NIGHT PHOTOGRAPHS

12

TAKEN 3/4th SEPTEMBER 1943

TARGET: BERLIN

SECRET

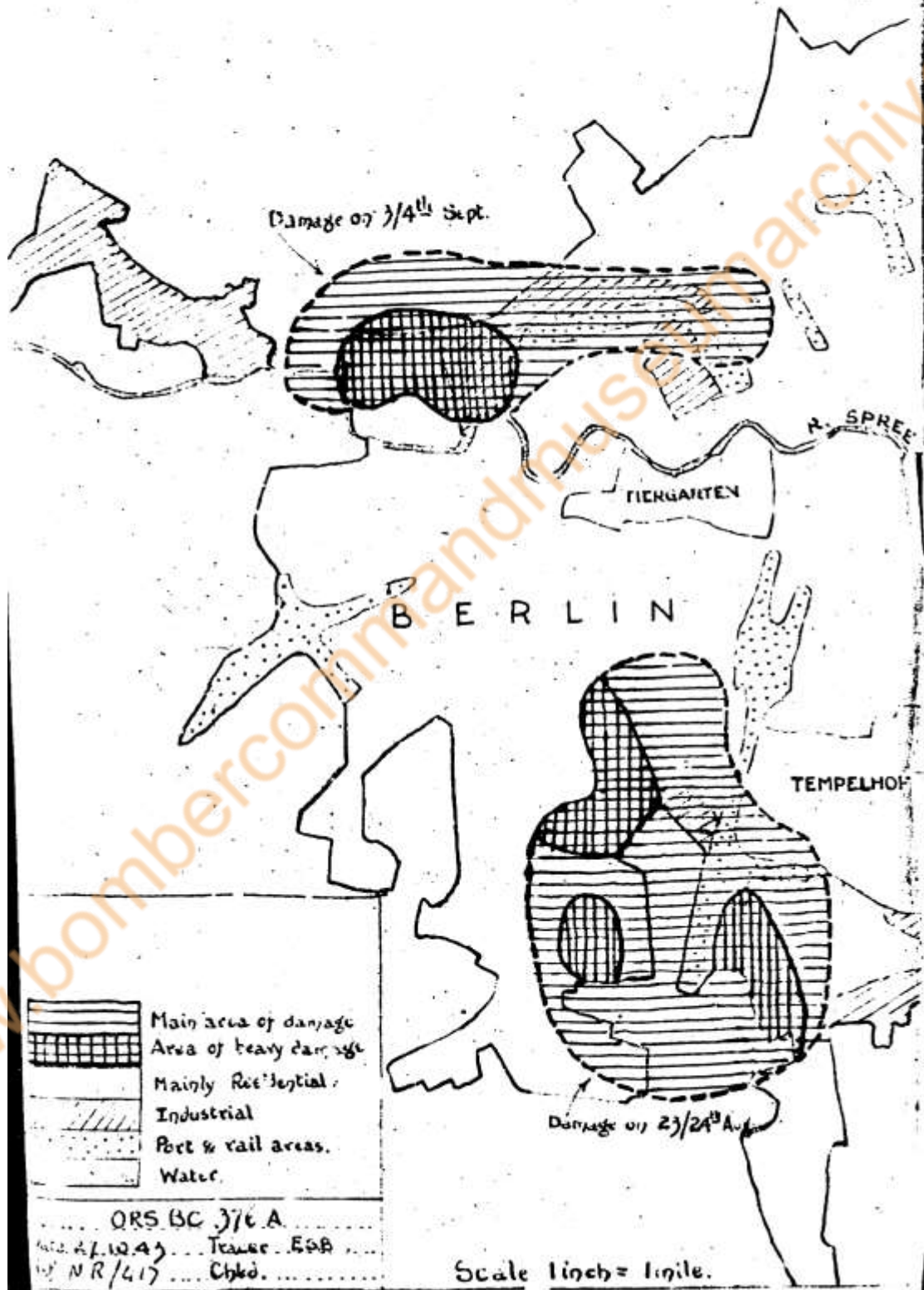


CR 80 372 A
 Date 24 10 43 T. 1000
 20 24 10 43 T. 1000

www.bombercommandmuseumarchives.ca

DIAGRAM SHOWING LOCATION OF ATTACK 11
AS SHOWN BY DAMAGE
BERLIN 23/24th AUG., 3/4th SEPT. 1943.

SECRET



	Main area of damage
	Area of heavy damage
	Mainly Residential
	Industrial
	Port & rail areas.
	Water.

ORS BC 376 A
 Date 27.10.43 ... Team ... ESB
 NR/417 ... Chkd.

Scale 1 inch = 1 mile.

www.bombercommandarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS

4/5th. SEPTEMBER, 1943.

Duisburg: Cologne: Minelaying:

SUMMARY

Duisburg: Cologne.

8 P.F.F. Mosquitoes were despatched on harassing raids - 4 to Duisburg and 4 to Cologne. 3 aircraft attacked the former and 2 the latter town, the remainder abandoning their task for technical reasons. All returned undamaged.

Minelaying

34 Wellingtons and Stirlings laid 103 mines off the Frisians and the French Atlantic ports. 4 others returned early with GEE failure. Several fighters were seen, but no combat resulted, and no losses or damage were suffered, apart from one minor hit from flak.

WEATHER FORECAST

Bases: front will lie at midnight from Abbotsinch to St. Athan's, moving slowly E. Slight rain from medium cloud may reach 6 Group by midnight, or even earlier, and 4, 5 and Training Groups may also be affected, but even there, conditions will be fair, with moderate to good visibility and cloud base nowhere below 1,500', except very locally over high ground. East Anglia: broken medium cloud, moderate visibility.

Continent: E. of 08°E., much thick medium cloud, with low cloud beneath and thundery rain; chance of clearance to 8/10ths. strato-cumulus at 6-7,000'. W. of 08°E., good breaks in strato-cumulus, with some patchy medium cloud above. W. Fr. base 2,500', tops 6,000'.

W. France: 7-10/10ths. strato-cumulus, base 1,500' or lower, at Brest. W. coast: small amounts of low cloud only.

Frisians: well broken cumulus and strato-cumulus, base 2,500', tops 6,000'.

STATISTICS

Duisburg, Cologne Minelaying

(a) No. of aircraft despatched.....	4	4	38
(b) " " reaching primary area.....	3	2	34
(c) " " abortive sorties (tech.defect).....	1	2	4
(d) " " aircraft missing.....	0	0	0
(e) " " mines laid.....			103

WEATHER EXPERIENCED

Duisburg: no cloud. Slight haze. Good visibility.

Cologne: 0-3/10ths. medium cloud, tops 10-15,000'. Haze. Good visibility.

W. France: no cloud. Haze. Good visibility.

Frisians: 2-3/10ths. strato-cumulus, tops 2,000'. Patchy alto-stratus, base 6-7,000'. Much haze. Fair visibility.

NO MORE

...../.....

ENEMY DEFENCES

6. Enemy fighter reaction was on a very small scale; a few were seen, but there is no evidence that controlled aircraft made any contact with the bombers or minelayers. Mosquitoes reported very little flak from their targets; minelayers were engaged from known defended areas in the Bay of Biscay, and also at Vannes and Heligoland. One minor hit was sustained.

CASUALTIES

7. All our aircraft returned safely. One was slightly damaged by flak.

MLM/JT.
BC/S.263,2/1/ORS3,
1st. November, 1943.

TARGET	GROUP	TYPE	SORTIES	✓/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	ENEMY			DEFENCES		RESULTS	
				PRIM. AREA	SEC. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER E/A	NOT E/A	ATTACK- ED	NOT ATTACK- ED	Tone of Bombs H.E.	
DUSSELDORF	8 PPF	Mosq. IV	4	3	-	-	1	-	-	-	-	-	1	P.	2.3
COLOGNE	8 PPF	Mosq. IV	4	2	-	-	2	-	-	-	-	-	-	P.	1.6
BOMBING TOTAL			8	5	-	-	3	-	-	-	-	-	1		
NIMBLEYNE ST. M. LAITRE	1	Well. X	8	8	-	-	-	-	1	-	-	-	-		16 mines
LORENT	1	Well. X	8	8	-	-	-	-	-	-	-	-	-		16 mines
GROGHE R	3	Stir. I	1	1	-	-	-	-	-	-	-	-	1		31 mines
PRIESTS	3	Stir. III	5	5	-	-	-	-	-	-	-	-	-		30 mines
	6	Well. X	9	5	-	-	4	-	-	-	-	-	1		30 mines
NIMBLEYNE TOTAL			38	31	-	-	4	-	1	-	-	-	3		103 mines
TOTAL			46	39	-	-	7	-	1	-	-	-	4		

BOMBER COMMAND REPORT ON NIGHT OPERATIONS

5/6th. SEPTEMBER, 1943.

MANNHEIM/LUDWIGSHAVEN: Dusseldorf: Minelaying:SUMMARYMANNHEIM/LUDWIGSHAVEN

The twin towns of Mannheim and Ludwigshaven, on the middle reaches of the Rhine, were the target for one of the most successful H2S attacks yet delivered. In cloudless conditions the blind and visual markers achieved a remarkable concentration of T.I. within a mile of the aiming-point, and the backers-up and decentrers, by slightly overshooting, arrested the usual tendency to creep back along the line of approach. Very severe destruction was spread throughout both towns, involving many factories of the highest priority and disrupting the rail and river facilities which make Mannheim one of the most important transport centres in Germany. The enemy's fighter system became completely disorganised, many aircraft being ordered to other targets even after the main attack had started. We lost 34 bombers, but destroyed at least 11 enemy fighters.

DUSSELDORF

4 Mosquitoes carried out a harassing raid on Dusseldorf; all returned safely, although all were hit by flak over the target.

MINELAYING

18 Wellingtons laid 35 mines off the Prisians, in Hegiloland Bight, and off the Dutch coast and the French Atlantic ports. 7 others returned early. None was lost.

WEATHER FORECAST

Bases: Cold front will pass eastwards across England, flying at 2100 hours on Wash to Southampton and at midnight from 55°N. 03° E. to Yarmouth to Cherbourg; all operational areas except the extreme east of 3 Group should be clear by 2300 hours. Considerable amounts of medium cloud will result, but this should be covered with good breaks in the upper layers. At dusk, cloud base will be at 1000 to 1,500 ft. with light rain. All Groups should be fit for late return, apart from local smoke in 4 and 6 Groups. Diversions to S. coast and 91 and 92 Gps.

Germany. An area of low and medium cloud is expected to persist over E. and central Germany, moving very slowly westwards and affecting the Berlin area tonight. Very good chance of clear skies in extreme S. and S.W. Munich: risk of strato-cumulus drifting over from E. Mannheim: excellent chance of no cloud. Visibility moderate at both targets. Ruhr: medium cloud layers above 10,000ft., with broken strato-cumulus below; total amount 7-10/10ths. Cold front to be passed in Channel area, en route to S. Germany, with main cloud tops 11,000ft. only isolated tops to 14,000ft.

Prisians: Well broken strato-cumulus above 2,000ft., medium layers above 10,000ft. Moderate visibility. Front will have to be crossed between 01° E. and 03° E., and cloud will drop to 500 ft. or below in rain.

W. France: Broken strato-cumulus at 1,500 ft. Good visibility.

...../Winds to S.W. Germany.

Winds to S.W. Germany:

	<u>750 mbs.</u>	<u>500 mbs.</u>	<u>300 mbs.</u>
Bases - 51°N	220°/35 mph.	210°/80-85 mph.	220°/100 mph.
51°-49°N	220°/50 mph.	220°/75 mph.	220°/85 mph.
49°N - 09°E	240°/15 mph.	240°/30 mph.	250°/35 mph.
09°E - Mannheim	250°/5-10 mph.	280°/15 mph.	300°/40 mph.

Northern bases at 300 mbs. may be 120 mph.

MANNHEIM/LUDWIGSHAVEN

PLAN OF ATTACK

5. Route Beachy Head - 49°52'N 04°00' - 49°37'N 03°00' - Target-49°19'N 08°30'E - 49°37'N 03°00'E - 49°52'N 00°40'E - Beachy Head - (Except for blind markers, visual markers and Main Force aircraft of No. 8 Group : 49°37'N 03°00'E - Kaiserslautern - target).

6. Technique and Marking

(i) 9 blind markers and 10 backers up were to mark the outward route with T.I. red 5 miles due S. of Luxembourg and the homeward route with red spot fires dropped 12 miles S. of the same town. Approach to the target was to be from the east. ??

(ii) 24 Blind marker illuminators (Y-aircraft) were to mark the target with T.I. red, after a carefully timed run from Kaiserslautern, at Z-4 and to illuminate it with sticks of 4x4 flares, the first bundle of which was to be dropped 10 secs. before the T.Is. The second flare bundle was to be dropped in salvo with the T.Is. and the two others at 6 sec. intervals thereafter.

(iii) 7 Visual markers were to mark the exact aiming point with T.I. yellow and green after visual identification, or if unable to identify with certainty, revert to backers-up, dropping T.I. green only. Flares carried could be used at the captain's discretion.

(iv) Backers up were to maintain the marking with T.I. green aimed at (i) T.I. yellow or (ii) estimated centre of T.I. green, (iii) estimated centre of T.I. red; overshooting by 2 seconds in either of the last 2 instances. Recenters, equipped with H2S were to follow with more T.I. green, joining the backers up if their equipment was not in order. All qualified Y-crows were to carry 1 flare (red/green stars), in case the emergency sky-marking technique was adopted.

(v) Main Force aircraft were to aim at the centre of T.I. green, with 1 sec. overshoot, except aircraft of 8 Group, which were to aim at the centre of T.I. red, or at the aiming point itself, if it could be visually identified.

7. Timing Zero hour : 2300 hours Duration of attack : 2256 to 2336 hrs

Blind Markers

24 aircraft at Z-4

Visual Markers

7 aircraft at Z-3

(No T.I. yellow to be dropped after Z+2)

Recenters

7 aircraft from Z+12 to Z+30
(1 every 3 minutes)

Main Force

8 Group (25 Lanc.+ 8 Hal.) at Z+4

1st wave (71 Lanc.-best crews) at Z+2 to Z+7

2nd wave (61 Lanc.+ 26 Hal.) at Z+7 to Z+13

3rd wave (106 Stir.) at Z+13 to Z+20

4th wave (68 Lanc.) at Z+20 to Z+25

5th wave (87 Hal.) at Z+25 to Z+31

6th wave (75 Lanc.) at Z+31 to Z+36

/Backers up

Backers up

6 aircraft at Z+1

4 aircraft at Z+2

25 aircraft from Z+3 to Z+32

(1 each minute, except at recentre times)

(2 at Z+9 and at Z+16)

- 8. WINDOW Rate of discharge : one bundle per minute
Zones : 0300 - 0530E : 0700E to target and back 0535-0300E.

SORTIES

9.	No. of aircraft despatched	605
	No. of aircraft reporting attack on primary area	512 (84.7%)
	No. of aircraft reporting attack on alternative area	8* (1.3%)
	No. of abortive sorties (technical defect or (manipulative error 46) (sickness of crew 5)	51 (8.4%)
	No. of aircraft missing	34 (5.6%)
	(Plus 2 aircraft which also attacked the primary.)	

WEATHER EXPERIENCED

10. Bases: Fit all night, with little cloud and moderate visibility.
Route: 10/10ths layer cloud over Channel, tops 10-12,000 ft. persisted to 05° E., with occasional tops to 15-18,000 ft. E. of 05° E., cloud broke rapidly to nil, except for patches of cirrus. Similar for return, but cloud belt about 30 miles further E. Light icing and some static in cloud tops.

Mannheim: No cloud. Slight haze. No moon. Visibility good.
Surface wind : light S.E.'ly.
Winds: Channel - 220°/50-60 mph.
- to 03 E. - 220°/70-80 mph.
- to target - 240°-250°/45-50 mph., decreasing to 35-40 mph.

NIGHT PHOTOGRAPH STATISTICS

11.	No. of photographs examined	451
	No. of photographs showing (plotted within 3 miles 101) ground detail (plotted outside 3 miles ... 34)	155
	(unplotted 20)	
	No. of photographs showing (plotted within 3 miles 195) fire tracks (plotted outside 3 miles ... 1)	296
	(unplotted 100)	
	No. of aircraft reporting attack	512
	No. of aircraft estimated to have bombed within 3 miles	380

NARRATIVE OF ATTACK

12. The blind-markers dropped their flares and T.I. with extraordinary accuracy, 5 of the 6 which have been plotted bombing within 1½ miles of the aiming point. The visual markers found it brilliantly illuminated and marked it closely with their green and yellow T.I. Backing-up started at zero+1, as soon as the last yellow was down. Their first greens were placed close to, but slightly to the S. of the yellow, so that by zero+5 there was a remarkable concentration of T.I. within a mile of the aiming point. By zero+11, 111 main force aircraft had attacked and incendiaries were burning over an area of 4x3 miles, covering almost the whole of Mannheim and Ludwigshaven, with very little stray bombing outside.

13. In the second stage of the attack, from zero+12 to zero+40, 18 further /salvoes

salvoes of T.I. green were dropped by backers-up and re-centrers, and 337 main force aircraft attacked. Many of the green T.I. overshot the aiming-point by 2-3 miles, with the result that the attack, instead of drifting back along the line of approach, tended to spread slightly to the E. There was also a slight movement to the S., but the main weight of the attack remained on the built-up area. A photograph plotted near the aiming point at zero+33 showed large clouds of black smoke billowing up from the target, such as are rarely seen except on the most concentrated OBOE raids.

14. From the tactical point of view, this raid was a model of all that a Newhaven attack should be. Owing to the fact that all blind-markers not absolutely positive of their position refrained from dropping markers, an exceptional concentration of red T.I. and flares was achieved. The technique of dropping the first flare 10 seconds before the T.I. was successful, and the backers-up and re-centrers, by bombing beyond the aiming point, arrested any tendency to creep back. There was very little loose bombing by the main force, probably less than 10% of the bombs falling outside the main area of attack. It is estimated that about 42% of bombs landed on the vulnerable area of the target.

DAY RECONNAISSANCE

15. Photographs taken on 9th September covered the twin towns of Mannheim/Ludwigshaven for the first time since the heavy raid of 9/10 August. No attempt has been made to separate the damage for each attack. Very severe destruction was revealed throughout the target, especially in the S. districts of both towns and suburbs lying away to the S.E. The fully built-up areas have been more than 46% destroyed or severely damaged, including the D-shaped old city of Mannheim (the business and administrative centre), the metropolis of Ludwigshaven on the other side of the Rhine, and residential districts in Schwetzingenstadt, S.E. of the old town, and Nockarstadt, over the river Neckar to the N.E. The importance of Mannheim lies in its industries, which are chiefly concerned with chemicals and engineering, and in the fact of its being one of the main transport centres of Germany with extensive river docks and marshalling yards. Over 50 industrial concerns were affected, many of these being of the highest priority. The largest and most significant is the chemical plant of I.G. Farbenindustrie, which extends for over 3 miles along the river bank N. of Ludwigshaven. Considering the size of the works, the damage was slight, affecting 3 or 4 processing shops and a number of stores, offices and unidentified buildings. Far more seriously hit was the heavy engineering plant of Heinrich Lenz A.G., engaged in the production of tank components and agricultural and army tractors. This factory, which covers an area of 112 acres, was damaged in both raids, and every building was damaged, some being completely destroyed. Associated with this plant in the production of tank and tractor components is the smaller works of Joseph Voegelé A.G., not a building of which escaped undamaged. At least 9 of the other factories were engaged on engineering work, including the Motorenwerke Mannheim A.G., and Sulzer Bros., who make Diesel engines for submarines and warships, and Brown Boveri & Co. makers of electrical machinery. Six others were concerned with chemical products, notably Gebr. Giuliniwerk, Raschig A.G., and Kali Chemie A.G., all manufacturing vital war material.

16. Transport facilities, both by rail and river suffered grievously. Being at the confluence of the Rhine and Neckar at a point where the Rhine is still navigable for the larger type of barges, Mannheim and Ludwigshaven enjoy considerably transshipment traffic between the river and railways and the dock area contains a vast number of warehouses. Very many of these in the inland dock at Ludwigshaven and in the Muhlau, Inner and Neckar docks at Mannheim were destroyed and some were still burning 3 days after the last raid. Railway facilities also sustained crippling damage, for the main railway station at Mannheim was gutted and that at Ludwigshaven partly destroyed, while rolling stock, goods sheds, locomotive depots and railway tracks at the important marshalling yards on both sides of the Rhine were damaged by fire and H.E. The buildings of 3 suburban stations were gutted, and very little remained of the large railway repair workshops at Ludwigshaven.

17. Public utility services escaped comparatively lightly. Neither the main power station nor the two gasworks was affected, but a small electricity works in Ludwigshaven was slightly damaged, and the slaughterhouse, the municipal milk depot and the water tower which was a characteristic feature of the old town were partly demolished. Numerous huts of military and labour camps were burnt out, and several blocks of the old Kaiser Wilhelm Barracks destroyed or damaged. Besides considerable business and residential property, many schools, churches, theatres, law courts, post offices and administrative buildings suffered, including the Schloss, the old castle by the Rhine bridge, which was a library, museum and art gallery.

ALTERNATIVE TARGETS

18. Eight aircraft resorted to alternative targets in the areas of Grunstadt, Clerus, Remelling, Lingen, Saarbrucken, Worms, Mezieres and Luxembourg. Two other aircraft jettisoned bombs at Formeric and Kaiserslautern before reaching the target.

SPECIAL EQUIPMENT

19. H2S 82 Y-aircraft were despatched : 24 blind markers, 7 reconcentrers and 51 main force aircraft, carrying H2S for navigational purposes only. 22 of the blind markers reported attack, 10 dropping T.I. (all blindly) and 15 releasing flares. Their bombing was fairly well timed and exceptionally accurate. 6 reconcentrers attacked (5 on H2S) with equal effect. 36 main force aircraft reached the target with their sets in working order, and 5 used them to confirm the accuracy of the T.I. 7 sorties were abortive and 3 Y-aircraft were lost.

20. GEE The Southern Chain operated on the Carolina frequency throughout, and the Eastern Chain on the Wyoming frequency throughout and on the Arizona and Genesville frequencies from 2100 to 0200 hours. Interference was reported on all frequencies, being heaviest on the Wyoming; it was most intense north of Paris. The Southern Chain was the weakest signal on both chains, and the Arizona frequency gave the best results. Ranges were about normal for this route.

REFERENCES

1. Flak and Searchlights Moderate flak was encountered from various points on route, including Dieppe, Amiens, St. Quentin, Rheims, Luxembourg, Trier, Saarbrucken, Worms and Neustadt. Searchlights were reported only in German towns. Over Mannheim, an intense barrage of heavy flak was raised at the beginning of the attack, soon ceasing for the benefit of the fighters and then increasing again towards the close of the raid. 100-150 searchlights were operative in a ring around the town, without operating effectively with the guns. Only 21 aircraft (3.5%) were damaged by flak.

2. Fighters Intercepted wireless traffic presented an unusually puzzling picture on this night. The following are instances of the paradoxical behaviour of enemy wireless control:

- (a) One controller reported 2 waves of bombers, one over Metz and the other E. of Kitzingen (70 miles E. of Mannheim) at a time when our bombers, in one continuous stream, were just approaching the target.
- (b) 7 minutes earlier, British aircraft had been reported near Mannheim.
- (c) At zero hour, bombers were said to be nearing Nuremberg.
- (d) 9 minutes after zero hour, one controller was ignorant of the identity of the main target.
- (e) 17 minutes after zero hour, one group of fighters was ordered to Nuremberg.
- (f) 34 minutes after zero hour, flares were stated to have been dropped over Nuremberg although, as far as is known, none of our bombers flew

/more

more than a few miles E. of Mannheim.

(g) While the last bombs were being dropped, it was announced that Mannheim was being attacked, and all fighters were ordered there.

(h) One minute later, bombers were reported over Mannheim and Nuremberg.

(i) 8 minutes after the close of the raid, the attack on Mannheim was "easily recognisable".

(j) Half an hour after the end of the bombing, further attacks were reported.

23. It is possible that some delayed action bombs gave the impression that the attack was still continuing after it had actually ceased. Also, there appeared to be some effort to use code names - a precaution which had been relaxed on previous nights - and the controllers may have found difficulty in giving speedy instructions; alternatively, the instructions themselves may have formed part of a code system, although it is not easy to see how this could have been operated.

24. G.C.I. provides another problem. Only 6 pursuits were heard, 4 in France and 2 over Mannheim, and none of these appear to have been successful; but returning crews reported 26 combats outside the target area, including 13 attacks a proportion high enough to suggest that G.C.I. must have been in use. If the German controller's instructions had been carried out to the letter, very few fighters should have been met on route and fewer still over the target; but actually, 33 combats, including 15 attacks were reported over Mannheim, and the total number of combats is not significantly below average. 15 aircraft were damaged by fighter.

CASUALTIES

25.	No. of aircraft missing	34 (5)
	(flak	18)
	No. of aircraft damaged (fighter	15)
	(non-enemy action .. 12)	45 (7)

26. Crews' observations of shoot-downs are a further illustration of the peculiarities of the fighter activity during this raid. Intercepted wireless traffic suggested that the enemy had planned, as usual, to concentrate a large number of fighters over the target, but as many as 11 bombers seem to have been shot down in the Saar Basin and around Kaiserslautern. This is the more surprising, since many of the free-lance fighters were sent E. of Mannheim. It is of further interest that, although 6 controlled pursuits were overheard, 4 in France and 2 near Mannheim, none of these led to a combat, and the average number of vectors given was only 2½. Over Mannheim, where free-lance fighters were presumably operating, at least 10 aircraft were destroyed by enemy aircraft during the later stages of the raid, and at least 5 by flak. There is no evidence of any flak successes elsewhere.

27. Crews claimed the destruction of 11 fighters; and altogether, 14 enemy aircraft were observed to have been shot down in combat. Only 4 of these agreed with British claims.

DUSSELDORF

28. 4 Mosquitoes were sent on a harassing raid to Dusseldorf. All attacked target, which was clear of cloud apart from a few patches up to 12,000', on D. runs from GEE fixes. Fairly intense flak was encountered, and all the aircraft were hit; but all returned safely, with only slight damage.

/MINELAYING

MINELAYING

29. 18 Wellingtons laid 35 mines off the Frisians, in Heligoland Bight, and off the Dutch coast and the French Atlantic ports. 7 others returned early. One aircraft was damaged by flak, which was experienced from the usual points, but none was lost. No fighters were observed.

MLM/ETA
BC/S.26342/3/ORS3
31st October, 1943.

CORRIGENDUM

Night Raid Report No. 416, SUMMARY, para. 1, last word. For "early" read "safely".

5/6th. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENERGY TERR.	NOT OVER ENERGY TERR.		FLAK	FIGHTER	NOT R/A	ATTACKED	NOT ATTACKED	Tons of Bombs	
KUNDEHEIM	8 FFP	Hal. IA	14	12	1 ^o	-	1	-	1	-	-	-	-	-	P. 737.3, 802.9 A. 14.8, 10.1 M. 35.2, 10.2
		Lanc. III	56	52	1+1 ^o	-	1	2	2	-	1	1	3	-	
	8 MAIN FORCE	Hal. IA	2	2	-	-	-	-	-	-	1	-	-	-	Heavy Bombs 8000lb. 4000lb.
		Lanc. I Lanc. III	10 20	7 48	- -	- -	2 1	1	2	-	-	1 2	3 3	-	
	1	Lanc. I Lanc. III	17 85	14 78	- -	- -	1 5	2	-1	1+1AC	-	-	3 2	-	P. - 261. A. - 6 M. - 13
		3	Stir. I Lanc. II	2 6	2 4	- 1	- -	1 1	8	3+1B +1E	2+2AC +1B +1E	3+1AC +1E	8	12	
	4	Hal. IIAV Hal. IA	62 58	49 51	1 -	2 -	5 2	5	2	1B	-	2	7	5	-
		5	Lanc. I Lanc. III	20 88	15 75	1 1+1 ^o	- -	3 6	1	2	-	1+1AC	2+1E	4	15
	6		Hal. IIAV Hal. IA Lanc. II	33 16 6	27 13 6	1 - -	- -	3 2 -	2	1	-	1	3	2	5
		KUNDEHEIM TOTAL			605	512	8+2 ^o	4	47	34	16+1B +1E	8+1AC +1AC +2B	9+1AC +2E	33	65

* Also hit by flak.
^o Also attacked Primary.

MUNSTER: DISSEMINATED: 15-11-43
 5/6th. SEPTEMBER, 1943. (Contd.)

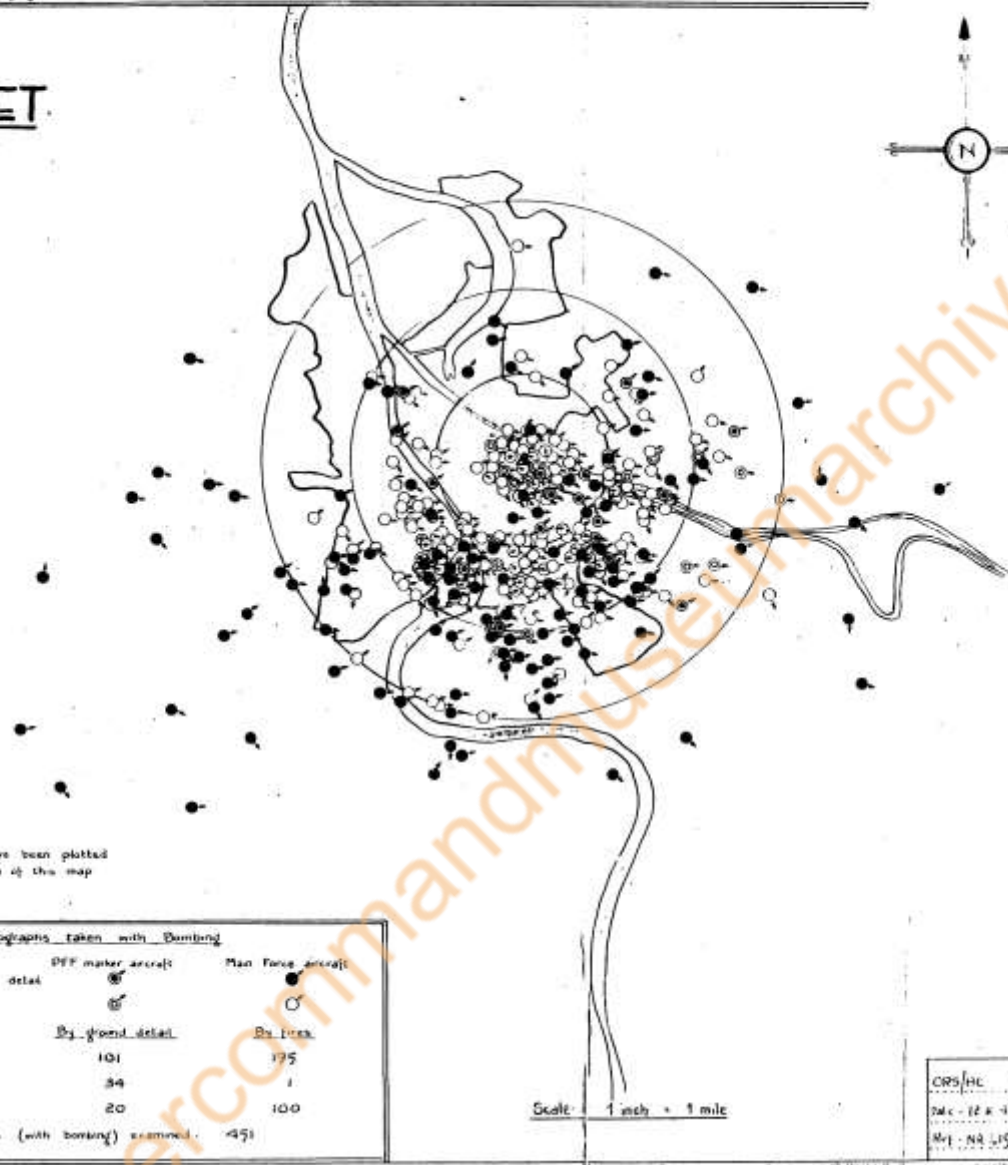
TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA	ALT. AREA	OVER ENERGY TERR.	NOT OVER ENERGY TERR.		FLAK	FIGHTER	NOT R/A	ATTACKED	NOT ATTACKED	Tons of Bombs
KUNDEHEIM TOTAL			605	512	8+2 ^o	4	47	34	16+1B +1E	8+1AC +1AC +2B	9+1AC +2E	33	65	
MUNSTER	8 FFP	Mosq. IV	4	4	-	-	-	-	4	-	-	-	-	P. 3.1
BOMBING TOTAL			609	516	8+2 ^o	4	47	34	20+1B +1E	8+1AC +1AC +2B	9+1AC +2E	33	65	
MINNEAPOLIS	1	Well. X	8	3	-	-	5	-	-	-	-	-	-	6 mines
INDIANAPOLIS	1	Well. X	4	3	-	-	1	-	-	-	-	-	-	6 mines
S. of TOPEKA	1	Well. X	4	4	-	-	-	-	-	-	-	-	-	8 mines
BRISTOL	6	Well. X	5	5	-	-	-	-	1,0	-	-	-	-	9 mines
LORAIN	6	Well. X	4	3	-	-	1	-	-	-	-	-	-	5 mines
MINNEAPOLIS TOTAL			25	18	-	-	7	-	1,0	-	-	-	-	35 mines
TOTAL			634	534	8+2 ^o	4	54	34	20+1B +1B+1E	8+1AC +1AC +2B	9+1AC +2E	33	65	

* Also hit by flak.
^o Also attacked Primary.

RAID TRACK NOT AVAILABLE

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 5/6 SEPTEMBER 1943. TARGET: MANNHEIM.

SECRET



Four aircraft have been plotted
 outside the area of this map

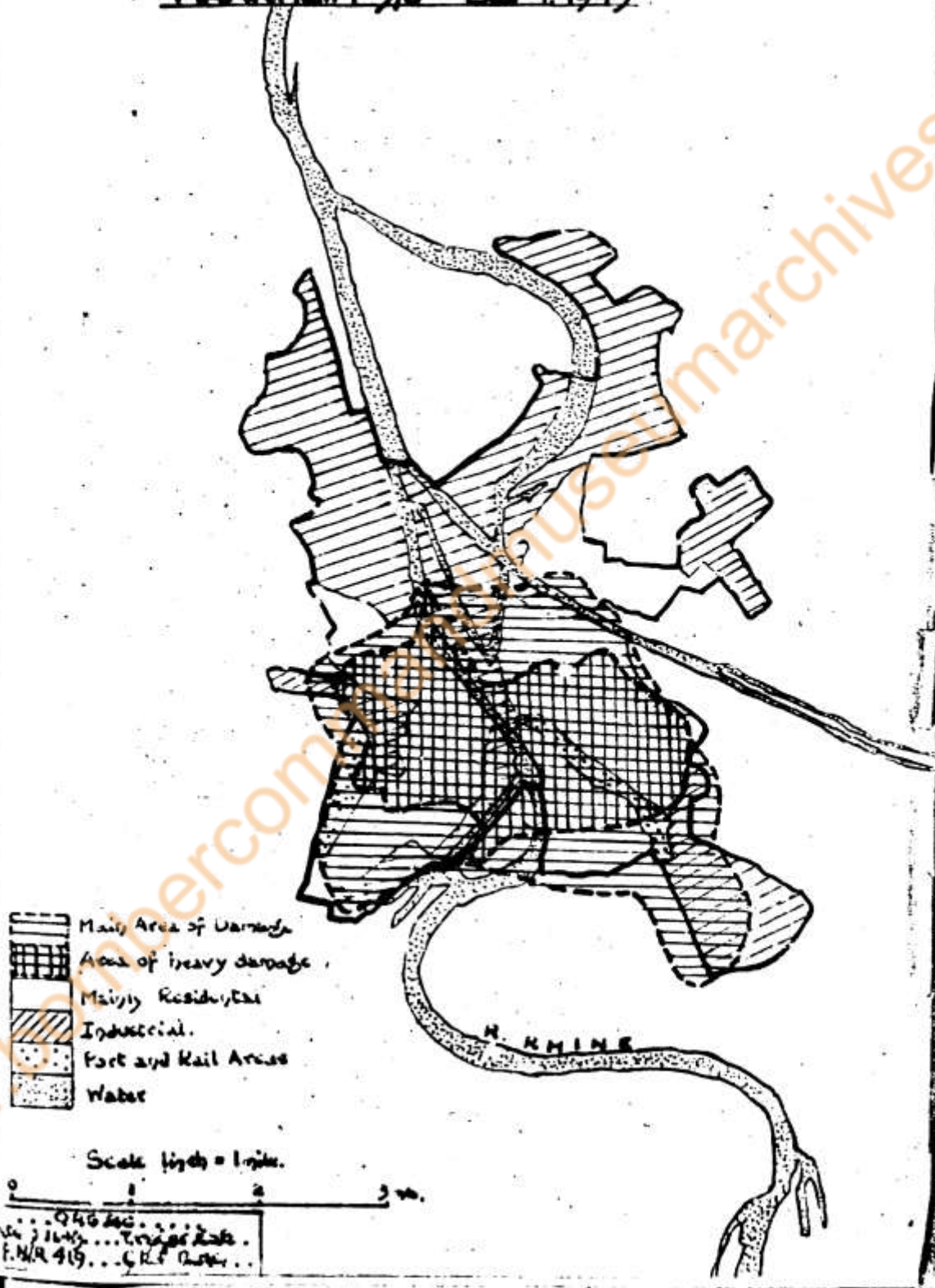
Photographs taken with Bouncing Bomb		
	BFB marker aircraft	Man Force aircraft
Plotted by ground detail	●	○
Plotted by fire	⊙	⊘
Plotted	By ground detail	By fire
Within 3 miles	101	175
Outside 3 miles	34	1
Unplotted	20	100
Number of prints (with bombing) examined. 451		







Scale: 1 inch = 1 mile

CRS/HC 270B
 Dec - 12 K 43 (last of)
 May - 14 19 442

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DIAGRAM SHOWING LOCATION OF
ATTACK AS INDICATED BY DAMAGE
MANNHEIM 5/6th SEPT. 1943



-  Mainly Area of Damage
-  Area of heavy damage
-  Mainly Residential
-  Industrial
-  Port and Rail Areas
-  Water

Scale 1 inch = 1 mile.



Q 46 246
 Via 3 16 45 ... 10 miles 246
 F. W. R. 419 ... G. R. P. 246

BOMBER COMMAND REPORT ON NIGHT OPERATIONS6/7th. SEPTEMBER, 1943.MUNICHSUMMARY

A force of 404 Halifaxes and Lancasters made an attack on Munich, which was groundmarked and illuminated by Y-type aircraft. As the target was almost completely obscured by cloud at the beginning of the attack, aircraft detailed to identify the aiming point visually did not use their special markers, and many main force aircraft were obliged to bomb on fires. No P.R.U. cover was obtained until Munich had been bombed again, but the night photographs showed that the bulk of the attack fell on the S.W. edge of the city, and the suburbs beyond it. About half of the 16 aircraft which failed to return were probably shot down by enemy fighters, of which 4 were claimed as destroyed.

METEOROLOGICAL FORECAST

Home Bases: fit all night.

Route out over England: well broken convection clouds. Cold front will be across route at about 9°E. Cloud on front solid to 12-14,000', then well layered above with tops to about 20,000'. E. of front, a stretch of 10/10ths. Cloud below 10,000'.

Target: Possibility of either 10/10ths. or nil cloud. Good probability of 1/2 cover, possibly in two layers up to 2,500' thick.

Route Home: similar to route out with frontal cloud a little further E. Cloud for descent very well broken.

Calais Area: 3-6/10ths. cloud, tops below 12,000'.

<u>Winds:</u>	<u>750 mb.</u>	<u>500mb.</u>	<u>300mb.</u>
Sea N. of Wash:	260/30mph.	260/40 mph.	260/55 mph.
Sea S. of Wash:	260/35mph.	260/45 mph.	270/65 mph.
N. to 05°E. en route	250/40mph.	250/50-55 mph.	270/90 mph.
E. to target		(20,000' 260/70 mph)	
en route.	250/20 mph.	260/35 mph.	270/45 mph.

PLAN OF ATTACK

Route: Beachy Head - 50°00'N. 01°15'E - 48°06'N. 07°35'E - Target - 48°06'N. 11°45'E - Turn wide right - 48°00'N. 11°20'E - 48°06'N. 07°35'E - 48°06'N. 02°35'E - Cabourg - Selsey Bill.

Blind Markers, Visual Markers and 8 Group Main Force:-

Blind Markers: 00°N. 01°15'E - Freiburg - 47°40'N. 10°06'E - Target - 47°58'N. 11°45'E - 48°06'N. 07°35'E.)

Marking Method

Blind Markers: 8 Blind Markers and 11 Backers-up were to drop:- (a) Red T.I. at 48°34'N. 11°45'E (12 miles 206° Nancy); to guard against too large a concentration of red

...../T.I. captains could

T.I. captains could retain them at their own discretion. (b) red spot T.I. at 48°07'N. 05°08'E (1 mile 360° Chamonix).

Target: 24 Blind Marker Illuminators equipped with H2S were to mark the aiming point blindly at Z-4 with red T.I. after a carefully timed run from the centre of the Armer See (about 21 miles S.W. of the target). Illuminator flares were also to be dropped, the first bundle 10 secs. before the T.I's., the second salvo with them and the remaining bundles at 6 sec. intervals from that time. 6 Visual Markers were to mark the exact aiming point at Z-3 with yellow T.I. and green T.I.; illuminating flares were also to be carried and dropped at the captain's discretion. If visual identification should prove impossible, these markers were to act as backers-up, aiming only their green T.I. at the estimated centre of red T.I. with an overshoot of 2 secs. 23 Backers-up were to maintain the marking with green T.I. from Z+1 to Z+15 aiming at (1) Yellow T.I.; (2) estimated centre of red T.I. with 2 secs. overshoot; (3) estimated centre of green T.I. Main force aircraft of 8 Group were to aim at the estimated centre of red T.I., or to bomb visually. Main Force aircraft of the 1st., 2nd., and 3rd. waves were to aim at the point half way between the estimated centre and Northern edge of all T.Is.; those of the 4th., 5th., and 6th. waves at the point half way between the estimated centre and Southern edge of all T.Is.; all aircraft to overshoot by 1 sec. All Y-aircraft with qualified crews were to carry release point flares (Red/Green stars) to be used if necessary. Route marker T.I's were to cascade at 6,000'; Target markers at 3, 6 and 10,000', and release point flares to burst at 15,000'.

5. Timing Zero Hour: 23.30 hours. Period of Attack: 2326-2336

Pathfinder Force.

Blind Markers: 24 Y-Lancasters at Z-4

Visual Markers: 8 Lancasters at Z-3

Backers-up: 6 Lancasters at Z+1

 4 Lancasters at Z+2

 13 Lancasters at Z+3 to Z+15 - one aircraft to attack aiming point

Emergency Sky Marking. (Aircraft to orbit till appropriate time if necessary)

9 Lancasters at Z
8 Lancasters at Z+4 (approx.)
6 Lancasters at Z+8 (approx.)
7 Lancasters at Z+12 (approx.)

Main Force.

8 Group: 21 Lancasters at Z-4

1st wave: 51 Lancasters at Z+2 to Z+6)

2nd wave: 77 Halifaxes at Z+6 to Z+12) Northern Aiming Point

3rd wave: 52 Lancasters at Z+12 to Z+16)

4th wave: 51 Lancasters at Z+2 to Z+6)

5th wave: 76 Halifaxes at Z+6 to Z+12) Southern Aiming Point

6th wave: 51 Lancasters at Z+12 to Z+16)

/6. Tactics.

Tactics. WINDOW was to be dropped at the rate of one packet per minute, from 49° 17' N, 03° 40' E to 48° 34' N, 06° 05' E, on route out; from 48° 09' N, 11° 15' E to 45° 00' N, 11° 20' E, within 15 miles of the target and from 48° 06' N, 06° 25' E, to 3° 06' N, 04° 25' E, on route home.

NOTES

(a)	No. of aircraft despatched.....	404
(b)	" " " reporting attack on primary area.....	349 (86.5%)
(c)	" " " " " " " " " alternative area.....	10 (2.5%)
(d)	" " abortive sorties:- technical defects..... 24)	
	sickness of crew..... 5)	29 (7.2%)
(e)	" " aircraft missing.....	16 (4.0%)

WEATHER EXPERIENCED.

Route: Small amounts of layer cloud up to 5 E., then increasing to 9-10/10ths tops 10-12,000 ft., in a bolt about 50 miles w.l.o. From here to target cloud normally 4-8/10ths., thin layer cloud at 10-12,000 ft.

Target: 4-8/10ths thin layer cloud, tops 10-12,000 ft. Visibility very good. No moon. Winds at 18,000 ft: 200° 50-55 m.p.h. over French coast, increasing to 35 m.p.h. at target.

Bases: fit all night.

GMT PHOTORECONNAISSANCE EVIDENCE.

No. of photographs examined.....	202
" " " showing (plotted within 3 miles..... 7)	
ground detail (plotted outside 3 miles.....45).....	67
(unplotted....., 15)	
" " " photographs showing (plotted within 3 miles.....43)	
fire tracks (" " " " outside 3 miles.....49).....	135
(unplotted.....43)	
" " " aircraft estimated from the photographic evidence to have	
banded within 3 miles of the aiming point.....	87

DESCRIPTIVE OF ATTACK.

Although 17 of the 24 Blind Marker Illuminators detailed to groundmark target dropped their T.I.s, the weather conditions prevailing at the opening of the attack made the sighting of T.I.s very difficult, and, unfortunately waves of Y-aircraft seem to have been reluctant to drop their sky-marking flares, which might have improved the accuracy of the raid. The thick cloud also prevented the 6 visual markers from dropping their yellow T.I. - three dropping yellow only and three acting as back-up and dropping green T.I.s only. 14 back-up dropped their green T.I. but the photographic evidence is too poor to permit any assessment of the accuracy of the T.P.F. A number of T.I.s have been plotted, some of them 6 miles the S.W.

A larger number than usual of the Main Force report bombing on fires owing to difficulty in sighting T.I.s. The night photographic evidence indicated that the main weight of the attack fell on the South-Western edge of the city and built-up area beyond it.

The effect of timing the attack by the last three waves of the Main Force to the Southern aiming point to coincide with that of the first three on the Northern aiming point was to produce a high concentration of aircraft and losses below normal although the Main Force attack lasted 15 minutes longer than it planned to do.

DAY RECONNAISSANCE.....

DAY RECONNAISSANCE.

13. No daylight reconnaissance of Munich was undertaken until the attack of October 2/3rd had been made. Assessment of damage caused by the attack of September 6/7th is therefore included in the report on the reconnaissance which followed the attack on October 2/3rd but most of the damage seen in the S.W. of the city was probably caused by the raid of September 6/7th.

ALTERNATIVE TARGETS.

14. 10 aircraft attacked alternative targets; 4 in the areas of Clermont, Chalon-sur-Marno, Bar-le-duc and Cayoux; 1 in the area of Schwennigen; 2 25 miles W. and 1 10 miles E. of the target; the remaining 2 aircraft dropped their bombs on the town of Lochfeld and a flak position at Le Troport respectively.

SPECIAL EQUIPMENT.

15. H2S: 52 Y-aircraft were despatched; 24 as blind markers and the remainder carrying H2S for navigational purposes only. 22 Blind Markers report attack, used their special equipment to drop T.I. markers and the remaining 5, with H2S underviceable, dropped H.E. only. The timing of the 17 markers was moderately good, but only three have been plotted, one on the aiming point, the others 2 1/2 miles away, one to the N., the other to the S. 5 of the 23 aircraft using H2S for navigational purposes which reached the target with their sets serviceable used them to check their position at bombing.

16. GEE: The Eastern Chain operated on the Wyoming frequency throughout and on the Arizona frequency from 21 30 to 04 00 hours, while the Southern Chain operated on Carolina throughout and on Zanesville from 23 59 to 04 00 hours. There was an intense belt of jamming between the French coast and Paris on both the Wyoming and Carolina frequencies. The enemy appeared to be concentrating on noise jamming and spurious pulses. To the east of Paris the route was a comparatively new one, and the jamming relatively light. On the whole the target frequencies gave the best ranges, many fixes being plotted east of 06°E. The B signal on both chains was weak.

ENEMY DEFENCES.

17. Flak and Searchlights. Very little flak was met on the route. Generally accurately predicted flak was reported from Amiens, Commingon and Friedrichshaven on the route out - the last town lying well to the south of the route planned. On the route home Commingon, Friedrichshaven, Chartres and Le Havre were mentioned as centres of activity. Two aircraft appear to have been shot down by flak near Beauvais, one outbound and one homebound, but there is no information as to the nature of the flak in this area. Reports on the nature of flak over the target vary, but it seems to have been mainly barrage of moderate strength. Some predicted fire was observed at the beginning of the attack, but it died away later. Searchlights were prevented by cloud from coming aircraft directly, but as on some earlier raids, illuminated the cloud base for night fighters. 4 aircraft were damaged.

18. Fighters: It is possible that as many as 200 fighters were operating on running exomatory control alone on this night, and there is evidence that some were drawn from places as far north as Arderf Witmanliaven and Stado. G.C.I. fighters were also in operation, but only 4 pursuits were heard, 3 in the areas of St. Dizier, Inon and Mannheim, and one unlocated. No contacts were made. There were many reports of flares used by the enemy to aid fighters, almost entirely within 40 miles of Munich and at the later stages of the attack. Some crews described lanes of flares at bomber heights along the tracks in and out. Red flares dropped by fighters were also reported, but it has proved impossible to determine for what purpose they were used.

19. 65 interceptions were reported, including 21 attacks and 21 other combats. All the attacks and 17 other combats took place in the "flare area", - within 40 miles of the target - , 14 attacks and 15 combats occurred in the target area.

no attack and one combat before the target area was reached, and the others on leaving it. There were only 4 other combats on the whole of the remainder of the route. 10 aircraft were damaged by enemy fighters.

QUALITIES.

No. of aircraft missing..... 16 (4.0%)
 " " " damaged by (a) flak.....4)
 (b) fighters.....10)..... 21 (5.2%)
 (c) other causes.....7)

It was estimated that at least 7 of the missing aircraft were shot down by enemy fighters; two outbound at Amiens and Freiburg and at least 5 over the target. Six were probably shot down by flak, one outbound at Beauvais, either one or two over the target and 3 homebound at Chartres, Beauvais and Le Havre. An enemy aircraft was seen to be shot down at Biberach, but the cause is not known. Another bomber may have been destroyed in collision with a fighter over the target.

One aircraft came down in the sea on the return journey, 4 were damaged by enemy fighters; forced landings owing to various technical failures, two were hit by stray enemy fighters and one was damaged in a combat with another British aircraft,

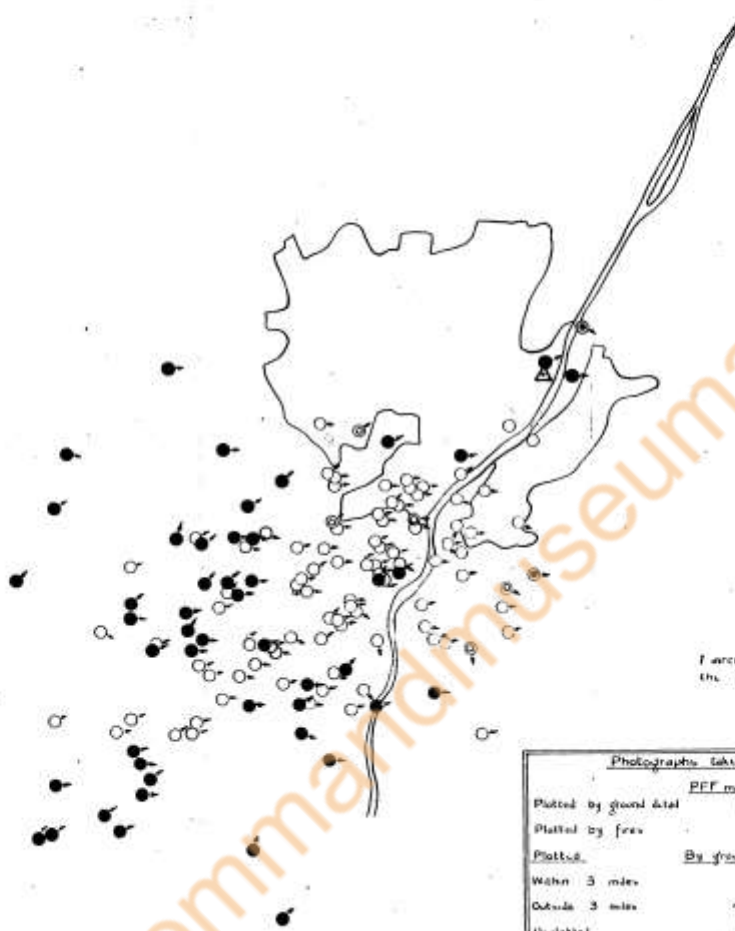
FD
 26342/5/ORS3.
 11 November, 1943.

REPORT
 11/7th. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTED TO ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INCIDENTS		RESULTS		
				FRONT AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT W/A	WRECKED	NOT ATTACKED	H.E.	Inc.	
BERLIN	8	Lanc. III	33	47	3	-	1	2	-	1+1B	-	4	5	P. 563.4 450.4		
	8	Lanc. I	1	4	-	-	-	-	-	-	-	-	-	A. 18.3 5.3		
	8	Lanc. III	15	12	1	-	2	-	-	-	-	-	-	M. 14.3 16.3		
	1	Lanc. I	11	10	-	-	1	-	-	1+1C	1+1B	1	-			
	1	Lanc. III	75	70	1	-	4	-	-	1	-	-	3			
	3	Lanc. II	5	5	-	-	-	-	-	-	-	-	-	-		
	4	Hal. IIIV	50	37	-	-	8	5	1	-	1	1	5		Heavy Bombs	
	4	Hal. LA	49	43	1	-	2	3	1	2+1+1C	-	8	11		8000lb. 4000lb.	
	5	Lanc. I	15	13	-	-	2	-	-	-	-	-	1			
	5	Lanc. III	77	76	-	-	-	1	-	1+1+1C	1+1+1C	5	13			
TOTAL	6	Hal. IIIV	32	21	3	-	6	2	-	1+1C	1	-	-			
	6	Hal. LA	16	10	-	-	3	3	-	1	-	1	4			
	5	Lanc. II	5	4	1	-	-	-	1	-	1	1	2			
TOTAL			404	349	10	-	29	16	1	4+2+1C +1B	5+1+1C +1B	21	44			

FINAL PLOT OF NIGHT PHOTOGRAPHS TAKEN 6/7 SEPTEMBER 1943. TARGET: MUNICH.

SECRET



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

ORS/BC 271B
13 10 43 TACU - J/d
Rq - N.E. W.L.D. - 154

Scale: - 1 inch = 1 mile

Photographs taken with Bombing		
	PFF motor aircraft	Man Pass aircraft
Plotted by ground detail	⊙	●
Plotted by fire	⊕	⊗
Plotted	By ground detail	By fire
Within 3 miles	7	43
Outside 3 miles	15	49
Unplotted	15	43
Number of prints (with bombing) examined 202		

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SECRET

DIAGRAM SHOWING LOCATION OF
ATTACK AS INDICATED BY DAMAGE
MUNICH 6/7th SEPT. 1943

26



BOMBER COMMAND REPORT ON NIGHT OPERATIONS

8/9th. SEPTEMBER, 1943.

TARGETS IN THE BOULOGNE AREADETAILS

Gun positions in the Boulogne area were attacked by 2 small forces of bombers led by OBOE Mosquitoes. A new technique was tried by half the OBOE aircraft with little success, and the accuracy as a whole was not good enough for such small targets. Neither of the two main targets appeared to have been damaged, but intercepted wireless traffic indicated that one gun, possibly flak, had been hit. The damage caused by the raid cannot be completely distinguished from that due to attacks by the U.S.A. VIII Air Support Command, Fighter Command and the Tactical Air Force. All the bombers returned safely.

WEATHER FORECAST

Estimated midnight position of fronts:- occlusion from Emden - 50°N.05°E. Hours. There is considerable risk of thunderstorm development along this front. Clouds in the front generally not above 15,000ft.; but thunderstorm tops protruding to great heights. Base of cloud 2,000 ft., but down to 1,000ft. below thunderstorms.

Home Bases:- fit for take-off, cloud clearing to small amounts or nil over dusk. 1 and 5 Groups expect to have to divert up to 80% of their aircraft to fog, which will begin to form at about 0400 hours. In 3, 91 and 92 Groups, 50% of bases will be available for diversions up to 0500 hours. Smoke and fog troubles will be very serious about dawn.

Calais area:- 2-5/10ths. residual cumulus, tops below 10,000ft. decreasing over. Visibility good.

DETAILS OF ATTACK

Route 1, 3, 6 Groups:- Dungeness - TARGET - 50°50'N.02°20'E - Clacton
91,92,93 Groups:- Dungeness - TARGET - turn right - Beachy Head.
8 Group :- Dungeness - TARGET - Beachy Head.

Marking Technique

The attack was to be in two phases with two separate aiming-points. The marking technique was the same for each phase. The aiming-point was to be marked with red T.I's by two OBOE Mosquitoes using the normal OBOE technique, and with green T.I's by 3 OBOE Mosquitoes using the BILLIE-BEAM technique. Halifaxes were to back up with green T.I's, aiming at red T.I's or the estimated centre of all green T.I's. These aircraft were to act as back-up in both phases, using half their T.I's and half their bombs in each attack. Force aircraft were to aim at red T.I's or the estimated centre of all T.I's. Bombs were to be brought back if no T.I's were seen. All T.I's were to cascade from 6,000ft.

...../Contd:

5. Timing. Zero hour: 2130 hours.Phase I (Northern target)Duration of attack: 2128 - 2145 hoursPathfinder Force

2 Mosquitoes: (OBOE technique) at (Z - 2), (Z + 8)

3 " (BAILLIE-BEAM technique) at (Z), (Z+4), (Z+12)

10 Halifaxes: (Z + 1)-(Z + 14), 1 per minute except at Mosquito times and (Z + 10).

Main Force

56 Stirlings	} from (Z) to (Z + 15)
61 Wellingtons	
5 Fortresses U.S.A.	

Phase II (Southern Target)Duration of attack - 2213 - 2230 hoursPathfinder Force

2 Mosquitoes: (OBOE technique) at (Z + 43), (Z + 54)

3 Mosquitoes: (BAILLIE-BEAM technique) at (Z + 45), (Z + 49), (Z + 57)

10 Halifaxes: (Z + 46), (Z + 59), 1 per minute except at Mosquito times and (Z + 55)

Main Force

56 Stirlings	} from (Z + 45) to (Z + 60)
60 Wellingtons	

SORTIES

	<u>Phase I</u>	<u>Phase II</u>	<u>Total</u>
6. No. of aircraft despatched.....	134 (10*)	134 (10*)	
" " " reporting attack on primary area.....	120 (9*)	124 (10*)	
" " abortive sorties (technical and manipulative defects.....	10 (1*)	8	
(crew failures.....	3	NIL	
(crashed on take-off.....	1	2	
No. of aircraft missing.....	NIL	NIL	

* Halifaxes which were detailed for both targets, included only once in total.

N.B: 5 Fortresses of U.S.A.B.C. which were in Phase I of the attack are not included in the above numbers. All 5 reported attack on primary area.

WEATHER EXPERIENCED

7. Home Bases: local patches of mist and fog before midnight, becoming general in Norfolk and Lincolnshire by 0300 hours. By 0500 hours almost whole of 6, 4, 1 and 5 Groups and Norfolk were unfit, but 91, S. of 92 and of 8 Group, and the South coast, remained fit all night.

Route and target: haze layer at 6,000 ft. over the Channel. Nil small amounts of dispersing strato-cumulus. Visibility good. Wind at 15,000ft/300°/20 m.p.h. Quarter moon, up during the operation.

...../NIGHT PHOTOGRAPHIC STATISTICS

PHOTOGRAPHIC STATISTICS

No. of photographs with bombing examined.....			191
" " " showing ground detail		<u>Phase I</u>	<u>Phase II</u>
{ plotted within 1 mile... 59		.....	71
{ " outside 1 mile... 13		.....	16
{ (unplotted..... 0		.....	0)
			164
" " photographs showing fire tracks		<u>Phase I</u>	<u>Phase II</u>
{ plotted within 1 mile... 16		.....	3
{ " outside 1 mile... 2		.....	0)
{ (unplotted..... 3		.....	0)
			24
No. of aircraft estimated from photographic evidence to have bombed within 1 mile of the aiming-point.....		<u>Phase I</u>	85
		<u>Phase II</u>	90

Narrative of Attack

In both phases the Mosquitoes employing the usual OBOE technique approached the target from just W. of N., those using the BAILLIE BEAM technique from S.S.E., and the backers-up and Main Force from W.N.W. For purposes of differentiation the Mosquitoes will be referred to as "OBOE" or "BAILLIE BEAM", according to the technique employed, although both are OBOE aircraft.

PHASE I. Owing to the failure of the first OBOE Mosquito, the attack was opened at Z + 2 by a BAILLIE BEAM Mosquito dropping a salvo of T.I. green, half of which fell in the sea, and half on the foreshore 960 yards W.S.W. of the northern gun position. One Halifax backed up these T.I.'s with greens which fell 300 yards S.S.W. of the target, but the others waited until the first T.I. red were dropped by an OBOE Mosquito at Z + 8. 60% of the main force bombed between Z + 2 and Z + 8 so that much of the attack fell S.W. of the aiming-point. The T.I. red fell 550 yards N. of the target and 5 backers-up dropped T.I. green, which were plotted 150 to 2,300 yards S. of the reds. The remainder of the main force aimed at the T.I. red, but no marked concentration developed. The second BAILLIE BEAM Mosquito released his T.I. green at Z + 13, when this phase of the attack was almost over, so that although they fell only 360 yards S. of the aiming-point, they had little influence on the course of the raid.

PHASE II. The attack on the Southern gun position was opened at Z + 43 by a salvo of T.I. red dropped by an OBOE Mosquito, and of T.I. green by a BAILLIE BEAM Mosquito. The greens fell about 1 mile E. of the aiming-point, and did not attract any bombing. The salvo of reds fell in three parts with 300 yards spacing, stretching to the N.N.E. from about 350 yards S.S.E. of the gun position. The bombing of the main force followed a similar pattern but the backers-up achieved a good concentration of greens within 500 yards of the aiming-point. The T.I. green dropped by a BAILLIE BEAM Mosquito at Z + 54, near the end of the attack, were photographed in the air 600 yards W. of the target, and probably fell in the sea, as they were not seen again.

RECONNAISSANCE

Reconnaissance photographs cover raids by U.S.A. VIII Air Support Command and Fighter Command and the Tactical Air Force, besides the attack at present under consideration. These photographs showed superficial damage to the dual gun battery N. of Turbingham and direct hits on three nearby shelters. There were 9 craters inside the battery enclosure. An AA/CD battery under construction at Turbingham was damaged, 20 craters being visible in the vicinity. Two craters fell near a light cliff-top defence post N. of Ningles, and a concentration of craters was seen between the defence positions. There were several craters in the cliff-side above the mouth of the tunnel Scouterain de L'ave Maria and on the cliff-top. About 15 craters were seen in the siding serving Petit Port, each being blocked in at least one place. Hits on the S. Quay of Petit Port destroyed one hut and probably destroyed a crane and a store on the quay side. Several bombs which fell near a 6-gun AA/CD cliff-top battery under construction at the Petit Port apparently caused little damage. A probable stores dump and a 3-gun light battery N. of Le Portal was severely damaged and the case of Le Portal suffered severely. The damage was mainly residential,/ but a large factory,

but a large factory, probably making ropes, was seriously damaged by direct

SPECIAL EQUIPMENT

13. OBOE Each aiming-point was to be marked with T.I. red by 2 OBOE Mosquitoes, with one reserve for each pair. Both reserves and one of each pair of markers were unable to attack owing to technical failures of OBOE, so that each aiming-point was marked by one aircraft only.

14. 6 OBOE Mosquitoes, 3 on each aiming-point, were detailed to mark with T.I. green, using a technique not previously adopted. The aircraft were to approach the target from the S., tracking along the BAILLIE BEAM, but releasing in the normal way, the ground stations in Dover area acting as "mouse". 2 aircraft on each aiming-point reported attack. One Mosquito returned early owing to GEE failure and the other was unable to track accurately owing to reception of the BAILLIE BEAM.

15. 4 OBOE Mosquitoes, all of which completed the task successfully, were despatched to bomb the southern target after the end of the main attack.

16. H2S 15 aircraft used H2S as a navigational aid. One of these returned early and 2 reported unserviceable sets.

ENEMY DEFENCES

17. Flak and Searchlights . Opposition was encountered from the target area and from ships off the coast and in ports. Flak was reported as of moderate intensity and accuracy, only 2 aircraft being hit.

18. Fighters There was little evidence of controlled night fighter activity but 25 interceptions were reported including 4 attacks. However, none of the bombers was damaged.

Casualties

19.	No. of aircraft missing.....	NIL
	" " " damaged (flak..... 2)	
	(fighter..... 0)	7 (2)
	(other causes..... 5)	

20. 3 aircraft crashed on take-off and were totally destroyed and 2 were damaged owing to engine failure.

EMO/JT.
BC/S. 26342/6/ORS3,
23rd. November, 1943.

THEATRE	GROUP	TYPE	MONTHS	A/C REPORTING TRACK ON				MISSIONS	MILITARY			DIVISION/FIELD		RESULTS	
				INFL. A/Cs	ACT. A/Cs	OVSR. MESSY TR-S.	NOT OVER DROY TR-S.		PLA.	FIGHTING	NOT R/A	ATTACK-ED	NO. ATTACKED	H. R.	Inc
BOULOGNE PHASE I SOUTHERN TARGET	BYP	Hoaq.IV	5	3	-	2	-	-	-	-	-	-	-	P. 328.6	2.6
		Hoaq.IX	1	-	-	1	-	-	-	-	-	-	-		
	Hal.La	10*	9*	-	-	-	-	-	-	-	-	1			
	3	Stir.III	27	26	-	-	3	-	-	1E	-	-			
	91	Well.Ic	2	2	-	-	-	-	-	-	-	-	1		
		Well.III	15	13	-	-	2	-	-	-	-	-	3		
		Well.X	5	4	-	-	1	-	-	-	-	-	-		
93	Well.Ic	9	7	-	-	2	-	-	-	-	-	1			
	Well.III	16	14	-	-	1	-	-	-	-	-	3			
	Well.X	16	14	-	-	-	-	1	-	-	-	2			
U.L.	Fortress	5	5	-	-	-	-	-	-	-	-	-			
PHASE I TOTAL			159	125	-	4+1*	9	-	1	-	1E	-	11		
BOULOGNE PHASE II SOUTHERN TARGET	BYP	Hoaq.IV	5	3	-	1	1	-	-	-	-	-	-	P. 335.2	3.3
		Hoaq.IX	1	-	-	1	-	-	-	-	-	-	-		
	Hal.La	10*	10*	-	-	-	-	-	-	-	-	-	Including 2nd,000lb.bombs		
	BILLEN POECE	Hoaq.IV	4	4	-	-	-	-	-	-	-	-	-		
		Well.X	24	23	-	-	1	-	-	-	-	1	-		
	3	Stir.I	2	1	-	-	1	-	-	-	1E	-	-		
		Stir.III	24	23	-	-	1	4	-	-	1E	1	7		
6	Well.X	12	12	-	-	-	-	-	-	-	-	1			
	Well.III	16	16	-	-	-	-	1	-	2E	1	2			
92	Well.III	16	16	-	-	-	-	-	-	-	-	1			
	Well.X	6	6	-	-	-	-	-	-	-	-	1			
PHASE II TOTAL			134	121	-	3	7	-	1	-	2E	1	10		
BOEMER COMMAND TOTAL			298	235	-	7	16	-	2	-	2E	2	21		

* Not included in Bomber Command Total. * Same aircraft, included once only in main total.
 + ...ttacked in Phase II, not counted as alternative in main total.

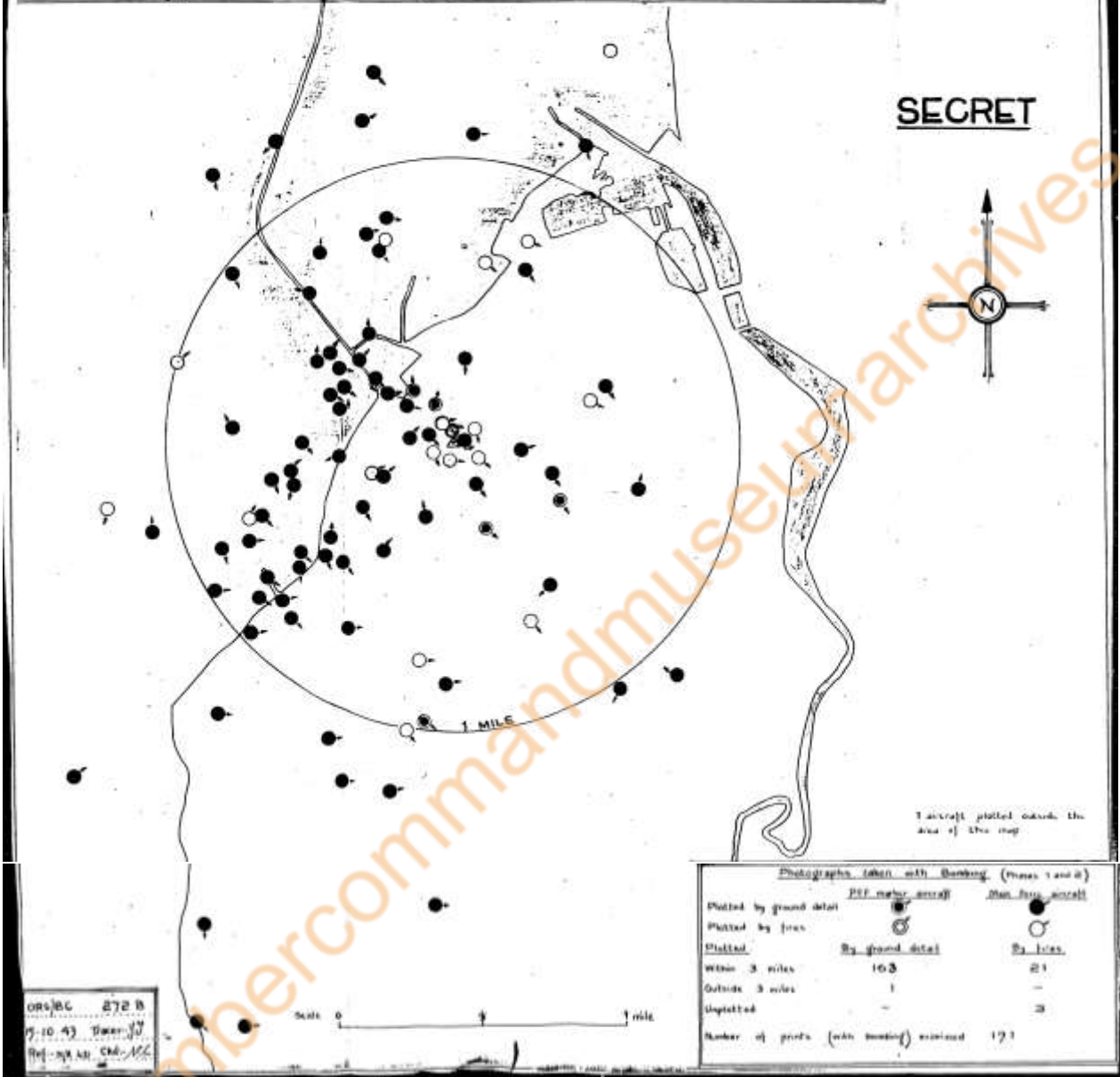
RAID TRACK NOT AVAILABLE

www.bombercommandmuseumarchives.ca

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN **8/9** SEPTEMBER 1943. TARGET: **BOULOGNE**

PHASE. 1. ³¹

SECRET

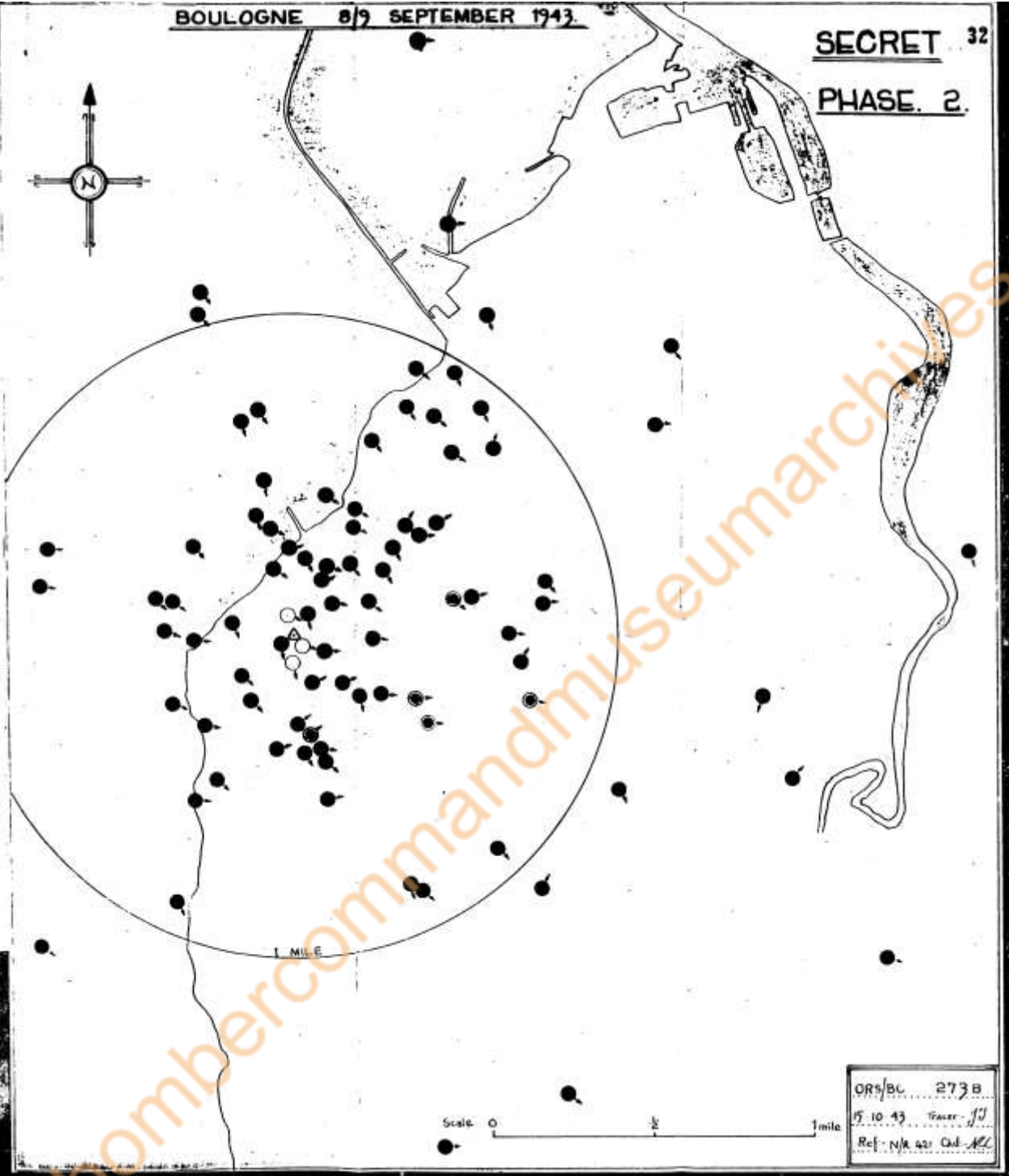


www.bombercommandmuseumarchives.ca

BOULOGNE 8/9 SEPTEMBER 1943

SECRET 32

PHASE 2.



Scale 0 $\frac{1}{2}$ 1 mile

ORS/BC 273B
15 10 43 Trailer - 1/1
Ref - N/A 421 Cnd - ABC

BOMBER COMMAND REPORT ON NIGHT OPERATIONS

13/14th. SEPTEMBER, 1943.

Cologne: Duisburg

SUMMARY

1. 10 Mosquitoes were sent on harassing raids; 5 to Cologne and 5 to Duisburg. 2 attacked the former and 3 the latter target; 2 were unable to penetrate the thick cloud and bombed Dusseldorf and Munchen-Gladbach, and the remaining 3 returned early with technical trouble. No losses or casualties were sustained.

WEATHER FORECAST

2. Midnight frontal positions: (1) Occlusion from N.W.Ireland to Glasgow to Firth of Forth to 55°N. 02°E. to Helder to 47°N. 07°E. (2) occlusion from S.W. England to 50½°N. 00° to Paris to 45°N. 03°E.

Bases: Fog and low stratus at N. bases, local fog towards dawn in S.; thundery rain persisting locally.

France and W. Germany: much residual convection cloud, with active thunderstorms. E. Germany: little cloud. Much medium cloud, between 07°E. and 11°E.

N. Italy: much strato-cumulus.

SORTIES

		<u>Cologne</u>	<u>Duisburg</u>
3.	(a) No. of aircraft despatched.....	5	5
	(b) " " " reporting attack on prim. area.....	2	3
	(c) " " " " " alt. area.....	1	1
	(d) " " abortive sorties (techn.defect).....	2	1
	(e) " " aircraft missing.....	0	0

WEATHER EXPERIENCED

4. W. Germany: 10/10ths. low stratus, tops 15,000'. 10/10ths. cumulo-imbus, tops 35-40,000'. No moon. Visibility moderate to poor.

ENEMY DEFENCES

5. No opposition was reported.

CASUALTIES

6. None.

ELM/JT.
BC/S.26342/1/ORSJ,
1st. November, 1943.

COLOGNE: DUISBURG:

13/14th. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	P/C REPORTING ATTACK ON		EFFECTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER EVENING TECH.	NOT OVER EVENING TECH.		FLAK	FIGHTER	NOT E/L	ATTACK- ED	NOT ATTACK- ED	Tons of Bombs	H. E.
COLOGNE	8 PFF	Moeg. IV	5	2	1	-	2	-	-	-	-	-	-	P. A.	1.6 .8
DUISBURG	8 PFF	Moeg. IV	5	3	1	-	1	-	-	-	-	-	-	P. A.	2.3 .8
TOTAL			10	5	2	-	3	-	-	-	-	-	-		

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS

14/15th. SEPTEMBER, 1943.

DORTMUND-EMS CANAL: Berlin:

SUMMARY

Dortmund-Ems Canal 8 Lancasters of 5 Group with an escort of 6 Mosquitoes of Fighter Command, set out to attack the Dortmund-Ems Canal, but were recalled owing to an unfavourable weather report by a reconnaissance Mosquito. One Lancaster ditched off Cromer.

Berlin A force of 8 Mosquitoes set out to bomb Berlin. 3 reached the target, and bombed on E.T.A., checked by ground detail. One aircraft attacked Emden, and another Borkum Island. Two returned early. The eighth Mosquito failed to return.

WEATHER FORECAST

Estimated midnight position of fronts: (i) occluded front, 62°N. 5°W. - 53°N. 5°E. - 58°N. 15°E - Danzig (ii) cold front 62°N. 5°W - 60°N. 3°W - 56°N. 5°W - 53°N. 10°W (iii) frontal trough, with cold front from, 57°N. 1/2°W - Hull - Isle of Wight - Bordeaux.

Bases:- Residual thundercloud and local rain, with thundery activity dying down during the latter part of the night, and cloud dispersing. Frontal alt expected to be over central East Anglia at 0400 hours, with bases to west mainly fit. Thundery activity not expected in portion of trough over England.

Germany:- Residual thundercloud N.E. of Ruhr, with some clearances. The residual cloud will probably be patchy. After midnight, little or no low cloud expected in this area, but some residual medium cloud may persist. Over N.W. Germany, much cloud above 25,000ft., and broken layers of cloud, giving very variable amounts and thicknesses of cloud at any one time over a given area. Base of lowest cloud probably above 3-5,000ft.

W. Coast of France:- Convection cloud with showers and good visibility.

N. Italy:- Probably strato-cumulus cloud.

PLAN OF ATTACK (Dortmund-Ems Canal)

See Night Raid Report No. 424, for 15/16th. September, when the attack on this target was made by the aircraft recalled on 14/15th.

RESULTS

	<u>D/E.Canal</u>	<u>Berlin</u>
No. of aircraft despatched.....	8	8
" " " reporting attack on primary area.....	0	3
" " " " " alternative area.....	0	2
" " abortive sorties.....	8*	2
" " aircraft missing.....	0	1

* Recalled. Technical defect 1: weather 1.

...../WEATHER EXPERIENCED

WEATHER EXPERIENCED

6. Bases:- Much cloud below 1,000ft. at times with rain, moved through base areas during the night; clearance behind reached a line Flessborough-Shoreham by 0400 hours, and Bircham-Bradwell Bay by 0700 hours.

Route:- Frequent thunderstorms to about 07°00'E with tops very variable from 25,000 ft. to above 32,000 ft. at times. Much static and bumpiness. Cloud breaking and decreasing from 07°E. to Berlin. Winds: 25-28,000'/210°-220°/30-50 m.p.h.

Berlin:- 2-3/10ths. layer cloud well below aircraft. Good visibility.

ENEMY DEFENCES

9. Ground opposition was slight both en route and over the target, but one aircraft was coned by searchlights over Brandenburg, and hit by heavy flak. No enemy aircraft was seen, although intercepted wireless traffic indicated slight fighter activity.

CASUALTIES

10. One Mosquito was damaged by flak and one was lost without trace.

EMO/JT.
BC/S. 26342/3/ORS3,
14th. January, 1944.

REPORT BOMBING-ORSI Detail:

14/15th. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING IN FLAK OR		AGGRESSIVE SORTIES		MISSILE	DAMAGE			DISCREPTIONS		BOMB TONNAGE (H.B.)
				PRIM. AREA	SEC. AREA	OVER E.T.	NOT OVER E.T.		FLAK	FIGHTER	NOT E/L	ATTACK- ED	NOT ATTACK- ED	
BERLIN	8 BVP	Mosq. IV	8	3	2	-	2	1	1	-	-	-	-	P. 2.3 M. 1.6 L. .8
DORTMUND-ENG DORTM.	5	Lanc. III	8	RECALLED			8	-	-	-	12	-	-	
		* FIGHTER CONTROL (Mosq. II)	6	RECALLED			6	-	-	-	-	-	-	
TOTAL			16	3	2	-	10	1	1	-	12	-	-	

* NOT INCLUDED IN TOTAL

BOMBER COMBINED REPORT ON NIGHT OPERATIONS15/16th. SEPTEMBER, 1943.MONTLUCON: Dortmund-Ems Canal: Berlin: Leaflets:SUMMARYMONTLUCON

1. A force of 374 heavy bombers, including 5 Fortresses of U.S. B.C. set out to attack the Dunlop Rubber Factory at Montlucon, which was groundmarked by G-type blind-markers and visual markers. Owing to the accuracy of the earliest visual markers the raid was successful, all the major and many of the minor buildings of the factory being destroyed or damaged. Enemy defences were slight, only 3 (0.8%) aircraft being lost.

DORTMUND-EMS CANAL

2. An attempt by 8 Lancasters of 5 Group to breach the Dortmund-Ems Canal embankment near Greven was unsuccessful owing to unexpected ground base in the target area, despite the fact that the aircraft remained there for 1½ hours. Light flak brought down the leader at Nordhorn and 4 other Lancasters in the target area. The force was escorted by 6 Mosquito fighters which remained in the target area throughout the attack, all returning safely.

BERLIN

3. 7 Mosquitoes made a harassing raid on Berlin, all returning safely.

LEAFLETS

4. 12 of 13 Wellingtons despatched, scattered leaflets over towns in northern France. No aircraft was lost.

WEATHER FORECAST

5. Estimated midnight position of fronts: (i) cold $50^{\circ}\text{N. } 9^{\circ}\text{E.} - 56^{\circ}\text{N. } 10\frac{1}{2}^{\circ}\text{E.}$
 $50^{\circ}\text{N. } 9\frac{1}{2}^{\circ}\text{E.} - \text{W. Alps}$ (ii) warm $58^{\circ}\text{N. } 10^{\circ}\text{W.} - 55^{\circ}\text{N. } 5\frac{1}{2}^{\circ}\text{W.} - 50^{\circ}\text{N. } 4\frac{1}{2}^{\circ}\text{W.}$
 $5^{\circ}\text{N. } 7\frac{1}{2}^{\circ}\text{W.}$

Home bases:- at dusk, well broken cloud up to 12,000ft., with isolated patches above. Cloud will tend to increase towards midnight, with some light rain in the N., but base is not expected to fall below 1,500ft. nor will the lowest layer become 10/10ths. Cold front should reach operational groups from N.W. after 2400 hours, giving 10/10ths. cloud, base not below 1,000ft., with some rain along a belt about 30 miles wide. The front will probably not reach East Anglia before dawn. Behind the front the sky should clear rapidly.

N.W. France:- rain and low cloud spreading from W. Central France and Low Countries:- small amounts of cloud. Germany:- on W. of cold front medium cloud will extend about 100 miles from the front and low cloud about 50 miles near the front, local thunderstorms. E. of front, residual thundercloud and occasional thunderstorms. Intense thunderstorms over the Alps, with cloud to 70,000ft. Plain of Lombardy:- broken medium cloud.

Route and target (Montlucon):- cloud as for bases to 49°N ; sky clearing further S. Little or no cloud over the target.

...../Wind.

Wind:	750mb.	500mb.
Bases N. of 53°N.	240°/ 45 m.p.h.	270°/50 m.p.h.
53°N. to 49°N.	250°/ 30 m.p.h.	280°/35 m.p.h.
49° to target.	310°/ 15 m.p.h.	310°/20 m.p.h.

MONTELUÇONPLAN OF ATTACK

6. Route: P.P.P.:- Selsey Bill - Cabourg - 4646N, 0226E. - TARGET - 4716N. 0003W - 4920N. 0050W - Selsey Bill.

Main Force:- Selsey Bill - Cabourg - 4642N, 0230E - TARGET - 4716N. 0003W. - 4920N. 0050W. - Selsey Bill.

7. Method of Attack 4 visual-markers which were to arrive before the blind-markers were to attempt to identify the target by moonlight. T.I. yellow were to be dropped only after absolutely certain identification. One bundle of white flares was to be used at the captain's discretion. Blind-marker illuminators were to mark the aiming-point with T.I. red, using an H2S fix on town of Montluçon. Flares were to be released at 6 second intervals, the first bundle with the T.I. red, but were to be retained if cloud conditions or existing flares made them unnecessary. The remaining visual-markers, using T.I. red as guides, were to mark the target with T.I. yellow and T.I. green after definite identification. If unable to identify, they were to retain T.I. yellow and T.I. green to overshoot the estimated centre of T.I. red by one second.

8. The marking was to be maintained by backers-up aiming T.I. green (i) at T.I. yellow, (ii) to overshoot the estimated centre of T.I. green or T.I. red by one second. The main force, except aircraft of 8 Group, (which were to be visually or to aim at T.I. yellow, or the estimated centre of T.I. red) were to aim at the estimated centre of T.I. green.

N.B: T.I. green were to cascade at 3,000 or 6,000ft.

9. Timing Zero Hour: 2330 hours. Duration of Attack: 2325-2352 hours

Pathfinder Force

- 4 visual-markers at Z - 5
- 15 blind-markers and 4 visual markers at Z - 3
- 3 backers-up at Z + 1.
- 9 " " from Z + 2 to Z + 10, one aircraft per minute.
- 1 " " " at Z + 12
- 2 " " " " Z + 14
- 3 " " " from Z + 15 to Z + 17, one aircraft per minute.

Main Force

- 22 aircraft of 8 Group at Z - 5
- 93 Halifaxes from Z + 2 to Z + 8
- 125 Stirlings + 5 Fortresses from Z + 8 to Z + 16
- 94 Halifaxes from Z + 16 to Z + 22

10. Tactics (i) .. Master Bomber would be in the area to aid and advise
(ii) 3 and 6 Groups were to bomb at the best tactical height consistent with the defences, but below 4,000ft. 4 Group was to bomb between 8,000 and 10,000ft., subject to the defences encountered; no one was to attack above 10,000ft. or below 6,000ft.

(iii) To avoid civilian casualties the need for extreme accuracy was impressed on the crews. Alternative targets were not to be attacked.

SORTIES

11. No. of aircraft despatched..... 369⁺5^{*}
 " " " reporting attack on primary area..... 348 (94.3%) +5^{*}
 " " abortive sorties (technical and manipulative defects..... 16)
 (crew failure..... 1) } 18 (4.9%)
 (delayed by flak..... 1) }
 " " aircraft missing..... 3 (0.8%)
 * Fortresses of U.S.H.C. not included in percentages.

WEATHER EXPERIENCED

12. Home Bases:- variable amounts of cloud, only very locally below 2,500ft. Moderate visibility.

Route:- outwards over France patches of layer cloud, with large clear areas. On return, little cloud over France. Visibility moderate to good. Wind at 10,000ft. to French coast 250°/35 m.p.h. veering further S. to 320°/25-30 m.p.h.

Target:- patch of layer cloud 7-8/10ths., tops 7-8,000ft. about 2,000ft. thick. Visibility moderate to good. Wind at 8,000ft., 320°/20-30 m.p.h. Moon full at night.

NIGHT PHOTOGRAPHIC STATISTICS

13. No. of photographs with bombing examined..... 251
 " " " showing ground detail (plotted within 1 mile.... 13^{*})
 " " " 3 miles.... 25 } .. 68
 " outside " " 10)
 (unplotted..... 33)
 " " " " fire-tracks (plotted within 1 mile..... 1^{*})
 " " " 3 miles..... 3 } .. 183
 " outside " " NIL)
 (unplotted..... 180)
 " " aircraft estimated from the photographic evidence to have bombed within one mile of the aiming-point..... 70
 " of aircraft reporting attack..... 348

* Included in the number for 3 miles.

NARRATIVE OF ATTACK

14. The first visual-markers, in spite of difficult conditions, successfully located the Dunlop Rubber Factory and marked it with T.I. yellow. The accuracy of these aircraft made the operation successful, many buildings being set on fire early in the attack. The smoke from the burning rubber, however, together with cloud below bombing height, almost obscured the target and the T.I.'s especially the yellow. The timing of the blind-markers was very poor, and only dropped their T.I. red so that the backers-up had a very difficult task, and their marking was scattered over a fairly wide area. The majority of the main force bombed on T.I. green, so that the bombing was also somewhat scattered. A diversion was created about 10 miles N. of the factory by yellow and green T.I.'s which appear to have been dropped in error.

DAY RECONNAISSANCE

15. All the 26 major buildings of the S.A. des PNEUMATIQUES Dunlop factory were shown by reconnaissance photographs to be damaged, 12 being destroyed and 10 seriously damaged. The buildings destroyed included the test house, the

..../store for finished

store for finished goods, a machine shop, a building for manufacturing footwear and a large garage. The building for making solid tyre and outer covers, the store for compounding ingredients, the compounding plant, the building for preparation of fabric, the technical office and laboratory, the textile mill, the building for making inner tubes and the building for surplus plant were all severely hit. The raw rubber store was still burning at the time of photography and was probably completely destroyed. In addition to the main building 12 small buildings were demolished or gutted and east of the factory 5 small storage sheds and stocks in the yard were destroyed.

16. Considerable damage was caused to an unidentified factory 900 yards S. of the Dunlop Works and a railway repair shop about 600 yards N. of the target was also affected. About 60 workers' dwellings S. of the rubber factory were wrecked.

Intelligence Information

17. "Targets hit" Dunlop works, Sagem works, Forest works, coke oven of St. Jacques works, infantry barracks and a few houses in the surrounding neighbourhood. The villages of Tizon, Labire, Marmignolles and Levareannes and farm round St. Victor were heavily bombed by aircraft returning from the raid on Montlucon.

18. "Results" Dunlop works entirely destroyed in flames. Whole of Campagne Parisienne d'Entreprise on fire. Three quarters of the Dunlop work dwellings destroyed by fire. Whole of Kissel housing estate on fire. Railway line out in 2 places.....Half Sagem and Cote Rouge works on fire. Fire started at various points in the town of Montlucon and at Dessertines and Marmignolles, Hamlet of Tizon entirely wrecked."

SPECIAL EQUIPMENT

19. H2S All 15 Y-type aircraft despatched as blind-markers reported at but only 10 dropped markers, 6 using H2S to do so. 5 released H₂S, only owing to unserviceable sets. The timing was poor, and there were never more than 2 sticks of flares or 3 T.I.'s burning at one time.

20. Of the 50 aircraft carrying H2S as a navigational aid, 45 reported at 44 with serviceable sets, 4 returned early, and one failed to return.

21. GEE The Eastern Chain operated on the Wyoming frequency throughout and on the Zanesville frequency from 2230 to 0030 hours. Heavy interference was reported on the Carolina frequency, including noise, and spurious pulses, which were so strong that they could not be distinguished from the time pulses. Interference on Zanesville was weaker and there was very little on Wyoming. Most navigators were able to get fixes to the target, which, considering the range, was very satisfactory.

ENEMY DEFENCES

22. Flak and Searchlights The defences were almost negligible, not more than 2 heavy and 2 light gun positions being in action in the target area. No searchlights were seen. There was little flak activity en route, 2 aircraft were hit.

23. Fighters Enemy fighter activity, which was slight, was confined to area between the French coast and Chartres and the target area. The patrols over the coastal area were made by single-engined fighter-bombers, one of which claimed a victory. 11 interceptions were reported, only one being an attack.

CASUALTIES

24.	No. of aircraft missing.....	3 (0.6)
	" " " damaged (flak..... 2)	
	(fighters.....NIL).....	9 (2.4)
	(other causes..... 7)	

..../It was estimated that of

It was estimated that one aircraft was shot down by heavy flak over Chateaudun, one by fighters over the target and probably one by fighters in the French coastal area. 5 aircraft were hit by incendiary bombs, one by fire from British aircraft, and another crashed on landing, being totally destroyed.

DORTMUND-EMS CANAL

The Target

25. The Dortmund-Ems and Mittelland Canal systems are probably the most important of the inland water communications in Germany, particularly in relation to the Ruhr. The Dortmund-Ems Canal connects the Ruhr with central and E. Germany and with Emden and the North Sea. The canal is embanked along certain stretches, the water lying considerably higher than the surrounding country. If the embankment could be breached at such a point the canal would be practically drained, and traffic would cease until repairs could be effected.

26. The point chosen as the most suitable to attack was at Greven (52°N. 07°42'E).

PLAN OF ATTACK

27. The attack was to be made by 8 Lancaster III of 617 Squadron, specially modified to carry 12,000lb. H.C. bombs, and supported by 6 Mosquito II of Fighter Command. The force was to be divided into 2 sections, each consisting of 4 Lancasters and 3 Mosquitoes, the first section headed by the force leader and the second by the deputy leader.

28. Route. The first section was to fly at low level to the target by route "A" and the second by route "B". "C", "D", and "E" were return routes, which were allocated to the aircraft individually (Please see route map attached).

The "datum point" (52°10'N. 07°43'E) was about 3 miles N. of the target, and clear of light flak defences. A "parachute beacon" was to be released at this point by the deputy leader, and was to be orbited by aircraft awaiting their turn to attack. 3 other beacons were to be released (i) to mark a light flak position (ii) as a lead-in to the target (iii) several miles away as a diversion. These beacons had been designed for the purpose within the Group. Incendiaries were to be dropped if the beacons failed.

29. Method of Attack. All aircraft were to orbit the datum point beacon left-handed until instructed by the leader to go in to attack. During all the attacks the road bridge 850 yards N. of the aiming point was to be used as a guide for timing to the point of release. The force leader was to attack first, timing his bomb at a point 40ft. from the western bank of the canal. Each aircraft was to aim at this point until a breach had been made; thereafter the aircraft were to be ordered to attack the east bank and the west bank alternately. All attacks were to be made at a height of 150ft. above the surface, and at a ground speed of 180 m.p.h. If the canal began to drain, bombs were to be aimed at existing craters.

The 12,000lb. H.C. bomb was to be fitted with a special fuse, which gives a delay of 26-90 seconds. This would leave sufficient time for the attacking aircraft to get clear before the bomb exploded. The leader was to ensure that the interval between the attacking aircraft was not less than 2 minutes.

Zero hour was to be the time the aircraft crossed the enemy coast - approximately 0114 hours.

I.P.F. was not to be used on the outward journey, but normal procedure was to be followed on the homeward flight.

Co-operation with Fighters. The Mosquitoes were to orbit left-handed and the datum point, about 1,000ft. above the bombers, and were to be ready to carry out instructions from the force leader. They were to remain in the target area until the last aircraft had attacked. If the searchlight near the canal

...../exposed the force leader

exposed the force leader would order the fighters to extinguish it.

SORTIES

		<u>Loss.</u>	<u>Mos.</u>
34.	No. of aircraft despatched.....	3	6
	" " " reporting attack.....	2	N/
	" " abortive sorties (weather).....	1	0
	" " aircraft missing.....	5	0

WEATHER EXPERIENCED

35. Low cloud at 1,000ft. clearing during the attack. Thick haze reduced visibility to 1,000 yards, but this increased later to about 2 miles.

NARRATIVE OF ATTACK

36. The force leader was shot down by light flak over Nordhorn on the outwa route, but all the other aircraft reached the target area. Thick haze was encountered there, but despite this a determined effort was made to complete the operation. The parachute markers did not appear to be successful and incendiaries were dropped. The deputy leader directed the operation as efficiently as possible in the circumstances, and at least 2 and possibly 5 aircraft attacked. One bomb fell in the canal and another on the towpath. The other 3 possible attackers (including the deputy leader) failed to return, and the explosions of their bombs were not observed by the returning aircraft. The attack lasted for about 1½ hours.

37. The failure of the attack is attributed to the thick belt of haze in the target area.

ENEMY DEFENCES

38. Light flak was active at Nordhorn and in the target area, and on the return near Rheine. No enemy aircraft were encountered.

CASUALTIES

39. The leading aircraft was shot down by light flak when over Nordhorn, and the other 4 missing aircraft, including the deputy leader, are believed to have been brought down by light flak in the target area.

BERLIN

40. Berlin was bombed from high level, by 7 Mosquitoes. Visibility was good but no results were observed. One aircraft was hit by heavy flak in the target area.

LEAFLETS

41. 12 of 13 Wellingtons despatched scattered leaflets over towns in north France. The thirteenth returned early owing to engine trouble. Flak was reported from coastal regions, and in target areas, one Wellington being damaged. One aircraft was twice intercepted by enemy fighters which did not attack.

EMO/JT.
EC/S.2634,2/3/CRS, 9
16th. January, 1943. 4.

15/16th. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSED	DAMAGE			DIVERSTIONS		RESULTS	
				WELL AREA	ALT. AREA	OVER S.T.	NOT OVER S.T.		FLAK	FIGHTER	NOT R/A	ATTACK-ED	NOT ATTACK-ED		
MONTLUZON	8 PFF.	Hal.L.	14	14	-	-	1	-	-	-	-	-	-	P. 481.7 526.5 H. 2.2 5.5	
		Lanc.III	28	27	-	-	1	-	-	-	-	-	-		
	M.L.D. FORCE	Hal.L.	10	9	-	-	1	-	-	-	-	-	-	Heavy Bombs 12000lb.	
		Lanc.III	12	10	-	-	1	-	-	-	-	-	-		
	5	Stir.I	Hal.L.	4	4	-	-	2	1	1	-	1+1C +1B	1	2	P. 35
			Lanc.III	116	113	-	-	2	-	-	-	-	-	-	H. -
4	Hal.IIIV	Hal.L.	53	51	-	1	1	-	-	-	2	-	-	-	
		Lanc.III	68	65	-	-	4	1	-	-	-	-	4	-	
6	Hal.IIIV	Hal.L.	42	37	-	1	2	1	-	-	1C	-	3	-	
		Lanc.III	21	19	-	-	2	-	1	-	1E	-	1	-	
MONTLUZON TOTAL			369	348	-	3	15	3	2	-	2C+ 1B+1E	1	10		
U.S. B.C.			Fortress	5	5	-	-	-	-	-	-	-	-		

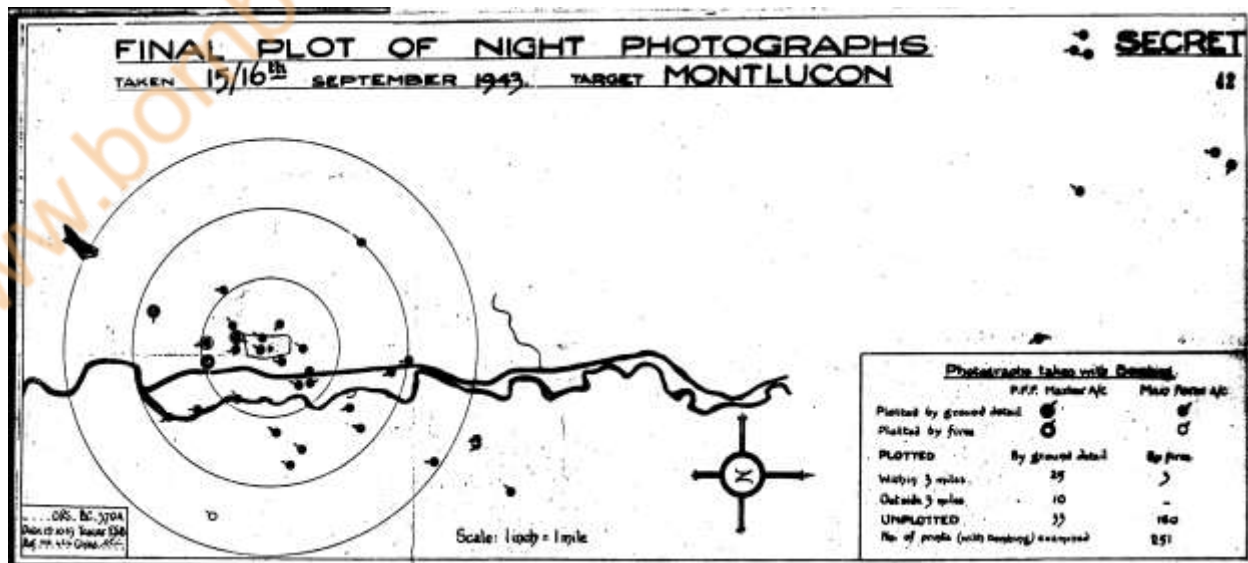
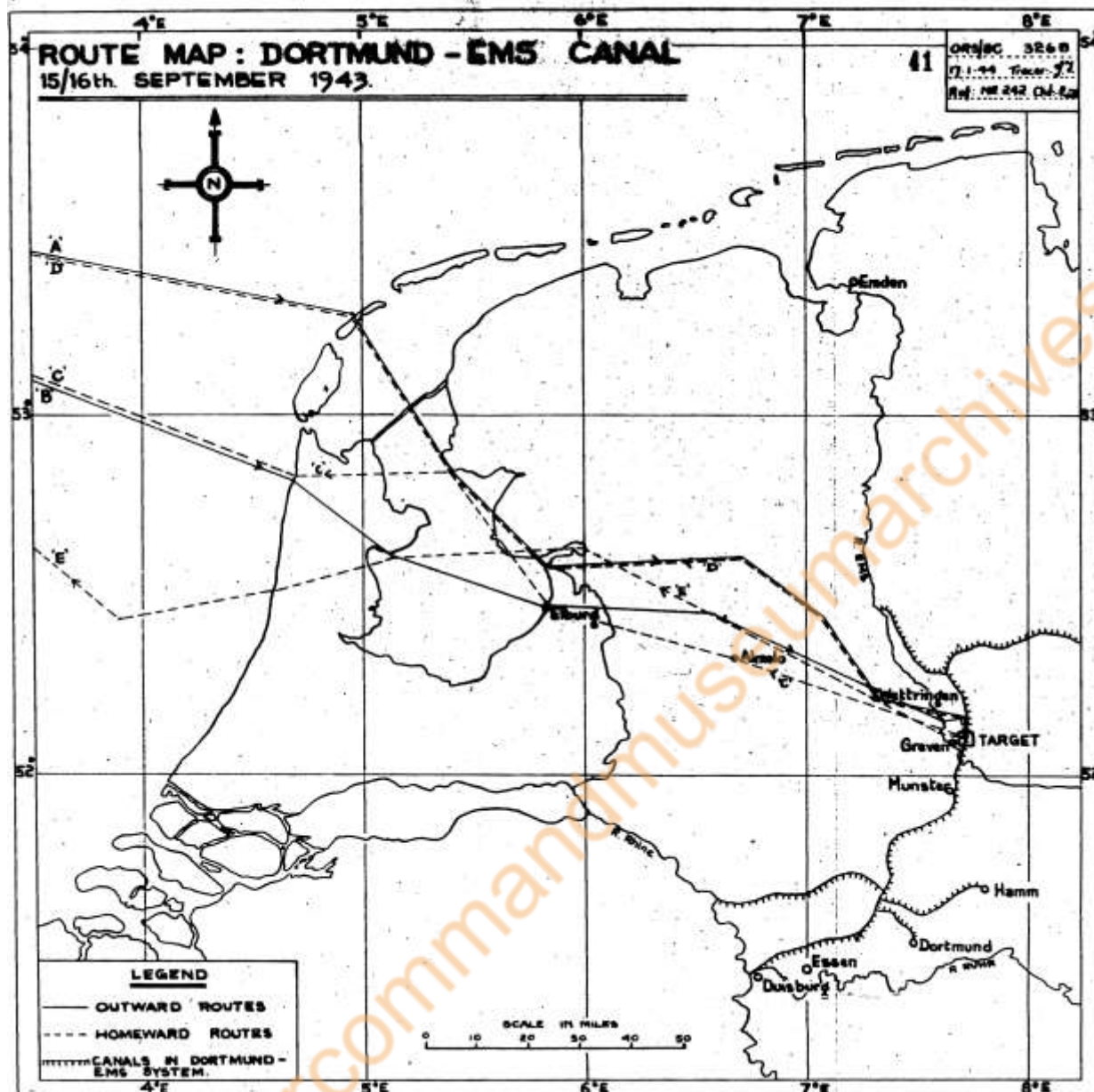
* NOT INCLUDED IN TOTAL

MONTLUZON: BERLIN: DORTMUND-ES G.L.I.: LE-FLETS:
15/16th. SEPTEMBER, 1943. (Contd.)

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSED	DAMAGE			DIVERSTIONS		RESULTS
				WELL AREA	ALT. AREA	OVER S.T.	NOT OVER S.T.		FLAK	FIGHTER	NOT R/A	ATTACK-ED	NOT ATTACK-ED	
MONTLUZON TOTAL			369	348	-	3	15	3	2	-	3+2C+ 1B+1E	1	10	
BERLIN	8 PFF	Moag-IV	7	7	-	-	-	-	1	-	-	-	-	P. 5.0
DORTMUND-ES	5	Lanc.III	8	2	-	1	-	-	-	-	-	-	-	(BOMB TOT.LB) (SEE BELOW)
G.L.I.	Fighter Command	Moag-II	6*	6*	-	-	-	-	-	-	-	-	-	
DORTMUND TOTAL			38*	357	-	4	15	8	3	-	3+2C+ 1B+1E	1	10	
LE-FLETS	91	Well.IC	1	1	-	-	-	-	-	-	-	-	-	DORTMUND-ES
REARMS	91	Well.Ic	1	1	-	-	-	-	1	-	-	-	-	Tons of Bombs
L.V.M.	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	H.E. Ino.
LE-FLETS	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	P. 10.7
L. FLEURS	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	2	M 26.7 1.2
LE-FLETS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	*One a/c carrying
LE-FLETS	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	5.4 tons H.E.
LE-FLETS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	(1x12,000)
LE-FLETS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	4 tons. Inc. was seen
LE-FLETS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	shot down before
LE-FLETS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	reaching target.
LE-FLETS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	Heavy Bombs
LE-FLETS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	12,000lbs.
LE-FLETS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	P. 2
LE-FLETS	92	Well.III	1	1	-	-	-	-	-	-	-	-	-	H. 5
LE-FLETS TOTAL			13	12	-	1	-	1	-	-	-	-	2	
TOTAL			397	369	-	4	16	8	4	-	3+2C+ 1B+1E	1	12	

* NOT INCLUDED IN TOTAL

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS

16/17th. SEPTEMBER, 1943.

MODANE: Anthoor Viaduct: Berlin: Leaflets:SUMMARYMODANE

1. A force of 34.5 heavy bombers, including 5 Fortresses of U.S.B.C., were sent to bomb the Modane marshalling yard. Most of the force bombed east of the target, possibly owing to the International Station being mistaken by the visual-markers for the marshalling yard, and the railway was not rendered impassable. 3 bombers were lost.

ANTHOOR VIADUCT

2. 12 Lancasters set out to make a low-level attack on the Anthoor Viaduct. The mission was completed by 10 aircraft, the attack being controlled by a Master Bomber. Several bombs fell within 30ft. of the target, but only slight damage was done. One bomber came down in the sea off Portugal.

BERLIN

3. 4 of 5 Mosquitoes despatched bombed Berlin from high level. One crashed on landing owing to damage by enemy aircraft.

LEAFLETS

4. 3 Wellingtons set out to scatter leaflets over northern France: 2 released their loads over the primary areas, and one over an alternative area,

WEATHER FORECAST

5. Estimated midnight position of front: Brest - Birmingham - Wash - 53°N. 05°E. - 55°N. 09°E. - 60°N. 12½°E. Wave development along the front makes the exact position uncertain. Estimated position of fronts at 04.00 hours: cold from Pennines - S.W. England, but may be as far E. as Gattorick - Bristol; warm E.W. across S. Yorkshire.

Home bases:- generally fit for take-off, with cloud base 1,500-2,000ft. and moderate visibility. Occasional light rain, especially in 4 and 6 Groups, where cloud base may fall to 1,000ft., with visibility 1-3 miles. For return , 5, 8 and East of 91 and 92 Groups: 7-10/10ths. strato-cumulus, base 1,500-2,000ft. locally 1,000ft. in occasional rain, tops 6,000ft. 10/10ths. medium cloud above, base 10-12,000ft., particularly N. of the Wash. Icing level 10,000ft. Visibility 2-6 miles, but poor locally in 4 and 6 Groups.

N.E. France, Low Countries and N. Germany: variable amounts of strato-cumulus. Central and S. France and central and S. Germany: small amounts of cloud. Alps: peaks clear. Plain of Lombardy: probably clear.

Route:- 8-10/10ths. strato-cumulus, base 1,500-2,000ft. tops 5-7,000ft., extending to 49°N. and breaking and dispersing further S. Over England, alto-cumulus, base 9-10,000ft., tops 16,000ft., with moderate icing extending 50½°N. Return route as outward.

Target: nil or small amounts of cloud at medium levels only. Moderate visibility.

...../Winds:

<u>Winds:</u>	<u>750mb.</u>	<u>500mb.</u>
Bases - 51°N	240°/35 m.p.h.	250°/45-50 m.p.h.
51°N-48°N	240°/20 m.p.h.	260°/25 m.p.h.
48°N - Target	Light variable	Light variable

NOTEPLAN OF ATTACK

6. Route : Pathfinders:- Selsey Bill - Cabourg - 47°35'N. 00°45'E - 45°12'N. 05°35'E - TARGET - 47°35'N. 01°20'E - Cabourg - Selsey Bill.

Main force:- Selsey Bill - Cabourg - 47°35'N. 00°45'E - 45°12'N. 05°42'E - TARGET - 47°35'N. 01°20'E - Cabourg - Selsey Bill.

7. Method of Attack (a) Red spot fires were to be dropped at 45°11'N. 05°45'E by all visual markers by means of an H2S fix on Grenoble. Visual confirmation might be obtained. The marking was to be maintained by 13 backers up.

(b) Visual-markers were to make a carefully timed run from the Grenoble route-markers, approaching on the correct heading, and were to attempt to identify the aiming-point visually. If it could be seen it was to be marked with T.I. red, and flares were to be retained. If the aiming-point could not be seen, white flares were to be dropped at 6 second intervals, the first 6 seconds before E.T.A; markers were to attempt to identify the aiming-point on a second run, and if seen, it was to be marked with T.I. red. If cloud made identification uncertain, any visual markers which had made a good time run from Grenoble might drop T.I. red on E.T.A.

(c) Backers-up were to aim T.I. green at T.I. red, or to overshoot the estimated centre of T.I. green by one second. Non-marking 8 Group aircraft were to identify visually if possible; otherwise to aim at the estimated centre of T.I. red. The rest of the main force were to aim at the estimated centre of T.I. green.

8. Timing Zero hour: 0001 hours Duration of attack: 2357-0028 hours

Pathfinder Force

10 visual markers (4 Hal: + 6 Lancs) at Z - 4
 4 backers-up (2 Hal: + 2 Lancs) at Z.
 2 " " (1 Hal: + 1 Lancs) at Z + 1
 23 " " (6 Hal: + 17 Lancs) from Z + 2 to Z + 24, one aircraft per minute.

Main Force

10 Hal: + 18 Lancs: of 8 Group at Z.
 35 Hal: + 26 Stir: from Z + 2 to Z + 7
 35 Hal: + 26 Stir: from Z + 7 to Z + 12
 35 Hal: + 25 Stir: + 5 Port: from Z + 12 to Z + 17
 36 Hal: + 26 Stir: from Z + 17 to Z + 22
 36 Hal: + 25 Stir: from Z + 22 to Z + 27

SORTIES

9. No. of aircraft despatched.....340+5^{*}
 " " " reporting attack on primary area.....292+5^{*} (85.7%)
 " " " " " alternative area..... 6 (1.8%)
 " " abortive sorties (technical and manipulative defects.....20)
 (gather.....17) .. 39 (11.5%)
 (late..... 2)
 " " aircraft missing.....3 (0.9%)

* Fortresses of U.S.A. B.C.

...../ALL OTHER EXPERIENCED

houses were destroyed or damaged, and the western end of a large industrial plant east of the loop was also damaged.

ALTERNATIVE TARGETS

15. 2 aircraft dropped their loads between Le Mans and Chateauroux and 4 between Montlucon and Lyons.

SPECIAL EQUIPMENT

16. H2S The 57 Y-type aircraft which were despatched used H2S as a navigational aid, and the 10 visual markers were briefed to drop route-markers on an H2S fix on Grenoble. 7 did this successfully, 2 retained their markers owing to the unsatisfactory performance of their sets and one returned early. Of the remainder, 40 reached the target with serviceable sets, 6 with unserviceable sets and one returned early.

17. GEE The Eastern Chain operated on the Wyoming frequency throughout, and the Southern Chain on Carolina throughout and on Zanesville from 2200 to 0300 hours. The Eastern Chain was used only over England. The Carolina signals were strong, but so was the jamming, which was encountered in the usual areas at the coast and south of Paris. At about 48°30'N. 00°30'E. most navigators changed to Zanesville, on which frequency the signals were strong but the jamming weak. Many fixes were plotted between 03°00'E. and the limit of the charts and the ranges obtained were excellent. Many navigators extended the lattice lines as far as the target.

ENEMY DEFENCES

18. Flak and Searchlights Light flak was encountered at several places en route, including Nevers, Lisieux, Mezières and Avord and heavy guns were in action at Lyons. A few searchlights exposed at Lisieux, Lyons and Avord. In the target area one heavy gun position 4.5 miles to the N. or N.W. was in action there were reports of other heavy guns in the marshalling yard, although some crews reported only one light gun there. 2 aircraft were hit by flak.

19. Fighters Intercepted wireless traffic provided little information on patrols, but one victory was claimed near Bernay. 15 interceptions (including 5 attacks) were reported, none being in the target area. 3 enemy aircraft were destroyed.

CASUALTIES

20.	No. of aircraft missing.....	3	(0.9%)
	" " " damaged (flak..... 2)		
	(fighters.....Nil).....	6	(1.8%)
	(other causes.....4)		

It was estimated that 2 aircraft were shot down by flak in the Caen-Le Havre area, one outbound and the other homebound. One bomber may have been destroyed by a fighter over Bernay, on the return route. 2 aircraft were destroyed when they crashed on the return, another was hit by incendiaries and a fourth by fire from a Stirling.

THESE VILLAGE

PLAN OF ATTACK

21. Route: Selsey Bill - Caudebec - 47°35'N. 00°45'E - 45°12'N. 05°42'E
Cap Ferrat - TARGET - St. Raphael - 46°30'N. 01°00'E - 46°30'N. 02°30'W -
48°15'N. 05°50'W - Predanneck.

22. Method of Attack To ensure correct identification the force was to assemble under R/T control at a prominent landmark just off the coast, namely the Ile St. Marguerite and Ile St. Honorat, and under the orders of the leader were to fly an accurate course from a point on the Ile St. Honorate, via the Point du Caphoix and a marked datum point on the mainland, to the target.

..../23. The attack was to

The attack was to be carried out at an acute angle to the viaduct, so that bombs would not skid through the arches. In addition advantage could then more easily be taken of the valley behind the viaduct to avoid flying into the high ground beyond it. The leader was to order bombing at one minute intervals to ensure that the whole force could get clear before the bombs (with 30 minute delay fusing) started to explode. The leader was also instructed to remain in the target area until the attack was completed and to observe the results of the bombing before leaving.

RESULTS

No. of aircraft despatched.....	12
" " " reporting attack on primary area.....	10 ^x (83.3%)
" " abortive sorties (icing).....	2 (16.7%)
" " aircraft missing.....	1 (8.3%)

^x Including the missing aircraft which is known to have bombed.

OTHER EXPERIENCED

Home Bases: as for Modane (para.10)

Route: as for Modane, but severe icing experienced in cloud, the height which increased progressively along track.

Target: no cloud; excellent visibility; brilliant moonlight.

NIGHT PHOTOGRAPHIC STATISTICS

No photographs were taken.

CHARACTERISTICS OF ATTACK

The wind en route was more southerly than forecast, with the result that the aircraft were late in reaching the rendezvous over the islands off Cannes. However, since the planned indicated airspeed was used by the aircraft, they all arrived at about the same time. The Master Bomber, however, waited until all aircraft reaching the target area had replied on R/T before ordering the first aircraft to bomb. The leader's V.H.F. R/T transmitter became unserviceable during the attack, but his deputy took over successfully. The attack went smoothly and according to plan, at least one explosion being seen near the viaduct, which was clearly visible in the bright moonlight, rendering additional illumination unnecessary. Only 3 bombs were seen to fall in the sea.

POST-ATTACK RECONNAISSANCE

Photographs covering the viaduct and buildings to the west showed 3 large craters in the Grand Corniche Road, one being only about 15ft. from the viaduct and another 25ft. The masonry at the base of the most northerly pier of the viaduct appeared to be damaged. 2 buildings east of the viaduct and about 15 yards to the west were destroyed or damaged, and at least 17 craters were seen in open ground.

ENEMY DEFENCES

Neither flak nor searchlights were reported and only one enemy fighter approached the bombers.

REMARKS

No damage was sustained by the returning aircraft. One Lancaster came down in the sea off Oporto, owing to a navigational error, the crew being rescued by the Portuguese.

BERLIN

31. 6 Mosquitoes set out to deliver an anti-morale attack on Berlin. 5 completed the task, bombing on a D.R. run from the last GEE fix through 10/10th. cloud and the sixth returned early owing to a technical defect. One aircraft which was attacked and damaged by a fighter over the target crashed on landing.

LEAFLETS

32. 3 Wellingtons were despatched to drop leaflets over Angers and Rennes. 2 aircraft reached their targets and the third jettisoned its bundles over Chateau Gautier. No damage was sustained by any of the aircraft.

RMO/JT.
BO/S. 26342/3/ORS3,
14th. January, 1944.

107100 SEP 1944

TARGET	GROUP	TYPE	SORTIE	✓/C REPORTING ATTACK ON		ABORTED SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS		
				PRDL ARE.	OT. ARE.	OVER E.T.	NOV OVER E.T.		FLAK	FIGHTER	NOT R/O.	ATTACK- ED	NOT ATTACK- ED	Tons of Bombs H.E. INC.		
MID.WE	USABC	Fortress	5	5	-	-	-	-	-	-	-	-	-	-	-	
MID.WE	8 PFF	Hal. IA	11	10	1	-	-	-	-	-	-	-	-	P.	56.1 73.6	
		Lanc. III	25	25	-	-	-	-	-	-	1	-	-	...	7.6 1.5	
	8 MAIN FORCE	Hal. Ia	10	10	-	-	-	-	-	-	-	-	-	-	-	
		Lanc. I	1	1	-	-	-	-	-	-	-	-	-	-	-	
	3	Lanc. III	17	16	-	-	-	-	-	-	-	-	-	-	-	
		Stir. I	4	3	-	-	-	-	-	-	-	-	-	-	-	
	4	Stir. III	123	116	-	-	3	3	1	1	-	1+1E	2	4	P.	42 4000lb.
		Hal. II&V	39	26	2	5	6	-	1	-	-	-	1	1	...	-
6	Hal. Ia	54	43	2	7	1	1	-	-	1E	1	-	-	...	-	
	Hal. II&V	36	29	-	4	3	-	-	-	-	-	-	4	...	-	
		Hal. Ia	20	15	1	3	2	1	-	-	-	2	-	...	-	
MID.WE TOTAL			340	292	6	22	17	3	2	-	2+2E	5	10		Tons of Bombs	
BERLIN	8 PFF	Mosq. IV	5	4	-	-	1	-	-	1E*	-	1	-	P.	2.8 H.E.	
ANGERS VILLAGE	5	Lanc. III	12	9	-	2	-	1	-	-	-	-	1	P.	28.1 3.1 3.1	
BOMBING TOTAL			357	305	6	24	18	4	2	1E*	-	6	11		Heavy Bombs 4000lb.	
LEAFLETS ANGERS	91	Well. III	2	1	1	-	-	-	-	-	-	-	-	P.	7 4000lb.	
RENNES	91	Well. III	1	1	-	-	-	-	-	-	-	-	-	A.	1	
LEAFLET TOTAL			3	2	1	-	-	-	-	-	-	-	-	M.	1	
TOTAL			360	307	7	24	18	4	2	1E*	2+2E	6	11			

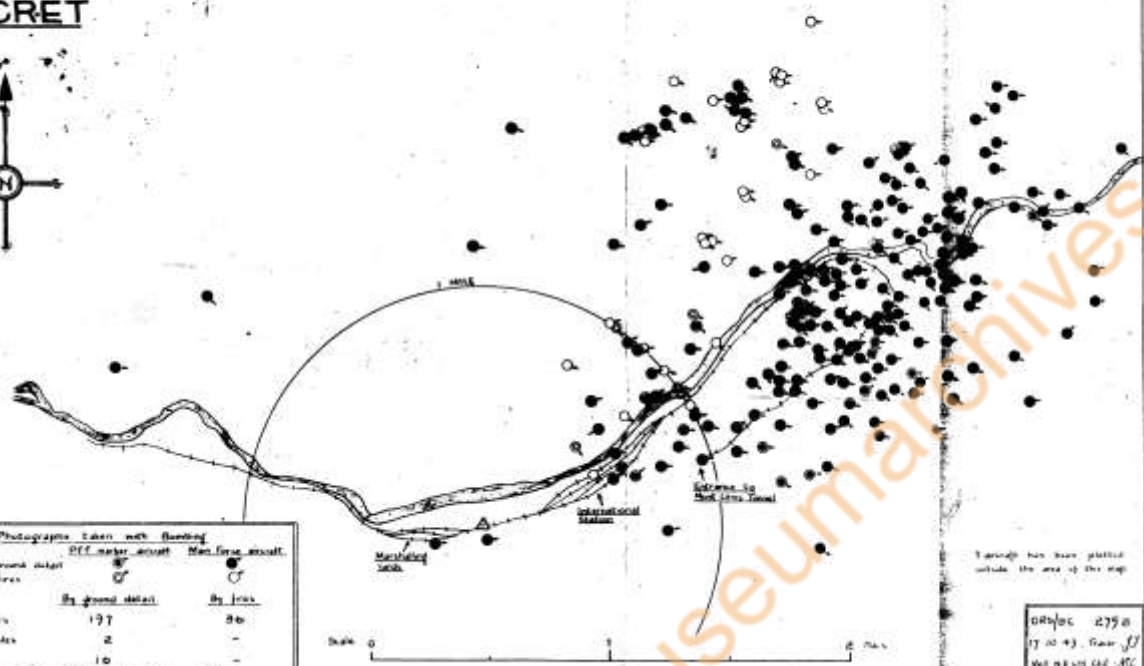
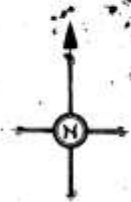
* NOT INCLUDED IN TOTAL.

* ALSO HIT BY FLAK.

RAID TRACK NOT AVAILABLE

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 16/17 SEPTEMBER 1943 TARGET: MODANE

SECRET



Photographs taken with bombing

	By ground detail	By air
Plotted by ground detail	87	0
Plotted by air	0	0
Total	87	0
Within 3 miles	177	0
Outside 3 miles	2	-
Unplotted	10	-
No. of prints (with bombing)	1,000	251

Targets have been plotted outside the area of the map

04750
 17 10 43. Date 1/1
 Map No. 100 040 100

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS17/18th. SEPTEMBER, 1943.Berlin: Minelaying:SUMMARYBerlin

1. 6 P.F.F. Mosquitoes carried out a harassing raid on Berlin without incident.

Minelaying

2. 8 Wellingtons laid 16 mines off Brest. All returned undamaged.

WEATHER FORECAST

3. Midnight frontal positions:- (1) occlusion from 62°N. 05°W. to 61°N. 05°E. to 58°N. 15°E. to Danzig (2) cold from 62°N. 05°W. to 60°N. 05°W. to 56°N. 05°W. to 53°N. 10°W. (3) frontal trough with occlusion from 57°N. 00½°W. to Hull to Isle of Wight to Bordeaux.

Bases: residual thunder cloud and rain locally. Cloud will disperse late in night. Frontal belt will lie across East Anglia at 0400, with bases generally fit to the west.

Germany:- much cloud above 25,000' in N.W., with broken layers below, giving very variable amounts and thicknesses at any one time over any given area. Base of lowest cloud probably above 3-5,000'. Local thunderstorms and residual thunder cloud over rest of Germany.

France: local thunderstorms. W. coast: convection cloud, showers, good visibility.

SORTIES

	<u>Berlin</u>	<u>Minelaying</u>
4. (a) No. of aircraft despatched.....	6	8
(b) " " " reaching primary area.....	6	8
(c) " " " missing.....	0	0
(d) " " mines laid.....		16

WEATHER EXPERIENCED

5. Berlin: 10/10ths. alto-cumulus, breaking in places to 3-5/10ths. Good visibility. ¾ moon.

Brest: 2-5/10ths. patchy cumulus, base 3,000'. Good visibility. ¾ moon.

ENEMY DEFENCES

6. Searchlights and a moderate amount of flak were encountered at Berlin, and en route from Hannover and Braunschweig. Minelayers were engaged by a little inaccurate flak from the usual places. No fighters were attacked although one interception was reported by a Wellington.

7. All our aircraft returned undamaged.

MM/JT.
EC/S. 26342/4/ORS3,
3rd. November, 1943.

BERLIN: Minelaying:

17/18th. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS Tons of Bombs H.E.
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT K/A	ATTACK- ED	NOT ATTACK- ED	
BERLIN	5 EFF.	Mosq. IV	6	6	-	-	-	-	-	-	-	-	-	P. 4.4
<u>MINELAYING</u>														
RUSSIA	6	Yall. X	8	8	-	-	-	-	-	-	-	-	1	15 mines
TOTAL:			14	14	-	-	-	-	-	-	-	-	1	

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS

18/19th. SEPTEMBER, 1943.

COLOGNE: Mineslaying

SUMMARY

- 1. Cologne 5 P.F.F. Mosquitoes attacked Cologne without loss.
- 2. Mineslaying 45 Stirlings, Wellingtons and Lancasters laid 118 mines off the coast and the French Atlantic ports. 4 other aircraft returned early. None were lost.

WEATHER FORECAST

Midnight frontal positions: (1) warm from 62°N. 05°E. to N. Yorkshire to England (2) cold from 66°N. 10°E. to 50°N. 12°E. to W. Alps.

Bases: mainly fit all night. Risk of cloud patches at 600' in evening. Light showers near warm front, but cloud base should remain above 1,000' in E. Visibility moderate, 1 mile in smoky localities.

Germany:- thin strato-cumulus over coast W. of cold front, becoming well broken inland. Belt of multi-layered cloud just W. of front; thundery cloud, tops above 20,000', in frontal zone. E. of the front: residual convection cloud, with thunderstorms persisting into the night.

N. Italy: much medium cloud. Thunder cloud over Alps.

France: little cloud inland. West: 5-8/10ths. cloud, mainly strato-cumulus, base 1,500-2,000', tops below 12,000'; some medium cloud at 10-18,000', possibly with icing. Very well broken cloud S. of Nantes. Isolated thunderstorms in Channel en route.

Frisians: much cloud, base 600-1,000', tops 10,000'. Moderate visibility.

RESULTS

	<u>Cologne</u>	<u>Mineslaying</u>
(a) No. of aircraft despatched.....	5	49
(b) " " " reaching primary area.....	5	45
(c) " " abortive sorties.....	0	4 icing
(d) " " aircraft missing.....	0	0
(e) " " mines laid.....		118

WEATHER EXPERIENCED

Bases: local mist and fog formed before midnight, becoming general by 0100 hours in 3 and 8 Groups, and widespread in all operational areas by 0400 hours, apart from 1 and 6 Groups and the west of 4 Group. Patches of low stratus and light showers in 1 and 5 Groups from 2400-0300 hours. Local thunderstorms in S. and S.E.

Ruhr: broken cloud in 3 layers - 5/10ths., tops 15,000'; 5/10ths. tops, 10,000'; 1/10ths., tops 3,000'. No moon. Visibility good.

Frisians: 4-6/10ths. at 2-3,000'. No moon. Fair visibility.

W. France: little cloud. Good visibility. Nearly full moon, rising as aircraft reached their targets. Isolated thunderstorms en route across France.

...../ENEMY DEFENCES

ENEMY DEFENCES.

6. Fighter activity was overheard from N.W. Germany, Holland and the West peninsula, but no enemy aircraft were seen. Intense light and heavy flak was encountered from coastal points in the Bay of Biscay, particularly Cannes, Lorient and St. Nazaire.

CASUALTIES.

7. No aircraft was lost on this night. 2 sustained damage from flak over the French Atlantic coast.

MIM/JT.

BC/3.26342/4/ORS3.

6th. November. 1943.

TARGET	GROUP	TYPE	SORTIES	✓/O		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS Type of Bomb K.M.	
				ATTACKED	NOT	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FLIGHTER	NOT R/L	ATTACKED	NOT ATTACKED		
COLOGNE	8 YFP	Mosq. IV	5	5	-	-	-	-	-	-	-	-	-	-	P. 3.2
INDREVAUX ST. NAZAIRE	1	Well. X	8	8	-	-	-	-	1+0	-	-	-	-	-	15 mines
LORIENT	1	Well. X	9	9	-	-	-	-	-	-	-	-	-	-	18 mines
M. PALLICE	3	Str. III	9	6	-	-	3	-	-	-	-	-	-	-	24 mines
GLOROUS R.	3	Str. III	7	6	-	-	1	-	-	-	-	-	-	-	21 mines
		Lanc. II	2	2	-	-	-	-	1	-	-	-	-	-	12 mines
FRIELJES	1	Well. X	8	8	-	-	-	-	-	-	-	-	-	-	16 mines
	6	Well. X	6	6	-	-	-	-	-	-	-	-	-	-	12 mines
DAILY TOTAL			49	45	-	-	4	-	1+1,0	-	-	-	-	-	118 mines
TOTAL			54	50	-	-	4	-	1+1,0	-	-	-	-	-	

BOMBER COMMAND REPORT ON NIGHT OPERATIONS

20/21st. SEPTEMBER, 1943.

Berlin: Minelaying: Leaflets:

SUMMARY

1. Berlin 8 Mosquitoes carried out a successful harassing raid on Berlin. None were lost.
2. Minelaying 17 Wellingtons laid 34 mines off the French Atlantic ports. 3 other sorties were abortive. No casualties were sustained.
3. Leaflets 17 Wellingtons, out of a force of 21, dispersed leaflets over towns in Northern France. All returned safely.

WEATHER FORECAST

4. Midnight frontal positions: (1) occlusion from 60°N. 21°E. to 55°N. 16°E. to 50°N. 09°E. to 48°N. 04°E., becoming (2) cold to Nantes and (3) warm to La Pallice.

Bases: cloud breaking up at dusk, with good visibility; increasing at times to 6-9/10ths. between 0300 and 0500 in Northern Groups, and after 0500 in Southern Groups, during the passage of the secondary cold front.

Germany: cloud in several layers along the front, solid in places. Convection cloud to the North, tops below 15,000' inland, but towering to great heights over North Sea. Well broken medium cloud in S. and S.W.

N. Italy: doubtful, probably broken medium cloud.

France: cloud should have broken behind the cold front at Brest by 2130, leaving 5-8/10ths., base 1,500-2,000', with good visibility. Le Talut will clear by midnight. Variable amounts of medium cloud over Channel, tops 10-12,000'.

Sorties		<u>Berlin</u>	<u>Minelaying</u>	<u>Leaflets</u>
5.	(a) No. of aircraft despatched.....	8	20	21
	(b) " " " reaching primary area ..	8	17	17
	(c) " " abortive sorties.....	0	3 (tech.def.3)	4 (sick....1)
	(d) " " aircraft missing.....	0	0	0
	(e) " " mines laid.....		34	

WEATHER EXPERIENCE

6. Berlin: small amounts of cirrus, 3/10ths. strato-cumulus, tops 10,500'. Hazy. Half moon. Visibility good. Route: 10/10ths. cumulus to 15,000' over North Sea and occasionally 10/10ths. over Baltic; well broken elsewhere, and over North Sea on return.

Brest: 9/10ths. cumulus, base 1,000', tops 3,500', patches of stratus at 500-1,000'. Visibility good out of cloud. No moon.

Lorient-St. Nazaire: 8/10ths. strato-cumulus at 2,000'. Half moon. Visibility moderate. Broken cumulus and strato-cumulus over Channel.

...../N. France.

N. France (leaflets): 10/10ths. cloud.

ENEMY DEFENCES

7. Some activity by controlled night fighters was heard from Holland N.W. Germany, but no twin-engined aircraft were encountered and the only fighters observed, one near Cherbourg and the other over the Zuyver Zee, both single-engined. Flak was fired from points on the French coast, everywhere slight. Mosquitoes were engaged by accurate heavy flak over

CASUALTIES

8. All our aircraft returned safely. A Mosquito was hit by flak over Berlin, and a Wellington sustained minor damage not caused by enemy action.

MLH/JT.
EC/S. 26342/1./ORS3,
6th. November, 1943.

SQUADRON	GROUP	TYPE	SQUADS	NO. REPORTING		ABORTIVE		MISSING	DAMAGE			DESCRIPTIONS		REMARKS Tone of bombs H. K.
				ATTACK ON ENEMY	DEF. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTERS	NOT K/A	ATTACK- ED	NOT ATTACK- ED	
REMIAN	8 FFF	Mosq. IV	8	8	-	-	-	-	1	-	-	-	-	F. 5-8
MINGAYING														12 mines
LOHREY	1	Well. I	6	6	-	-	-	-	-	-	-	-	-	10 mines
ST. MARSH	1	Well. I	6	6	-	-	-	-	-	-	-	-	-	12 mines
BRIST	6	Well. I	6	6	-	-	-	-	-	-	-	-	-	12 mines
MINGAYING TOTAL			20	17	-	-	3	-	-	-	-	-	-	34 mines
LE. PIERRE														
LE. PIERRE	93	Well. III	2	2	-	-	-	-	-	-	-	-	-	
LAVAL	93	Well. III	1	1	-	-	-	-	-	-	1	-	-	
		Well. I	2	2	-	-	-	-	-	-	-	-	-	
LE. MARC	93	Well. I	3	3	-	-	-	-	-	-	-	-	-	
LE. MARC	93	Well. I	2	2	-	-	-	-	-	-	-	-	-	
LE. MARC	93	Well. III	1	1	-	-	-	-	-	-	-	-	-	
		Well. I	1	1	-	-	-	-	-	-	-	-	-	
CHATELAIN	93	Well. III	2	2	-	-	-	-	-	-	-	-	-	
CHATELAIN	93	Well. III	1	1	-	-	-	-	-	-	-	-	-	
		Well. I	2	2	-	-	-	-	-	-	-	-	-	
ST. MARTIN	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	
ST. MARTIN	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	
LE. ON	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	
COMPIEGNE	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	
LE. PIERRE TOTAL			21	17	-	-	4	-	-	-	1	-	-	
TOTAL			49	42	-	-	7	-	1	-	1	-	-	

BOMBER COMMAND REPORT ON NIGHT OPERATIONS

21/22nd. SEPTEMBER, 1943.

Minelaying: Leaflets:

SUMMARY

1. Minelaying 25 aircraft, out of a force of 26, laid 116 mines off Brest and the Frisians. All returned undamaged.
2. Leaflets 2 aircraft from Training Groups dispersed leaflets over Leon and Compeigne. A third sortie was abortive. All returned safely.

WEATHER FORECAST

3. Bases:- Fit all night, with variable layer and convection cloud, and showers near East Coast. Visibility moderate to good.
 Germany:- Much layer and convection cloud everywhere. Tops above 20,000' in N. Ruhr and Upper Rhine may have strato-cumulus only, generally 3-4,000' thick. Some cumulus tops to 10-15,000'. Large amounts of heavy convection cloud in Bight area, tops to 25,000'. Inland towards Berlin, cloud may disperse or become layered.
 N. Italy: Well broken medium cloud. Much layer cloud over alps, tops 10-15,000'; peaks clear.
 France:- 6-9/10ths. strato-cumulus, base 1,500' or above.
 Frisians:- 8-10/10ths. cloud base 1,000-1,500' except in showers. Risk of squally conditions E. of 05°E.
 N.W. Baltic:- Heavy showers, cloud below 1,000' at times. Freezing level 3,000'.

ACTIVITIES

	<u>Minelaying</u>	<u>Leaflets</u>
(a) No. of aircraft despatched.....	26	3
(b) " " " reaching primary area.....	25	2
(c) " " abortive sorties.....(GEE u/s)...	1	1 (leaflets hung up)
(d) " " aircraft missing.....	0	0
(e) " " mines laid.....	116	

OTHER EXPERIENCED

- Bases:- Cloud dispersed at dusk to small amounts. Much fog towards dawn W. and S. Midlands.
- Brest:- Very small amounts of broken cloud at 2,000'. Excellent visibility.
- Frisians:- 4-5/10ths. cloud, base 2,500'. Very dark. Poor visibility. No moon.

ENEMY DEFENCES

No opposition was reported.

CASUALTIES

None.
 /JT.
 10/0/0R33,
 November, 1943.

REPORTING: LEAFLETS:

27

21/22nd. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING		A/C REPORTING		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIN. JOK.	SEC. JOK.	OVER EXHAUSTED	NOT OVER EXHAUSTED		FLY	FIGHTING	NOT F/a	NOT DOWN	NOT DOWN	
WELL-YING	1	Well-X	7	7	-	-	-	-	-	-	-	-	-	13 mines
WISLINS	1	Lanc-I	2	2	-	-	-	-	-	-	-	-	-	12 mines
		Lanc-III	4	4	-	-	-	-	-	-	-	-	-	24 mines
	3	Str-I	1	1	-	-	-	-	-	-	-	-	-	6 mines
		Str-III	12	11	-	-	1	-	-	-	-	-	-	61 mines
MIDEL-YING TOTAL			26	25	-	-	1	-	-	-	-	-	-	116 mines
LEAFLETS	92	Well-III	1	1	-	-	-	-	-	-	-	-	-	
LEAF	92	Well-III	1	1	-	-	-	-	-	-	-	-	-	
COMPEIGNER	92	Well-III	1	-	-	1	-	-	-	-	-	-	-	
CARDINAL	92	Well-III	1	-	-	-	-	-	-	-	-	-	-	
LEAFLET TOTAL			3	2	-	1	-	-	-	-	-	-	-	
TOTAL			29	27	-	1	1	-	-	-	-	-	-	

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS

22/23rd SEPTEMBER, 1943.

HANNOVER ; Oldenburg ; Emden ; Hinkelving ; Leaflets.SUMMARY.HANNOVER

A force of 711 heavy bombers attacked Hannover in good weather. Owing, however, to a stronger wind than was forecast, and to the backers-up aiming their bombs at reds, instead of at the yellows, which were accurately dropped by the visual markers, most of the attack fell 2-5 miles S.S.E. of the aiming-point. Industrial damage included the destruction of several buildings of the Wellenscherei and Kamperei Döhren. Night fighters were very active, particularly in the target area, and probably shot down at least half of the 25 missing aircraft. 8 attacks by enemy intruders over home bases were reported.

OLDENBURG

29 Lancasters and Mosquitoes made a "spoof" attack on Oldenburg, causing little damage in the town. All the aircraft attacked the primary target and returned undamaged.

EMDEN

12 O.K.E. Mosquitoes attacked Emden, the majority bombing on E.T.A. or usually owing to partial or complete failure of the precision device. All returned undamaged.

HINKELVING

4 Stirlings were despatched to lay mines off the Frisian Islands. 2 completed the task, dropping 10 mines, and 2 returned early.

LEAFLETS

7 Whitleys set out to scatter leaflets over towns in Northern France, and were successful. None of the aircraft was damaged.

WEATHER FORECAST

Estimated midnight position of (1) warm front 63°N . 05°E - 60°N . $02\frac{1}{2}^{\circ}\text{E}$ - north of Perth - S.W. Scotland; (2) occluded front 57°N . 20°E - 50°N . $12\frac{1}{2}^{\circ}\text{E}$ - 49°N . 10°E - S.W. France.

Home Bases:- increasing cloud at medium levels in the N., cloud largely clearing in the S; visibility moderate, but valley fog locally towards dawn in the S. Bases should be fit throughout period of operations and up to dawn, but not free from local smoke troubles, mainly in Training Groups. Little or no rain anywhere.

France:- broken convection cloud in N.W; much medium cloud in centre; misty conditions in S.

Germany:- sheet of medium cloud over central Germany, S. of Hannover and Ruhr, where there will be only residual convection cloud.

Route and Target: about 5/10ths. cumulus and strato-cumulus, tops 6,000 ft. and not more than 10,000 ft., in E., decreasing inland and becoming locally less than 5/10ths but very variable and may be completely clear at times.

<u>Winds:</u>	<u>750 mb.</u>	<u>500 mb.</u>	<u>300 mb.</u>
Bases - 8°E.	360°/30 m.p.h.	010°/60 m.p.h.	020°/50-80 m.p.h.
8°E - Hannover	350°/20 m.p.h.	310°/25 m.p.h.	360°/40 m.p.h.

Bases on return: 320°/30 m.p.h. at 750 mb.
 Average wind on return: 360°/50 m.p.h. at 500 mb.

HANNOVER

PLAN OF ATTACK

7. Route: East coast - 53°50'N. 04°00'E - 52°40'N. 09°20'E - TARGET - 52°10'N. 09°45'E - 53°40'N. 04°00'E - East coast. (Blind markers and supporters straight to TARGET from 53°50'N. 04°00'E).

8. Method of Attack Blind-markers (Y-type aircraft) were to mark the aiming-point with T.I. red, using their special equipment, checked by a carefully timed run from the centre of the Steinhuder Meer. Bundles of flares were to be dropped at 10, 6, 6 second intervals, the first 10 seconds before the T.I. Visual-markers were to mark the aiming-point with T.I. yellow and T.I. green, dropping flares if necessary. If unable to identify visually they were to act as backers-up, retaining their T.I. yellow and aiming T.I. green to overshoot the estimated centre of T.I. red by 3 seconds. The backers-up were to maintain the marking with T.I. green, aiming (i) at T.I. yellow, (ii) to overshoot the estimated centre of (a) T.I. red or (b) T.I. green by 2 seconds.

Supporters, carrying H.E. only, were to identify visually if possible, otherwise they were to aim at the estimated centre of T.I. red or at T.I. yellow. The main force were to aim at the estimated centre of all T.I. green.

All Y-type aircraft with qualified crews were to carry 1 flare (red with green stars) for use if cloud conditions necessitated it.

9. Timing: Zero hour: 2130 hours: Duration of attack: 2126-2155

Pathfinder Force

24 blind-markers (5 Hal: + 19 Lanc:) at Z - 4
 8 visual-markers (2 Hal: + 6 Lanc:) at Z - 3
 4 backers-up (1 Hal: + 3 Lanc:) at Z
 3 " " (1 Hal: + 2 Lanc:) at Z + 1
 21 " " (3 Hal: + 18 Lanc:) from Z + 2 to Z + 22, one per minute.

Main Force

Supporters (8 Group) (9 Hal: + 12 Lanc:) at Z - 4
 1st. Wave (133 Lanc:) from Z + 2 to Z + 7
 2nd. Wave (30 Well: + 139 Stir:) from Z + 7 to Z + 13
 3rd. Wave (208 Hal:) from Z + 13 to Z + 20
 4th. Wave (133 Lancs: + 5 Forts:) from Z + 20 to Z + 25

10. Tactics WINDOW was to be dropped from about 04°00'E to 20 miles from the target at one bundle per 2 minutes; within 20 miles of the target at 2 bundles per minute; from 20 miles from the target to 04°00'E at one bundle per minute.

A "spoof" attack was to be carried out by 8 Group on Oldenburg.

RESULTS

No. of aircraft despatched.....	711
" " " reporting attack on primary area.....	632 (88.8%)
" " " " " alternative area.....	10 (1.5%)
" " abortive sorties (technical & manipulative defects..38)	
{ crew failure..... 2	
{ crashed soon after take-off..... 1	44 (6.2%)
{ attacked by fighters..... 1	
{ caught in searchlights..... 1	
{ late..... 1	
" " aircraft missing.....	25 (3.5%)

OTHER EXPERIENCED

Home bases: local smoke, mist and fog near larger industrial areas during operation; otherwise visibility moderate to good. Little cloud generally, except in northern Groups, where medium cloud increased from the N.W.

Route: small amounts of cloud on outward route, with isolated patches of 6/10ths. cumulus and strato-cumulus tops 5-8,000ft. On return, cloud increased to 5-9/10ths., tops 5-8,000ft., with many clear areas. Half moon, rising about midnight.

Hannover: cloudless. Moderate to good visibility at first, deteriorating during the attack owing to smoke. No moon.

Wind at 20,000ft.: 330°/40-45 m.p.h. from bases to Dutch Coast.
340°/50-55 m.p.h. from Dutch Coast to near target.
360°/60 m.p.h. over target.

LIGHT PHOTOGRAPHIC EVIDENCE

No. of photographs with bombing examined.....	497
" " " showing ground detail (plotted within 3 miles..50)	
{ " outside 3 miles..64	132
{ unplotted.....18	
" " " " fire-tracks..... (plotted within 3 miles..80)	
{ " outside 3 miles..285	365
{ unplotted.....NIL	
" " aircraft estimated, from the photographic evidence to have bombed within 3 miles of the aiming-point.....	150

NARRATIVE OF ATTACK

The blind-markers appear to have dropped their T.I. red and flares about 4 miles N.E. of the aiming-point, the marking being somewhat scattered. The ground-markers, with the help of their own flares, marked the aiming-point separately with T.I. yellow and T.I. green, but all but 2 of the back-up seem to have aimed at the greatest concentration of T.I., irrespective of colour, instead of backing-up the yellows. In addition the wind was unexpectedly high, and many aircraft approached the target on the wrong track. The main force, bombing on the wrong track, were thus led astray, and the main weight of the attack fell 2 to 5 miles N.E. of the A.P. Towards the end of the raid the bombing spread as far as 9 miles from the aiming-point. As a result some 2,500 tons of bombs were dropped mainly in suburban areas and open country, the most significant damage being the destruction of several main buildings of Woll-Wascherei und Kammerei Döhren.

RECONSTRUCTION

The damage seen was chiefly caused by fire, and was concentrated in the suburbs of Döhren and Wülfel, some 2½ to 4½ miles S.S.E. of the town centre. In this area some of the main buildings of Woll-Wascherei und Kammerei Döhren (priority 1) and the greater part of Eisensarke, Wülfel (priority 2) were destroyed by fire. Both these works and many others in this area were still burning at the time of photography. In the S.E. of the town centre there was considerable damage

...../near the railway fork,

near the railway fork, but otherwise there were few incidents. Some of these might have been the result of a previous attack. 2 hits on the Oil Refinery at Misburghave caused minor damage. In all 54 factories or industrial premises were affected, the majority of them being unratel.

16. Damage to railway property included the destruction by fire of several sheds and buildings and some rolling-stock at Wülfel Bahnhof. A hit near a road bridge at Döhren caused the collapse of the spurs carrying the 2 central tracks and the line was completely blocked. The little residential and business property damaged was mainly in the suburbs of Wülfel and Döhren, but there were a few scattered incidents in the town centre.

ALTERNATIVE TARGETS

17. 10 aircraft dropped their loads in the areas of Hildesheim, Neustadt, Springe, Emden (2), Groningen, Loningen, Boksum, Schiermonnikoog and Vlieland.

SPECIAL EQUIPMENT

18. H2S 20 of the 22 Y-type aircraft despatched as blind-marker illuminators reported attack. The serviceability of H2S was very low, 10 aircraft having unserviceable sets in the target area. Both T.I. and flares were dropped on H2S by 9 aircraft, and on existing T.I. by another, whose set was unserviceable. One other aircraft dropped T.I. and 3 released flares, all aiming at markers already down. Almost all the blind-marker illuminators appear to have bombed 3 to 4 miles S. or S.E. of the target. This may have been due to using an incorrect wind for their D.R. run from the Steinhuder Meer, owing to the great difference between the forecast and actual wind in the target area; also at least 2 crews misunderstood their instructions and started the D.R. run from the wrong point. Hannover is a straggling town and it is likely that crews were influenced by the result of their inaccurate D.R. run in choosing which part of the image to regard as the town centre.

19. 44 aircraft carrying H2S as an aid to navigation reached the target with serviceable sets. 2 used it to bomb blind and one to check the accuracy of the markers before bombing.

20. GEE The Eastern Chain operated on the Wyoming frequency throughout and on Zanesville and Arizona from 2000 to 2300 hours. The Wyoming frequency was jammed by several types of interference, the strongest of which was noise. The Zanesville frequency was similarly, but less heavily, jammed, and interference on Arizona was weak. The best results were obtained on the Arizona frequency, and, on the whole, ranges were better than usual on this route.

ENEMY DEFENCES

21. Flak and Searchlights There was great searchlight activity in the target area early in the raid, and moderately intense heavy flak co-operated with the searchlights and was also fired in barrage form. Later the ground defences decreased considerably. There were reports of gun-fire at various places en route, especially the Frisian Islands.

22. Fighters Intercepted wireless traffic indicated that the main fighter activity was controlled by a running commentary, but 4 pursuits were made by fighters operating under precise directions from the ground; these, however, did not appear to make contact with the bombers. The running commentary controllers appeared to expect an attack on Berlin, and it seems likely that the diversionary attack on Oldenburg helped to create this confusion. At one point all fighters were ordered to Berlin, and this probably reduced the number of attacks reported in the target area.

23. A total of 102 interceptions were reported, the majority being near or over the target itself. Of the 38 attacks, 22 occurred within 20 miles from the target on the return. The remaining 8 attacks took place over home bases on the return, all but one of the attacked bombers being damaged, including 2 totally destroyed. Flares were employed by the fighters near the target apparently for illumination. 7 enemy aircraft were destroyed.

...../C.SULLIVAN.

CASUALTIES

No. of aircraft missing..... 25 (3.5%)
 " " " damaged { flak.....14 }
 { fighters.....16 } 11 (5.8%)
 { other causes.....13 }

* Including one also damaged by flak and one by fighter.

It was estimated that at least 12 aircraft were shot down by fighters, 8 within 20 miles of the target and 4 on the outward route. 8 aircraft were probably shot down by flak, 5 in the target area, 2 outbound and 1 homebound. 4 of these, however, were coned by searchlights before being brought down, and although flak was seen firing at them, it is possible that fighters may have completed the task. One incident observed by several crews in the last 20 miles of the outward journey may have been a collision between 2 aircraft.

2 aircraft crashed on take-off, and another came down in the sea on the return. 8 bombers, including one which was hit by flak and one by fighters, were damaged by incendiaries, and 2 were hit by stray bullets.

OLZENBURG

PLAN OF ATTACK

Route Base - Cromer - 53°50'N. 04°00'E. - 53°09'N. 07°13'E - TARGET - 52°20'N. 06°00'E - 54°20'N. 04°00'E - Base.

Method of attack Blind-markers were to drop T.I. red and bombs on the centre of the built-up area, using H2S. If cloud conditions were less than 5/10ths, they were to drop one bundle of flares in salvo with their T.I. and the remaining 15 seconds later. Mosquitoes were to keep the aiming point marked by dropping T.I. green and bombs to overshoot the estimated centre of all T.I.'s seen one second. Supporters were to bomb visually if possible; otherwise they were to aim at the estimated centre of all T.I. red.

Timing Zero hour: 2130 hours - Period of attack: 2100-2109 hours

- 12 blind-markers (Lancasters) at Z - 30
- 11 supporters (Lancasters) at Z - 30
- 8 Mosquitoes from Z - 28 to Z - 21, 1 per minute.

Tactics WINDOW was to be dropped at the rate of one bundle per 2 minutes on 03°12'E to 20 miles short of the target; thence to the target and to 03°12'E on the return at 1 bundle per minute.

CASUALTIES

No. of aircraft despatched..... 29
 " " " reporting attack on primary area..... 29(100%)
 " " " missing.....NIL

OPERATIONAL EXPERIENCE

Target area: Cloudless. Moderate visibility. No moon.

PHOTOGRAPHIC STATISTICS

No. of photographs with bombing examined..... 17
 " " " showing ground detail { plotted within 3 mls...5 }
 { " outside 3 mls...2 } ... 7
 " " " " fire-tracks { unplotted.....NIL }
 { plotted within 3 mls...6 }
 { " outside 3 mls...NIL } ... 10
 " " " aircraft estimated from the photographic evidence to have
 bombed within 3 miles of the aiming-point..... 18

NARRATIVE OF ATTACK

34. The whole of the force despatched by 8 Group to make a "spoof" raid on Oldenburg reported attack. Most of the aircraft reached the target on time, but many of them, especially the Mosquitoes, appear to have orbited the target for many minutes before attacking. The attack was thus spread over 22 minutes instead of the 9 minutes planned. This, however, did not jeopardise the safety of the aircraft, all of which returned undamaged. Night photographs and crew reports indicate that the attack was reasonably accurate, though somewhat scattered.

DAY RECONNAISSANCE

35. Reconnaissance photographs showed that a long building of the railway station was severely damaged and a small unidentified factory S.W. of the station was gutted. The upper storey of administrative offices (Ober Land-Gericht) in Elizabeth Strasse was severely damaged by fire. In addition a few scattered points of residential damage were visible.

SPECIAL EQUIPMENT

36. H2S 7 of the 12 blind-markers dropped T.I's on H2S and 2 on existing T.I's, owing to unserviceability of the special equipment. The other 3 also had unserviceable sets, and dropped H.E. only. 4 of the supporters used H2S as a navigational aid, one using it to bomb blindly. The photograph obtained by this aircraft was plotted only 3/4 mile from the aiming point. This was nearer than any of the plotted photographs obtained by blind markers.

ENEMY DEFENCES

37. The opposition to this raid appears to have been negligible, but it served to confuse the ground control for night fighters. No interception was reported.

CASUALTIES

38. Nil.

EMDENNARRATIVE OF ATTACK

39. 12 OBOE Mosquitoes carried out an attack on Emden, all attacking the primary target, where a few scattered fires were observed. All attacked visually or on E.T.A.

SPECIAL EQUIPMENT

40. OBOE The operation involving 8 Mosquito IX, flying at 31,000-35,000ft. and 4 Mosquito IV, was planned partly as an OBOE range test. Emden is 290 miles from the ground station near Dover, which was acting as releasing station on this occasion. None of the aircraft was able to complete the run, although one, flying at 35,000ft., received signals until just short of the release point. From reports of the Mk. IV aircraft, which flew at 29,000ft., it would seem that propagation conditions were rather poorer than normal on this night.

CASUALTIES

41. All the aircraft returned undamaged.

MINELAYING

12. 2 of 4 Stirlings despatched laid a total of 10 mines off the Frisian Islands. The others returned early owing to failure of GEE. None of the Stirlings was damaged.

LEAFLETS

13. 7 Whitleys were despatched to northern France, to drop leaflets. 5 completed the mission, and 2 returned early owing to technical defects. None was damaged.

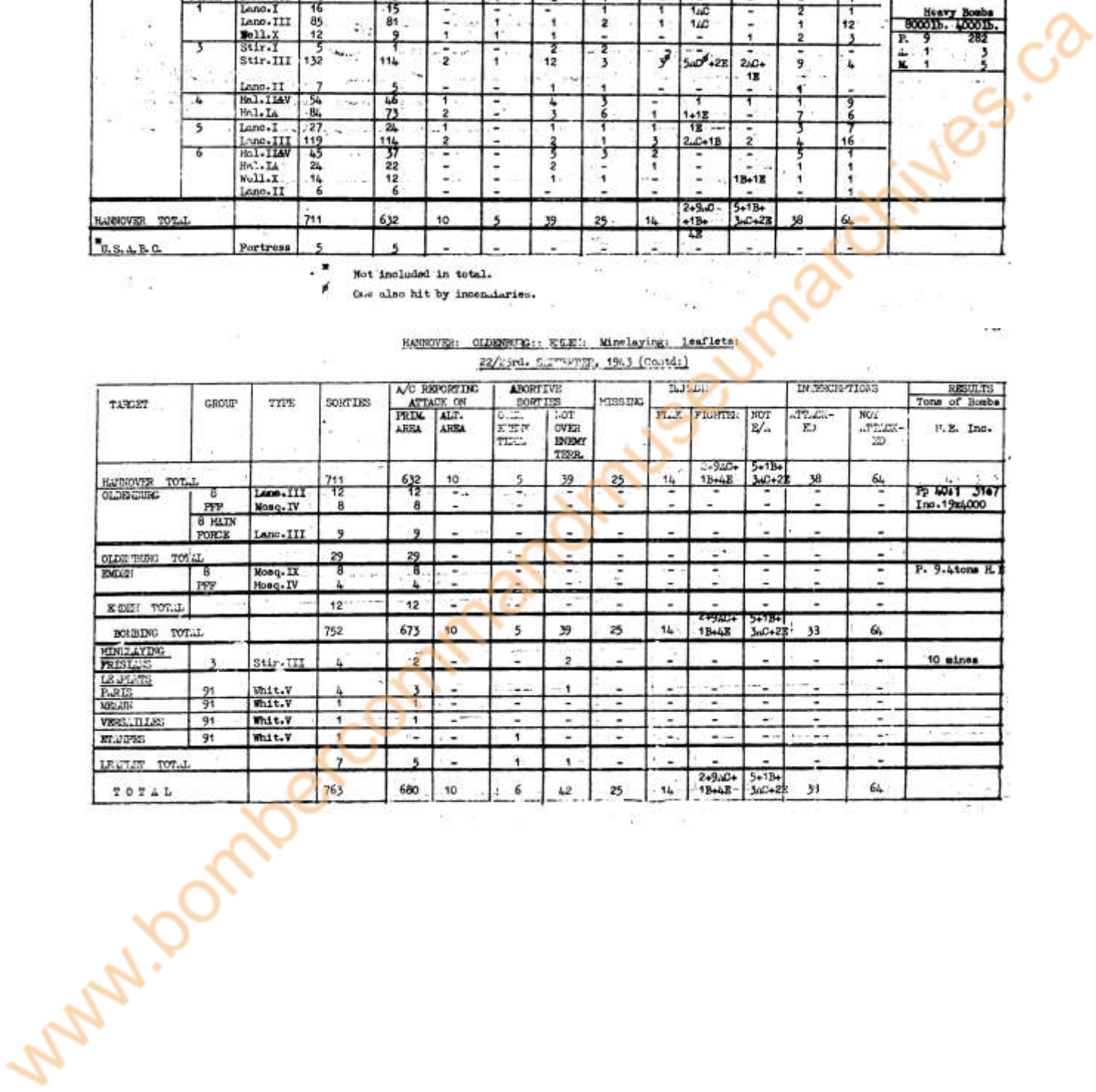
END/JT.
BC/S. 26342/5/ORS3,
14th. November, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INSTRUCTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER SHOT TYPE	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E. Inc.
HANNOVER	B PFF	Hol. Ia	10	8	-	1	1	-	-	-	-	-	-	-	P. 1111.0 1287.4 M. 15.1 22.0
		Lanc. III	48	47	1	-	-	-	1	-	1+1C	1	1	-	
	B MAIN FORCE	Hol. Ia	9	8	-	-	1	-	-	-	-	-	-	-	M. 32.8 48.8
		Lanc. III	14	10	-	-	1	2	1	-	-	-	-	1	
	1	Lanc. I	16	15	-	-	-	-	1	1	1/2C	-	2	1	Heavy Bombs 8000lb. 4000lb.
		Lanc. III	85	81	-	-	1	1	2	1	1/2C	-	1	12	
	3	Stir. I	5	1	-	-	-	2	2	-	-	-	2	3	P. 9 282 M. 1 3 M. 1 5
		Stir. III	132	114	2	1	12	3	3	5+2E	2+2C+1E	9	4	-	
	4	Lanc. II	7	5	-	-	-	1	1	-	-	-	1	-	P. 9 282 M. 1 3 M. 1 5
		Hol. IIIV	54	46	1	-	4	3	-	-	1	1	1	9	
	5	Hol. Ia	84	73	2	-	3	6	1	1	1+1E	-	7	6	
		Lanc. I	27	24	1	-	1	1	1	1	1E	-	3	7	
6	Lanc. III	119	114	2	-	2	1	3	3	2C+1B	2	4	16		
	Hol. IIIV	45	37	-	-	3	3	2	2	-	-	5	1		
6	Hol. Ia	24	22	-	-	2	-	-	1	-	-	1	1		
	Holl. X	14	12	-	-	1	1	-	-	-	1B+1E	1	1		
6	Lanc. II	6	6	-	-	-	-	-	-	-	-	-	1		
	Lanc. II	6	6	-	-	-	-	-	-	-	-	-	1		
HANNOVER TOTAL			711	632	10	5	39	25	14	2+3+0+1B+	5+1B+3C+2E	38	64		
U.S.A.B.C.			Portress	5	5	-	-	-	-	-	-	-	-	-	

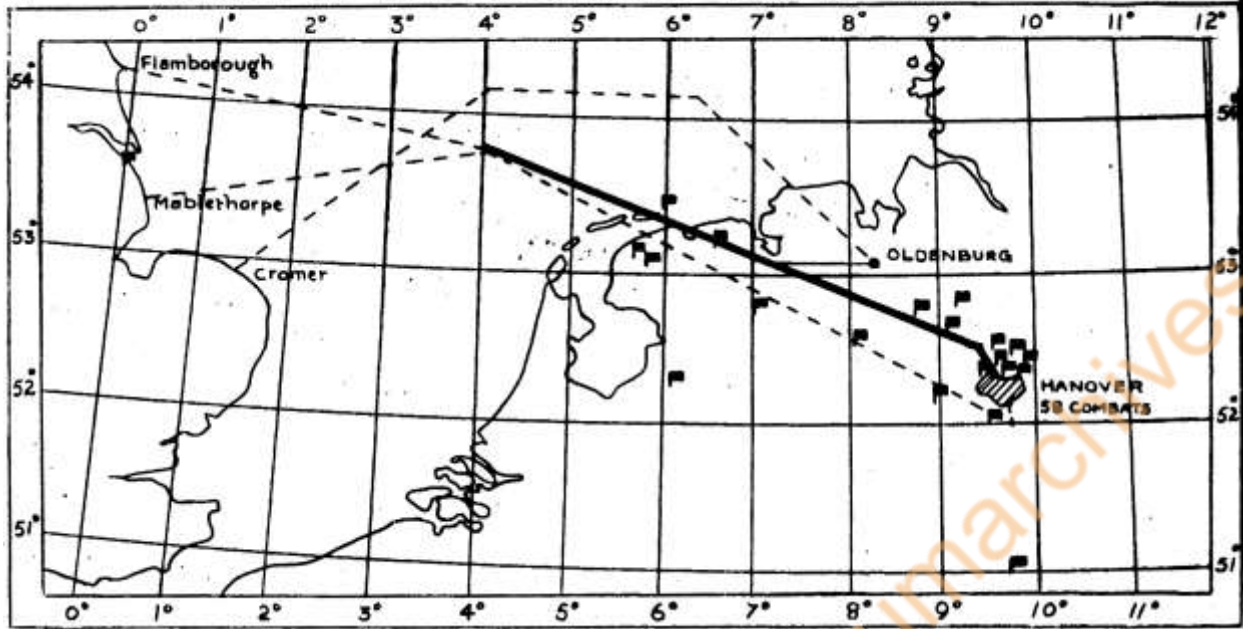
* Not included in total.
 † G.w. also hit by incendiaries.

HANNOVER: OLDENBURG: KEGEL: Minelaying: leaflets:
 22/23rd. SEPTEMBER, 1963 (Contd)

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INSTRUCTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER SHOT TYPE	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E. Inc.
HANNOVER TOTAL			711	632	10	5	39	25	14	2+3+0+1B+	5+1B+3C+2E	38	64		
OLDENBURG	B	Lanc. III	12	12	-	-	-	-	-	-	-	-	-	P. 4011 3147 Inc. 19x1000	
	B PFF	Mosq. IV	8	8	-	-	-	-	-	-	-	-	-		
OLDENBURG TOTAL			29	29	-	-	-	-	-	-	-	-	-		
KEGEL	B	Mosq. IX	8	8	-	-	-	-	-	-	-	-	-	P. 9.4 tons H.E.	
	PFF	Mosq. IV	4	4	-	-	-	-	-	-	-	-	-		
KEGEL TOTAL			12	12	-	-	-	-	-	-	-	-	-		
BOMBING TOTAL			752	673	10	5	39	25	14	2+3+0+1B+	5+1B+3C+2E	38	64		
MINELAYING			3	2	-	-	2	-	-	-	-	-	-	10 mines	
LEAFLETS			7	5	-	1	1	-	-	-	-	-	-		
TOTAL			763	680	10	6	42	25	14	2+3+0+1B+	5+1B+3C+2E	38	64		



NIGHT OPERATIONS 22ND/23RD SEPTEMBER 1943. 60

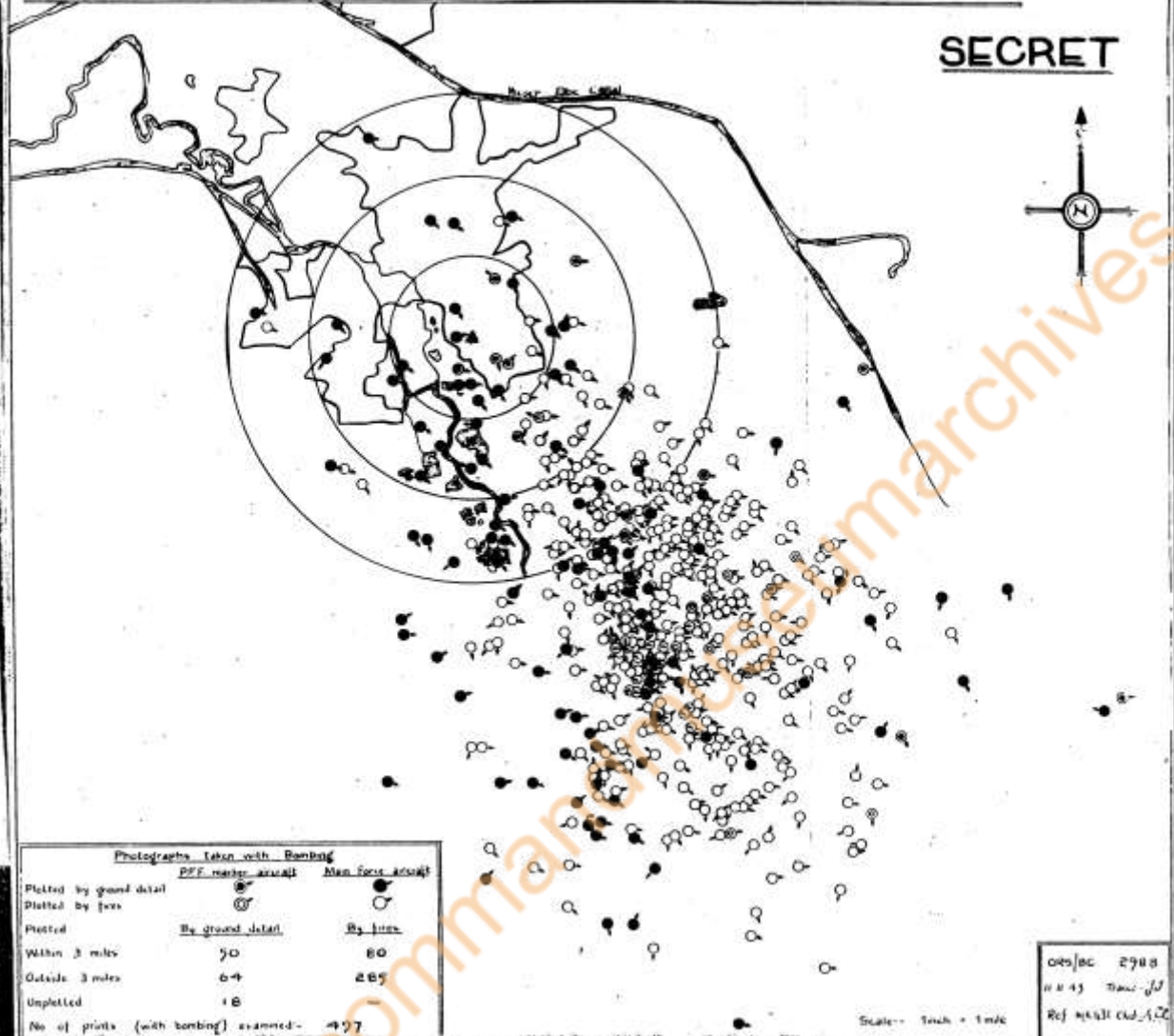


www.bombercommandmuseumarchives.ca

FINAL PLOT OF NIGHT PHOTOGRAPHS
TAKEN 22/23 SEPTEMBER 1943 TARGET: HANNOVER

62

SECRET



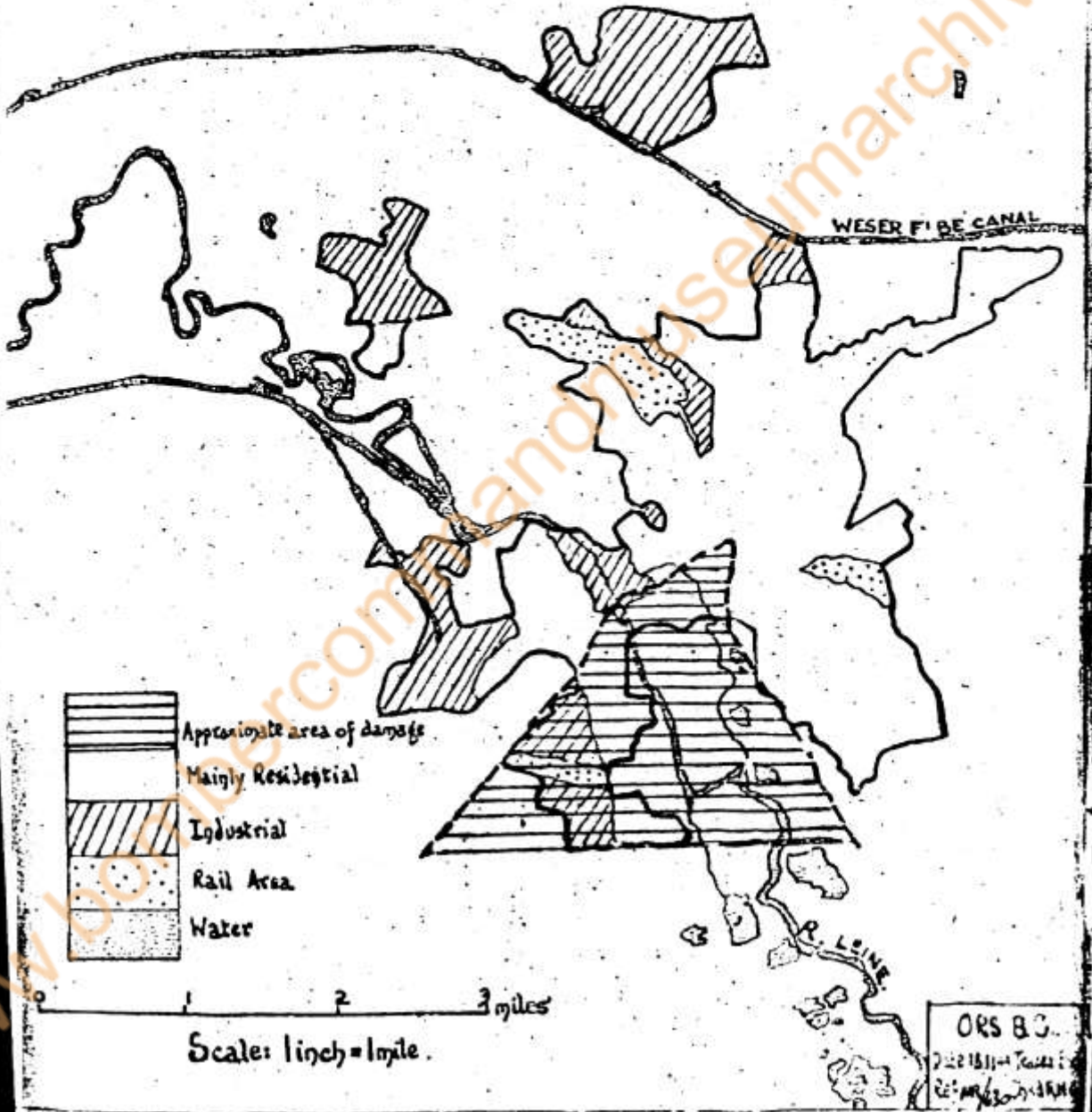
Photographs taken with Bombing		
	PFF member aircraft	Man force aircraft
Plotted by ground detail	●	○
Plotted by jets	⊙	⊚
Plotted	By ground detail	
Within 3 miles	50	80
Outside 3 miles	64	287
Unplotted	18	
No of prints (with bombing) examined-	427	

005/80 2788
 11 43 1000-10
 Ref 44431 001-100

Scale - 1 inch = 1 mile

SECRET

DIAGRAM SHOWING LOCATION OF
ATTACK AS INDICATED BY DAMAGE
HANNOVER 22/23rd SEPTEMBER 1943.



BOMBER COMMAND REPORT ON NIGHT OPERATIONS

23/24th. SEPTEMBER, 1943.

MANNHEIM: Darmstadt: Aachen: Leaflets:SUMMARYMANNHEIM

A force of 627 heavy bombers, including 5 Fortresses of U.S.B.C., attacked Mannheim, which was ground-marked by Y-type aircraft and visual markers. The bombs were fairly accurately placed, and a good concentration of bombing was achieved early in the raid. Later, however, the attack spread several miles N. of the aiming-point. Enemy fighters were concentrated in the target area, and shot down at least 19 of the 32 missing bombers.

DARMSTADT

A "feint" attack on Darmstadt by 29 aircraft failed to draw the fighters away from the main bomber force, but the attack was very accurate and caused much damage considering the small number of aircraft involved. All the bombers returned undamaged.

AACHEN

6 OBOE Mosquitoes bombed Aachen from high level, using the precision technique. All returned undamaged.

LEAFLETS

24 of 28 aircraft despatched by Training Groups scattered leaflets over France in northern France. One aircraft failed to return.

WEATHER FORECAST

Estimated midnight position of fronts: (1) warm from $58^{\circ}\text{N. } 20^{\circ}\text{E.} - 55^{\circ}\text{N. } 15^{\circ}\text{E.} - 50^{\circ}\text{N. } 10^{\circ}\text{E.} - 50^{\circ}\text{N. } 00^{\circ}\text{E.}$; (2) cold from $58^{\circ}\text{N. } 20^{\circ}\text{E.} - 56^{\circ}\text{N. } 10^{\circ}\text{E.} - \text{N. England.}$

Home bases: for take-off - N. of $52\frac{1}{2}^{\circ}\text{N.}$, 7-9/10ths. strato-cumulus, base 10,000-20,000ft., patches at 1,000-1,500ft., and moderate to good visibility; S. of $52\frac{1}{2}^{\circ}\text{N.}$, little low cloud and moderate to good visibility. For return, low cloud have spread southwards, but may not have reached $52\frac{1}{2}^{\circ}\text{N.}$. 3 and 8 Group areas of low visibility troubles, but diversions arranged in Training and 4 Groups.

France: much strato-cumulus on north coastal strip, but small amounts of cloud inland. In south, broken medium cloud.

N. Italy: much cloud at various levels.

Germany: N. of warm front, much strato-cumulus and broken medium cloud. S. of warm front, medium cloud will decrease, and at midnight is not expected to be as far S. as Leipzig or Frankfurt. Between frontal medium cloud and Alps, small amounts of cloud, with industrial haze. Cloud on the Alps, but peaks clear. Hannover: much medium cloud, probably 10/10ths. Mannheim: little or no cloud.

Route to Mannheim: over England, top of low cloud 8,000ft., freezing at 10,000ft. Over S. England and continent, variable amount of cirrus, moderate to good visibility. Homewards over continent, conditions will be similar, but

..../visibility in S.England

visibility in S. England will have fallen generally to about 2 miles, and in bases S. of Wash may be down to 1 mile.

Winds at 20,000ft. Mannheim, $210^{\circ}/30$ m.p.h. or less;

Route to Mannheim, $310^{\circ}/40$ m.p.h.

MANNHEIM

PLAN OF ATTACK

6. Route Clacton - $50^{\circ}58'N$. $02^{\circ}54'E$ - $49^{\circ}55'N$. $07^{\circ}50'E$ - TARGET - $49^{\circ}08'N$. $08^{\circ}20'E$ - $48^{\circ}00'N$. $04^{\circ}00'E$ - $48^{\circ}30'N$. $00^{\circ}30'W$ - $49^{\circ}20'N$. $00^{\circ}40'W$ - Selsey Bill.

7. Method of Attack

(a) 8 OBOE Mosquitoes were to drop T.I. red at $50^{\circ}26'N$. $06^{\circ}08'E$ and T.I. at $50^{\circ}14'N$ $50^{\circ}50'E$ (N. and S. of the track, near Aschen) at 5 minute intervals from Z - 50 to Z - 15. 6 blind-markers and 10 backers-up were to drop red spot flare at $48^{\circ}39'N$. $06^{\circ}12'E$ (9 miles 110° Nancy.)

(b) Blind-markers (Y-type aircraft) were to mark the target with T.I. red, checking by a timed run, and to drop illuminating flares. Visual-markers were to drop T.I. yellow and T.I. green on the aiming-point if identified, releasing more flares if necessary. If uncertain of the aiming-point they were to act as backers-up, aiming T.I. green to overshoot the estimated centre of T.I. red by 2 seconds. The backers-up were to aim T.I. green (i) at T.I. yellow, (ii) to overshoot the estimated centre of T.I. red or (iii) T.I. green by 2 seconds.

(c) Supporters were to aim their bombs visually if possible; otherwise at the estimated centre of T.I. red or at T.I. yellow. Main force aircraft were to aim at the estimated centre of T.I. green.

(d) All Y-type aircraft with qualified crews were to carry one flare (with green stars) to be used if cloud conditions made it necessary.

8. Timing Zero hour: 2145 hours. Duration of attack: 2141-2208 hours.

Pathfinder Forces

24 blind-markers	(5 Hal: + 19 Lanc:)	at Z - 4
8 visual-markers	(1 Hal: + 7 Lanc:)	at Z - 4
4 backers-up	(4 Lanc:)	at Z
3 " "	(2 Hal: + 1 Lanc:)	at Z + 1
1 " "	(4 Hal: + 13 Lanc:)	from Z + 2 to Z + 18, one per minute.

If sky-marking is necessary:

2 Hal: + 4 Lanc:	at Z
2 Hal: + 4 Lanc:	at Z + 5
1 Hal: + 5 Lanc:	at Z + 10
6 Lancs:	at Z + 15

Main Force

Supporters	(6 Hal: + 16 Lanc:)	at Z - 4
1st. Wave	(122 Lanc:)	from Z + 2 to Z + 7
2nd. Wave	(125 Str:)	from Z + 7 to Z + 12
3rd. Wave	(190 Hal:)	from Z + 12 to Z + 18
4th. Wave	(123 Lanc: + 5 Fort:)	from Z + 18 to Z + 23

9. Tactics WINDOW was to be dropped at one packet per 2 minutes from $02^{\circ}00'E$ to $06^{\circ}10'E$; at 2 packets per minute within 20 miles of the target; at one packet per minute from $08^{\circ}20'E$ to $01^{\circ}10'E$.

A feint attack was to be carried out on Darmstadt.

...../SCOTTIES

RESULTS

No. of aircraft despatched.....	622+5 ^M
" " " reporting attack on primary area.....	539 (86.7%)
" " " " " " alternative area.....	11 (1.8%)
" " abortive (technical or manipulative defects.....)	32
{ crew failure.....	5
{ weather.....	2
{ (navigational error.....)	1
" " aircraft missing.....	32 (5.1%)

* Fortresses of U.S.B.C.

In addition, 8 OBOE Mosquitoes were despatched as route markers; 6 completed task; 2 sorties were abortive owing to technical defects.

WEATHER EXPERIENCED

Home bases: Fit during the operation with small amounts of low cloud and broken medium cloud. Local fog formed, mainly near industrial areas.

Route: small amounts of cloud to about 30 miles inside enemy territory, then an extensive patch of medium cloud, mainly 7-10/10ths., base 10-12,000ft., tops 16,000ft., reaching almost to the target.

Mannheim: little or no cloud, moderate visibility. No moon.

Winds at 20,000ft: Westerly (250°-270°)/25-30 m.p.h to continental coast, becoming variable (N.W. through E. to S.) 10-20 m.p.h.

LIGHT PHOTOGRAPHIC STATISTICS

No. of photographs with bombing examined.....	501
" " " showing ground detail (plotted within 3 miles...)	54
{ " outside 3 miles...)	81
{ (unplotted.....)	21
" " " showing fire-tracks (plotted within 3 miles...)	131
{ " outside 3 miles...)	127
{ (unplotted.....)	87
" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming-point.....	220

DETAILED NARRATIVE OF ATTACK

The blind-markers dropped their T.I. red and flares accurately, almost all the T.I.'s falling within 2 miles of the aiming-point. Their timing was fairly good, so that during the first 10 minutes of the raid there were sometimes as many as 12 sticks of flares burning simultaneously. This enabled the majority of the visual-markers to identify the aiming-point, and mark it with T.I. yellow and T.I. green. Smoke from the flares, however, prevented one crew from identifying the target visually. A good concentration of T.I. yellow is believed to have developed just S.E. of the aiming-point. The backers-up, as in the attack on Munster on the previous night, aimed at reds or greens rather than yellows, so that their concentration was not as good as it might have been; and at Z + 9 at least 2 salvoes were photographed 2½ to 3½ miles short of the aiming-point. The main force bombing started with a good concentration in the northern part of Mannheim, but by Z + 16 the main incendiary area had shifted back to 4 miles N.W. of the aiming-point, with scattered sticks up to 7 miles away. A diversion which started near the Studerhein decoy, 5 miles N.W. of the aiming-point, attracted much of the bombing. The T.I. green which started this diversion may have been of enemy origin. Much of the attack, however, fell on the vulnerable area of Mannheim.

..../DAY RECONNAISSANCE

DAY RECONNAISSANCE

14. Photographs taken on the following day show numerous fires burning in many areas, particularly in the dock areas immediately to the north of the town-centre and in the residential district of Neckarstadt to the north-east. Fires and scattered incidents of damage were seen in Ludwigshafen and Oppau, and several fires were also burning in the town centre. It was estimated that the destruction and damage to property in the fully built-up areas had been increased from 46% to 59% and that over 20% of the property remaining after the previous raids had been destroyed or rendered uninhabitable.

15. Further damage was caused to the chemical plant of I.G. Farbenindustrie north of Ludwigshafen, a number of buildings, including processing shops, being destroyed or still on fire at the time of photography. The Motoren-werke Mannheim A.G. (submarine engines) and Brown Boveri and Co. (electrical equipment) were also damaged again. Zellstoff Fabrik Waldhof A.G. (cellulose and chemical products) and C.F. Boehringer and Sohn (pharmaceutical chemists, refiners of quinine) were seen to be damaged, and at least one direct hit was scored on the works of Daimler Benz, which were partly obscured by smoke. Among smaller firms which suffered damage was a small shipyard building barges and landing craft. Of the 55 factories and industrial concerns affected by this raid, at least 17 were small firms in the dock area, especially the Industrie Hafen. Most of these were concerned with the import of timber and grain, and many of the fires still burning in the dock area were in grain elevators and saw mills. The oil storage at Mülhan Hafen was affected, and 50 warehouses or miscellaneous store sheds were destroyed or were still on fire.

16. Several railway goods sheds in the central goods depot at Mülhan Hafen were destroyed, tracks were disrupted, and rolling stock wrecked. In the dock area customs sheds and offices were among the buildings destroyed and 2 electricity sub-stations and a pumping station were also affected. Other damaged buildings included several barracks and a Motor Transport Depot. 72 of the 140 huts in labour camps near the I.G. Farbenindustrie were burnt to the ground.

ALTERNATIVE TARGETS

17. 11 aircraft dropped their loads near Schwetzingen, Barmstadt, Alzey (2), Voss Airfield, Ghent Airfield, Brussels, Dunkirk, Ostend and Courtrai (2). One aircraft which attacked the primary target dropped part of its load near Courtrai.

SPECIAL EQUIPMENT

18. OBOE 8 OBOE Mosquitoes were despatched to drop route-markers to assist the aircraft attacking Mannheim to keep on track. 6 were successful, one returned early owing to failure of OBOE and another owing to GEE failure.

19. H2S 24 Y-type aircraft were detailed as blind-marker illuminators, and 23 reported attacks: 17 dropping T.I. and flares on H2S. 3 aimed visually, releasing flares and H.E., and 3 dropped H.E. only. The blind-markers were a little late on the average but the accuracy was good. 46 other Y-type aircraft used H2S as a navigational aid, and of these 41 reached the target with serviceable sets.

20. GEE The Southern Chain operated on the Carolina frequency throughout and the Eastern Chain on the Wyoming frequency throughout and on Arizona and Zanesville from 2000 to 2230 hours. Interference was of the usual type, being heaviest on the Wyoming and Zanesville frequencies, near the coast on the outward route. The ranges obtained were normal for this route, but might have been better if navigators had changed to the Carolina frequency in areas where the Southern Chain is more accurate, and the signals stronger, than the Eastern Chain.

ENEMY DEFENCE

21. Flak and Searchlights Ground defences en route were active at Dunkirk, Ostend, Nieuport, Brussels, Charleroi, and Lachen on the outward route and at Karlsruhe, Troyes, Chartres, Caen, and Le Havre on the return. At the target the flak was initially fairly intense, but diminished as the attack progressed.

..../Throughout the fire was

throughout the fire was mainly barrage, at 16-19,000ft., with occasional fire to greater heights when the searchlights provided an illuminated target. The many searchlights employed are reported to have been uncoordinated in the earlier stages, but to have formed large cones later. Only 12 aircraft were damaged by flak.

C. Fighters Intercepted wireless traffic disclosed large groups of fighters directed by running commentaries, and one force operating under Benito control. The diversionary attack on Darmstadt seemed to produce confusion, which was increased by the apparent independence of some of the controls directing groups of fighters. The Deelen and Munich controls attempted to keep direction of their aircraft, while the Stave and Berlin controls directed their fighters to south Germany, and then relinquished authority. In consequence, at 2148, 10 minutes after the raid on Mannheim began, Deelen was reporting an attack on Darmstadt, and Munich an attack on Mannheim. Deelen announced the attack on Mannheim 4 minutes later, and after another 4 minutes, when the raid was half over, that the target was definitely Mannheim. Further, the Benito control was directing fighters to Darmstadt and Frankfurt when the main raid started, and these fighters did not reach Mannheim until almost the end of the raid. The bombers had first been reported at 2040 hours, when they were over Brussels. The night fighters were gathered over Bonn, and although at 2117 the bombers were reported passing south of the Ruhr no attempt was made to intercept them.

G.C.I. patrols were heard near Brussels, Florennes, Juvin-court, Stuttgart and Augsburg. Only 2 pursuits were heard, neither of which made contact with a bomber.

77 interceptions including 26 attacks and 38 other interceptions, were reported. 20 of the attacks took place within 20 miles of the target, and only 14 occurred W. of 07°30'E. 14 bombers were damaged by fighters and 9 enemy aircraft were destroyed.

SUMMARY

No. of aircraft missing.....	32 (5.1%)
" " " damaged { flak..... 8	
{ fighter.....10	35
{ flak & fighter..... 4	
{ other causes.....13	

It was estimated that at least 13 aircraft were shot down by fighters and 8 by flak. The fighters made contact with the bomber stream S. of Aachen, where the blind-markers were placed, and between this position and the turning-point before the target, 7 aircraft were seen shot down by fighters. At least 10 losses to fighters occurred in the target area, and on the return 2 were brought down at Landau and 20 miles S.W. of Landau. Bombers were seen to be shot down by flak at Dunkirk, W. of Courtrai, in the target area (4) and over Landau (2). The aircraft lost to flak en route were all coned by searchlights.

Serious damage was caused by 4 landing accidents, incendiary bombs (3 aircraft) and a falling photoflash.

DISCUSSION

ROUTE

Route Base - Clacton - 50°58'N. 02°51'E - 49°55'N. 07°50'E - T. I. red - 49°20'N. 08°43'E - 49°16'N. 08°20'E - 48°00'N. 04°00'E - 48°30'N. 00°30'W - 49°20'N. 01°4' - Selsey Bill - Reading - Base.

Method of Attack Blind-markers (Y-type aircraft) were to drop T.I. red bombs blindly on the centre of the built-up area. If cloud was less than 1000 ft. they were to drop one bundle of flares in salvo with the T.I. and the aiming bundle 16 seconds later. Supporters were to identify visually if possible, otherwise to aim at the estimated centre of the T.I. red. Mosquitoes were to keep the aiming-point marked by aiming T.I. green and bombs to overshoot the/centre of existing

centre of existing ground-markers by one second.

30. Timing Zero hour: 2130 hours Duration of attack: 2118-2126 hours

Blind-markers (11 Lancasters) at Z - 12
 Supporters (10 Lancasters) at Z - 12
 Backers-up (8 Mosquitoes) from Z - 11 to Z - 4, one per minute.

31. Tactics WIDOW was to be dropped at the rate of one bundle per 2 minutes until 20 miles from the target; at 2 bundles per minute within 20 miles of the target; at one bundle per minute on the return.

SORTIES

32. No. of aircraft despatched..... 29
 " " " reporting attack on primary area..... 28 (96.6%)
 " " abortive sorties(technical defect)..... 1
 " " aircraft missing..... (3.4%)
 NIL

WEATHER EXPERIENCED

33. As for Mannheim (para.11).

NIGHT PHOTOGRAPHIC STATISTICS

34. No. of photographs with bombing examined..... 14
 " " " showing ground-detail (plotted within 3 miles..13)
 " " " " outside 3 miles.NIL.. 13
 (unplotted.....NIL)
 " " " " fire-tracks (unplotted)..... 1
 " " aircraft estimated from the photographic evidence to
 have bombed with 3 miles of the aiming point..... 20

NARRATIVE OF ATTACK

35. Both the accuracy and timing of the "reint" attack on Darmstadt were excellent, but the raid did not appear to draw fighters away from Mannheim, although it helped to confuse some controllers. Most of the T.I's plotted were within a 1 mile circle just E. of the Darmstadt marshalling yards. A large explosion recorded at about Z-12 proved to involve a gas-holder in the Neue Gaswerke. Several fires were visible at Z-4, and by Z + 1, 2 groups of fires were becoming established, one in the N.E. of the town and one in the N.W.

DAY RECONNAISSANCE

36. Reconnaissance photographs showed that, although only about 80 tons of bombs were dropped, the damage caused was considerable. Most of the damage was in the N. and N.W. of the town, including the industrial district just outside the fully built-up area. Small groups of gutted buildings were also seen near the town centre and buildings of the Darmstadt/Griesheim Airfield S.W. of the town were seriously damaged. In the industrial area, 5 works, including the furniture makers, Ludwig Alter A.G., were affected. The Neue Gaswerke A.G. (priority 3), the municipal slaughter house and several railway buildings were also damaged. Business and residential damage was mainly in the centre and E. of the town, and the public buildings damaged included the State Finance Office, a bank and 2 gymnasiums.

SPECIAL EQUIPMENT

37. H2S All the 11 Y-type aircraft despatched as blind-markers reported attack, 8 releasing markers using H2S. One other aircraft dropped markers, and 2 dropped H.E. only. The accuracy of the blind-markers was very good. 7 were aircraft, one of which returned early, used H2S as a navigational aid, 6

...../reaching the target

reaching the target with serviceable sets.

ENEMY DEFENCES

2. Opposition to this raid was negligible; one aircraft was approached by an enemy fighter, but no attack developed.

CASUALTIES

3. None.

AACHEN

4. 6 Mosquitoes were sent to bomb Aachen on OBOE. 5 completed the task satisfactorily, but the releasing signals of the sixth aircraft failed during the run-up, and the target was bombed on a timed run from an OBOE fix obtained earlier in the run. None of the bombers was damaged.

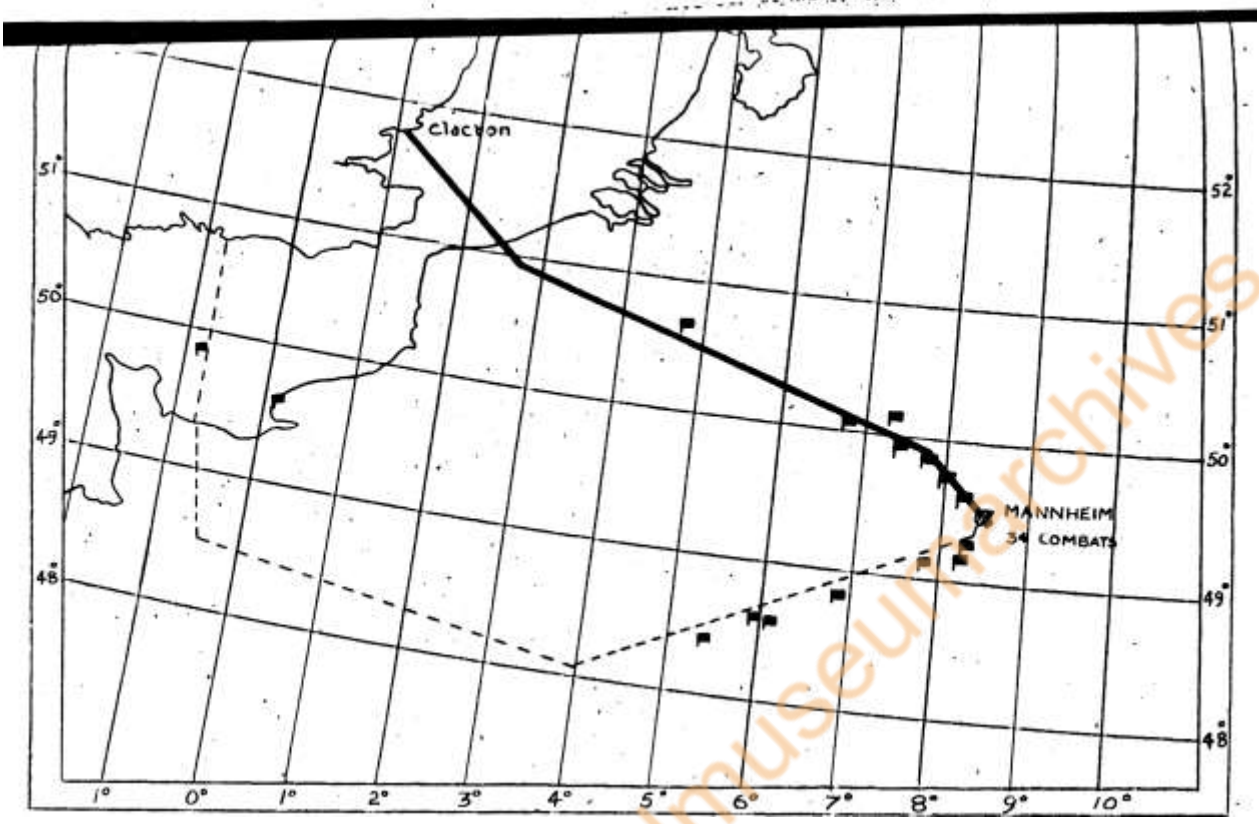
LE-FLETS

5. 26 Wellingtons and 2 Whitleys set out to disperse leaflets over towns in northern France, and 23 aircraft carried out the mission. 2 aircraft detailed for Tours released their leaflets over Cherbourg and Le Mans owing to a technical defect and a navigational error. One Wellington, which was hit by flak over Grand Camp, jettisoned its load in the sea, and another returned early with a technical defect. The remaining aircraft was lost without trace.

GO/JT.

C/S. 26342/4/GR33,

14th November, 1943.



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SECRET

FINAL PLOT OF NIGHT PHOTOGRAPHS

71

TAKEN 23/24th SEPTEMBER 1943

TARGET **MANNHEIM**

Photographs Taken with Bombing		
	P.F.F. Marker A/C	Main Force A/C
Plotted by Ground Detail	●	○
Plotted by Fires	●	○
PLOTTED	By Ground Detail	By Fires
Within 3 miles	54	121
Outside 3 miles	81	127
UNPLOTTED	21	87
No. of prints (with bombing) examined		501

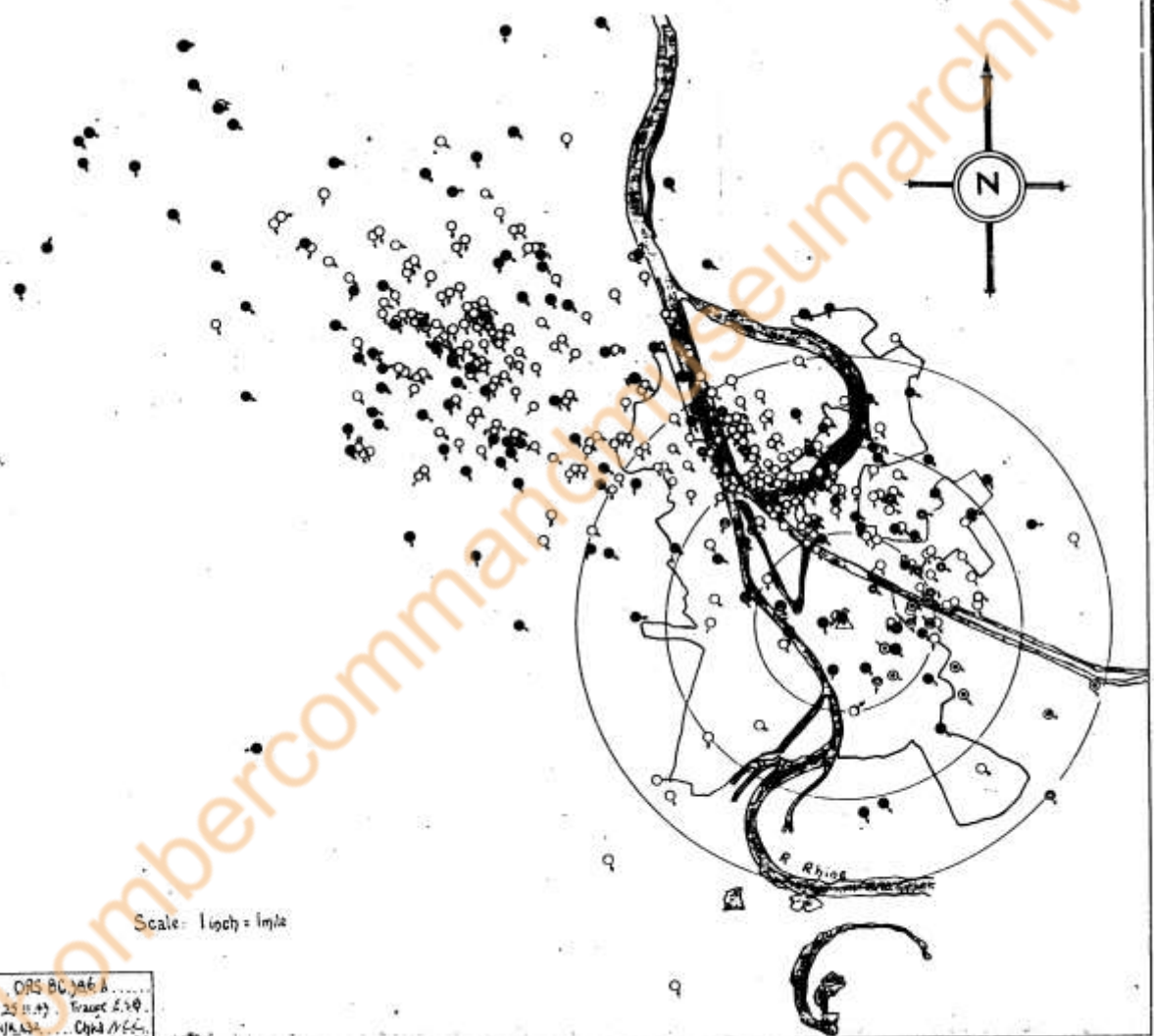
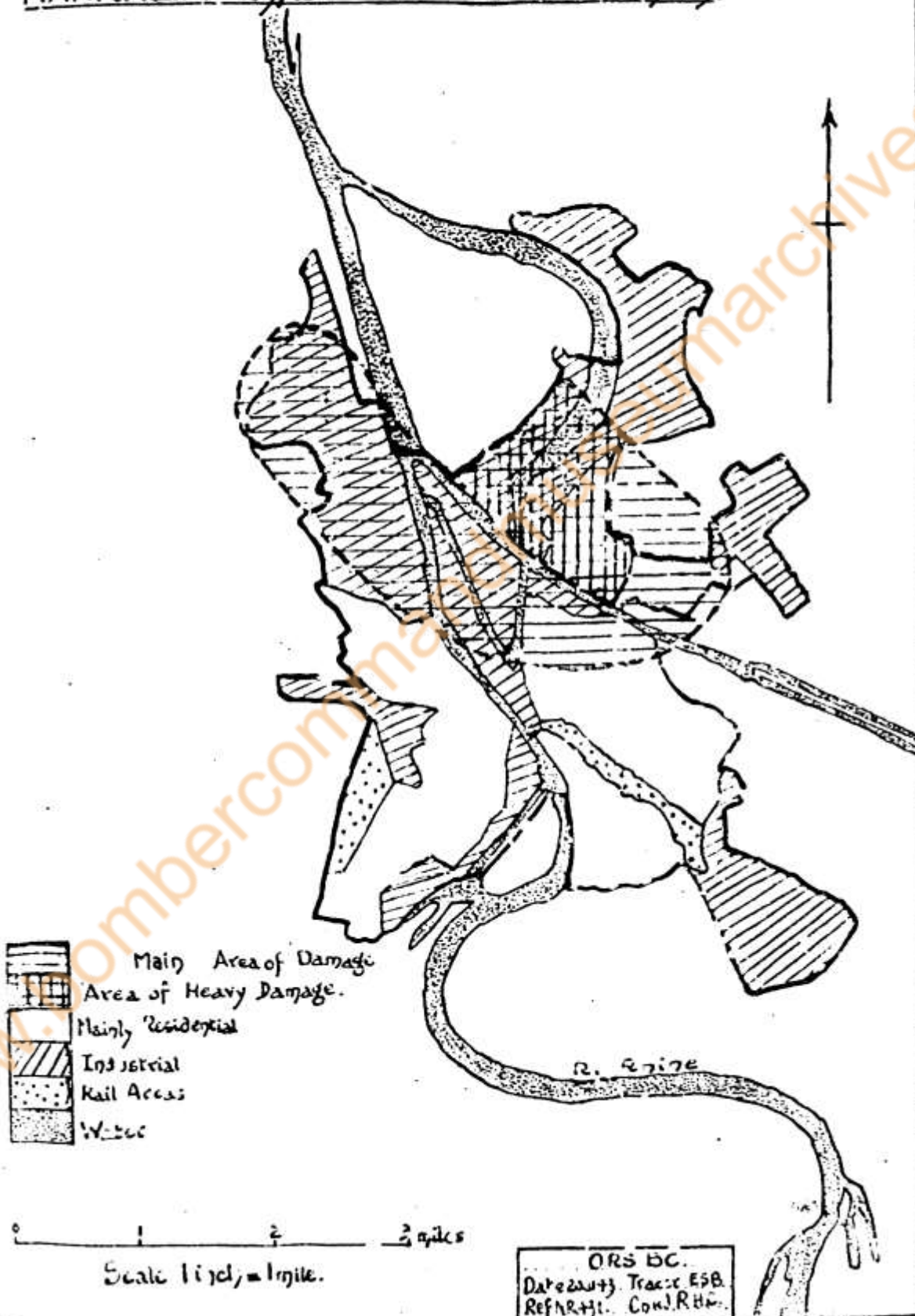


DIAGRAM INDICATING LOCATION OF
ATTACK AS SHOWN BY DAMAGE.
MANNHEIM 23/24th SEPTEMBER 1943.



BOMBER COMMAND REPORT ON NIGHT OPERATIONS

24/25th. SEPTEMBER, 1943.

Duisburg: Minelaying: Leaflets:

SUMMARY

1. Duisburg 4 Mosquitoes carried out a successful harassing attack on Duisburg without loss to themselves.
2. Minelaying 37 aircraft laid 127 mines off the Frisians and the Dutch coast. 2 others returned early. None were lost, but one Stirling crashed into some trees on return and blew up. One member of the crew was killed.
3. Leaflets 2 Whitleys dispersed leaflets over Cambrai and St. Quentin. Both returned undamaged.

WEATHER FORECAST

Bases:- Cold front across operational bases, lying at midnight from 50°N. 20°E. to 55°N. 10°E. to Yarmouth to S. Wales. Along the front there will be convection and layer cloud, but this may be broken and should not extend to great heights. N. of the front, cloud will disperse and visibility will be good. S. of the front, there will be broken layers of cloud. Fog patches in N. during latter half of night.

Germany:- Broken layers of cloud N. of 52½°N. Little cloud in Berlin-Munster-Kassel-Frankfurt-Buremburg area, and in S.E. Elsewhere, extensive patches of medium cloud with moderate visibility. Much cloud in frontal zone over North Sea, not extending to great heights. Broken convection cloud to 10,000' N. of the front.

France:- Little cloud in N.W. Patchy medium cloud inland. Local under cloud in S.

Frisians:- 7-10/10ths. cloud, base 1,000' in places, tops 5,000'.

W. Holland:- Little or no low cloud, some medium cloud.

STATISTICS

	<u>Duisburg</u>	<u>Minelaying</u>	<u>Leaflets</u>
(a) No. of aircraft despatched.....	4	39	2
(b) " " " reaching primary area.....	4	37	2
(c) " " abortive sorties.....	0	(GEE u/s) 2	0
(d) " " aircraft missing.....	0	0	0
(e) " " mines laid.....		127	

WEATHER EXPERIENCED

Duisburg:- 6/10ths. broken medium cloud. 10/10ths. very low cloud. Visibility fair.

Frisians:- Very variable cloud, generally 10/10ths. Visibility poor.

W. Holland:- No cloud. Very dark. Visibility 2-3 miles.

No moon.

...../ENEMY DEFENCES

ENEMY DEFENCES

7. No opposition was reported.

C.SUALTIES

8. No aircraft was lost, and no damage was sustained from enemy action. One Stirling returning early from the Prisiens crashed into some trees near its base, and two of its fuel tanks and one of its mines exploded. The aircraft was wrecked and one of the crew was killed.

MLM/JT.
BC/S. 26342/6/ORS3,
7th. November, 1943.

24/25th. Nov. 1943.

ELEMENT	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		DAMAGE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA.	SEC. AREA.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT R/A.	ATTACK-ED	NOT ATTACK-ED	
MUSBURG	8 DFF	Messg. IV	4	4	-	-	-	-	-	-	-	-	-	
MIDLANDS	1	Well. X	5	5	-	-	-	-	-	-	-	-	-	10 mines
PRISIENS		Lanc. III	2	2	-	-	-	-	-	-	-	-	-	12 mines
	3	Stir. III	14	13	-	-	1	-	-	-	1E	-	-	71 mines
	6	Well. X	10	9	-	-	1	-	-	-	-	-	-	18 mines
S. of TROU	1	Well. X	8	8	-	-	-	-	-	-	-	-	-	16 mines
MIDLANDS TOTAL			22	27	-	-	2	-	-	-	1E	-	-	127 mines
L.F. FLTS														
ST. QUENTIN	91	Whit. V	1	1	-	-	-	-	-	-	-	-	-	
CUIELLA	91	Whit. V	1	1	-	-	-	-	-	-	-	-	-	
L.F. FLTS TOTAL			2	2	-	-	-	-	-	-	-	-	-	
TOTAL			45	43	-	-	2	-	-	-	1E	-	-	

BOMBER COMMAND REPORT ON NIGHT OPERATIONS

25/26th SEPTEMBER 1943

Cologne : Dusseldorf : Minelaying : LeafletsSUMMARYTarget : Dusseldorf

8 P.F.F. Mosquitoes made harassing raids on Cologne and Dusseldorf. 4 aircraft despatched to each target, all attacked and returned undamaged.

Minelaying

7 of the 10 Stirlings despatched to lay mines off the Frisians completed their run and laid 38 mines. The other 3 aircraft returned early, being unable to obtain fixes. The only damage sustained was to one aircraft which overshot the runway on landing.

Leaflets

10 Wellingtons dispersed leaflets over towns in Northern France. One other aircraft returned early. No losses or casualties were suffered.

WEATHER FORECAST

Bases: generally fit all night with clear skies inland, but scattered showers falling over airfields near the E. coast. Visibility good.

Continent: thundery low cloud over Central Germany, causing cold front to the west. Low cloud slow up and intensify. 10/10ths thick medium cloud, tops above 20,000 ft. with some of thundery development in target area.

RESULTS

	<u>Cologne</u>	<u>Dusseldorf</u>	<u>Mining</u>	<u>Leaflets</u>
(a) No. of aircraft despatched	4	4	10	11
(b) " " " " reaching				
primary area	4	4	7	10
(c) No. of abortive sorties (Tech. defect)	0	0	3	1
(d) No. of aircraft missing	0	0	0	0
(e) No. of mines laid			38	

WEATHER EXPERIENCED

Ruhr: broken cloud as far as 3E., then 8/10 - 10/10ths convection and layer tops up to 20,000 ft. Much thick cirrus over continent at about 28,000 ft. on return. Static reported. Wind at 20,000 ft. 210/85 mph across N. Sea. Bases fit all night.

Frisians: Convection cloud 5-9/10ths., base 2,500 ft. falling to 1,200 ft. in some places. Good visibility. Similar conditions en route with wind at 2,000 ft. 340/25-30 mph.

Off French coast: 4-6/10ths layer cloud over N. French Coast and Channel 7-9/10ths. Small amounts over England.

Bases: fit all night.

DEFENCES

No fighter opposition was encountered. Slight light flak with 6 searchlights operating was reported at Coutances, and concentrated moderate flak from the Saint-Lô area. No damage was sustained.

/CASUALTIES

CASUALTIES

8. None.

BCB/MTA
 PC/S.263/2/5/ORS3
14th November, 1943.

27/28/43 - 10/12/43, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSILES	DAMAGE			INTERCEPTS		RESULTS Area of Bomb
				PRIM. AREA	ALY. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	PI. HIT	NOT E/A	ATTACK-ED	NOT ATTACK-ED	
COLOGNE	8 IFF	Hogg. IV	4	4	-	-	-	-	-	-	-	-	-	P. 5.1
MUSKELDORF	8 IFF	Hogg. IV	4	4	-	-	-	-	-	-	-	-	-	P. 3.1
BOMBING TOTAL			8	8										
BRIDGEMAN	3	Stur. III	10	7	-	-	3	-	-	10	-	-	-	36 mines
LEWIS	93	Well. X	2	1	-	-	1	-	-	-	-	-	-	
NEWTON	93	Well. X	1	1	-	-	-	-	-	-	-	-	-	
ROBERTS	93	Well. III	1	1	-	-	-	-	-	-	-	-	-	
ROBERTS	93	Well. X	1	1	-	-	-	-	-	-	-	-	-	
ROBERTS	93	Well. III	2	2	-	-	-	-	-	-	-	-	-	
ROBERTS	93	Well. Ic	2	2	-	-	-	-	-	-	-	-	-	
ROBERTS	93	Well. Ic	2	2	-	-	-	-	-	-	-	-	-	
LEWIS TOTAL			11	10			1							
TOTAL			29	20			4			10				

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BOMBER COMMLND REPORT ON NIGHT OPERATIONS

26/27th. SEPTEMBER, 1943.

Aachen: Hamborn: Cologne: Leaflets:

SUMMARY

Aachen: Hamborn: Cologne:

13 P.F.F. Mosquitoes were despatched on harassing raids - 5 to Aachen, 4 to Hamborn and 4 to Cologne. The attack on Aachen was the first operational trial of Mark II OBOE equipment. Owing to a technical defect at the ground stations none of the aircraft succeeded in bombing on OBOE, and the 3 aircraft which attacked this target bombed on D.R. from the last fix they were able to obtain. The other two aircraft jettisoned their bombs, one load fused and the other safe, in the target area. All 4 aircraft despatched to Hamborn attacked their target and returned. One was hit twice by flak over the target. 3 of the 4 aircraft sent to Cologne attacked their target, the other returned early without crossing the English coast, owing to excessive icing.

Leaflets

4 Wellingtons dispersed leaflets over towns in Northern France, one was attacked twice by enemy fighters, sustaining no damage. All returned safely.

WEATHER FORECAST

Bases: generally fit, with local showers persisting on E. Coast, 4-8/10ths. Base 2,000', tops 12,000'. Visibility moderate to good, but local smoke after 0500 hours.

Targets: possibility of as much as 8/10ths. cloud up to 10-12,000' in Ruhr, with 3-4/10ths. above 10,000'.

N. Sea: much convection cloud, tops probably below 20,000'.

SORTIES

	<u>Aachen</u>	<u>Hamborn</u>	<u>Cologne</u>	<u>Leaflets</u>
(a) No. of aircraft despatched.....	5	4	4	4
(b) " " " reaching primary area. 3	3	4	3	4
(c) " " " attacking alternative area.....	1	0	0	0
(d) " " abortive sorties (tech. defect). 1	1	0	1	0
(e) " " aircraft missing.....	0	0	0	0

WEATHER EXPERIENCED

Bases: fit all night.

Target (Ruhr): 7-8/10ths. convection cloud, with breaks to 5/10ths. tops 10-12,000'.

Route: small amounts cloud until 30 mls. off English Coast, where 7-8/10ths. convection cloud, tops 14-16,000'. occasionally 20-22,000'. 10/10ths. cloud over Dutch Coast, breaking inland to 7-8/10ths., tops 12-15,000' with some large clear patches. Visibility good. Wind at 31,000' variable, about 15 knots. No contrails. No moon.

...../SPECIAL EQUIPMENT.

SPECIAL EQUIPMENT

6. OBOE The attack on Lachen was the first operational trial of Mark OBOE equipment. There was, however, a discrepancy in the frequencies of the two ground stations and aircraft were able to receive only from one or the other at any one time. As a result none of the aircraft succeeded in bombing on OBOE. The signals which were received showed that a range of 230 miles could be satisfactorily obtained.

ENEMY DEFENCES

7. A small amount of enemy opposition was encountered on this night. A Mosquito attacking Hamborn was hit twice by heavy flak over the target, and a Wellington was twice attacked by enemy fighters in the Abbeville-Dieppe area. Four enemy aircraft were heard operating in this area, but there is no further information about their activities. No damage was inflicted by enemy aircraft.

CASUALTIES

8. All aircraft despatched returned safely. One Mosquito was damaged by heavy flak.

BCB/JT.
BC/S.26342/5/ORS3,
16th. November, 1943.

- 26/27th. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		A/C REPORTING ENEMY TARGETS		MISSING	DAMAGE			INTERCEPTIONS		RESULTS Tons of Bombs H.E.	
				PRIM. ARE.	A/C. ARE.	OVER ENEMY TARG.	NOT OVER ENEMY TARG.		FLAK	FIGHTER	NOT F/A	ATTACKED	NOT ATTACKED		
HAMBORN	8 PFF	Moag. IV	4	4	-	-	-	-	1 LC	-	-	-	-	-	P. 3.4 P. 2.3 A. .8
LACHEN	8 PFF	Moag. IX	5	3	1	1	-	-	-	-	-	-	-	-	
COLOGNE	8 PFF	Moag. IV	4	3	-	-	1	-	-	-	-	-	-	-	P. 2.3
POUING TOTAL			13	10	1	1	1	-	1 LC	-	-	-	-	-	
LEZ-PLAIS ROUTE	92	Well. X	1	1	-	-	-	-	-	-	-	-	-	-	
VERSAILLES	92	Well. X	1	1	-	-	-	-	-	-	-	-	-	-	
TOURS	92	Well. III	1	1	-	-	-	-	-	-	-	2	-	-	
ORLÈANS	92	Well. X	1	1	-	-	-	-	-	-	-	-	-	-	
UNAPPLY TOTAL			4	4	-	-	-	-	-	-	-	2	-	-	
TOTAL			17	14	1	1	1	-	1 LC	-	-	2	-	-	

BOMBER COMMAND REPORT ON NIGHT OPERATIONS

27/28th SEPTEMBER 1943

HANNOVER : Brunswick : Emden : Aachen : Minelaying : LeafletsSUMMARYHANNOVER

1. Hannover was raided by a force of 683 heavy bombers, including five Fortresses of U.S.B.C. The attack fell mainly 1 to 5 miles N. of the aiming point, in an area which was marked and illuminated by blind markers. The flares were too far from the aiming point on this occasion to enable the visual markers to identify it, but good concentrations were achieved round the few salvos of 10 T.I. rods dropped by the visual markers. 39 aircraft, one of which was a Fortress, failed to return; it is probable that the majority fell to night fighters, 7 of which were destroyed.

BRUNSWICK

2. 8 Group carried out a successful "point" attack on Brunswick, causing useful damage and drawing away many fighters for at least part of the period of the attack on Hannover. One Lancaster was lost.

EMDEN

3. 9 OBOE Mosquitoes made a range test on Emden, but none received signals at sufficient range. 5 aircraft bombed on E.T.A., and all returned undamaged.

AACHEN

4. The second operational trial of Mk.II OBOE was made by 5 Mosquitoes detailed for Aachen. A failure of one of the ground stations made the trial unsuccessful, and 3 aircraft bombed on E.T.A. No damage was sustained by the Mosquitoes.

MINELAYING

5. 18 of a force of 19 Stirlings despatched laid a total of 62 mines in enemy waters. All the aircraft returned safely.

LEAFLETS

6. 4 Wellingtons scattered leaflets over towns in Northern France, returning without loss.

WEATHER FORECAST

7. Home bases:- fit at dusk, with little cloud. A depression S. of Iceland is moving quickly eastwards and will seriously threaten northern bases after midnight. By 0100 rain will have started to fall steadily, with cloud down to 1,500 ft. and locally to 1,000 ft. Southern Groups should not be affected, and conditions should be fair in East Anglia, with little or no low cloud. After 0100, weather will deteriorate rapidly in the N. Diversions to 91, 92, 3 and 8 Groups and to S.E. until 2300 hours.

Germany: cold front at midnight from 54°N 14°E to E. of Kassel to W. of Mannheim (to Bordeaux). Much medium and convection cloud in frontal zone. Good clearances W. of front, Kiel may have clear skies. Hannover at 2200 hours probably not more than 5/10ths residual cumulus and cumulo-nimbus, mostly below 10,000 ft., and all below 15,000 ft. At 2100 hours, 6-8/10ths cloud. On return route, 10/10ths cloud over England.

Kattegat: cloud base not expected to be below 2,000 ft. apart from local showers, both en route and in mining area.

/Winds

<u>Winds</u>	<u>750 mb.</u>	<u>500 mb.</u>	<u>300 mb.</u>
Blases in N. - 2 1/2°E.	280°/30 mph.	340°/70 mph.	350°/120 mph.
" " S. - 2 1/2°E.	290°/25 mph.	330°/70 mph.	350°/120 mph.
2 1/2°E. - 6°E.	320°/15-20 mph.	330°/30 mph.	350°/80 mph.
6°E. - Hannover } Hannover - 6°E. }	300°/15 mph.	300°/20 mph.	280°/25 mph.
6°E. - 4°E.	320°/25 mph.	320°/35 mph.	350°/85 mph.
4°E. - Bases	270°/40-45 mph.	340°/70 mph.	330°/105 mph.

(H.B. accuracy, 10 mph.)

H ANNOVER

PLAN OF ATTACK

8. Route: East Coast - 52°37'N. 03°30'E - Egmond - 52°35'N 08°00'E - 52°34'N 09°00'E - TARGET - 52°10'N 09°45'E - 52°35'N 08°00'E - Egmond - 52°37'N 03°30'E - East Coast.

9. Method of Attack (a) 10 blind markers were to release one flare, white, H2S over the centre of the Steinhuder Meer on the way to the target. This marking was to be maintained by 10 backers up only if they could identify the lake visually.

(b) The target was to be marked with T.I. yellow and white flares by the blind-markers using H2S after a carefully timed run from the Steinhuder Meer. Visual markers were to mark the aiming point with T.I. red and one T.I. green released in salvo, after definite identification. One bundle of white flares could be used at the Captain's discretion. If unable to identify visually, the T.I. red were to be retained and the T.I. green were to be aimed to overshoot the estimated centre of the T.I. yellow by 2 seconds. The backers up were to aim T.I. green at (i) T.I. red and green seen early in the attack, or to overshoot by 2 seconds the estimated centre or (ii) T.I. yellow or (ii) T.I. green.

(c) Supporters were to bomb visually or to aim at T.I. red or the estimated centre of T.I. yellow. The main force aircraft were to aim to overshoot the estimated centre of T.I. green by one second.

(d) If cloud conditions made it necessary all Y-type aircraft with qualified crews were to drop one release-point flare (red with green stars) on H2S.

10. Timing Zero Hour : 2200 hours Duration of Attack : 2156 - 2224 hours

Pathfinder Force

- 24 blind markers (6 Hal. + 18 Lanc.) at Z-4
- 10 visual markers (2 Hal. + 8 Lanc.) at Z-3
- 5 backers-up (5 Lanc.) at Z
- 3 " " (1 Hal. + 2 Lanc.) at Z+1
- 22 " " (3 Hal. + 19 Lanc.) from Z+2 to Z+23 at one minute intervals

Main Force

- Supporters (8 group) (9 Hal. + 11 Lanc.) at Z-4
- 1st wave: (150 Lanc.) from Z+2 to Z+6
- 2nd wave: (108 Hal.) from Z+6 to Z+10
- 3rd wave: (58 Stir. + 12 Well. + 5 Fort.) from Z+10 to Z+13
- 4th wave: (58 Stir. + 7 Well.) from Z+13 to Z+16
- 5th wave: (108 Hal.) from Z+16 to Z+20
- 6th wave: (123 Lanc.) from Z+20 to Z+24

11. Effect: WINDON was to be dropped at one bundle per 2 minutes from 03°20' E. 20 miles from the target; at 2 bundles per minute within 20 miles of the target, and one bundle per minute from 20 miles from the target to 03°20'E.

/Aircraft

Aircraft of 8 Group were to make a "feint" attack on Brunswick and T.I. red were to be dropped on Emden by the aircraft carrying out an OBOE range test.

SORTIES

12.	No. of aircraft despatched	678 + 5*
	" " reporting attack on primary area	572 (84.4%) + 4*
	" " " " " " alternative area	7 (1.0%)
13.	" " abortive sorties (technical defect or manipulative error 47)	
	{ weather 10	
	{ crew failure 3	61 (9.0%)
	{ crashed on landing 1	
	" " aircraft missing	38 (5.6) + 1*

* Fortresses of U.S.B.C.

WEATHER EXPERIENCED

13. Home Bases: at 2200 hours an extensive area of rain stretched from Flanborough Head - St. Athan. This moved S.E. at 25 m.p.h., reaching Coltishall - Northolt, Boscombe - Poole by 0200 hours, and covering the whole country by 0300 hours. Rain was slight at first in Lincolnshire, but as the belt moved S.E. it intensified except in 91 Group area. Cloud base generally about 2,000 ft., except for about 100 miles behind the verge of rain-belt, where cloud below 1,000 ft. and poor visibility became widespread,

Route: 10/10ths convection and layer cloud over North Sea, tops occasionally to 19,000 ft. Cloud breaking to small amounts inland on Continent. On return medium cloud over Dutch Coast at about 20,000 ft., persisted to English Coast. Descent was made through thick layers of cloud extending from 2,000 ft. to 20,000 ft. with rain. Wind at 20,000 ft./320°/30-35 mph.

Target: cloudless, good visibility. Surface wind/W.S.W./15 m.p.h. Wind at 20,000 ft./330°/25 m.p.h. No moon.

NIGHT PHOTOGRAPHIC EVIDENCE

14.	No. of photographs with bombing examined	501
	" " " " showing (plotted within 3 miles 20)	
	ground detail { " outside 3 " 42	74
	(unplotted 12)	
	" " " " showing (plotted within 3 miles 53)	
	fire tracks { " outside 3 " 276	427
	(unplotted 98)	
	" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming point	90

NARRATIVE OF ATTACK

15. The timing of the blind markers was good, but, with the exception of 3 which overshoot by 3 1/2 to 6 miles to the East, they dropped T.I. yellow and flares 1 to 6 miles N. of the aiming point. The target was thus insufficiently illuminated, and only 4 visual markers reported identifying the aiming point, although some made as many as 4 runs, and 3 released their own flares. Those which did release their T.I. red appear to have mistaken the aiming point, since the salvos fell 4 miles N., 1 1/2 miles N., 2 1/2 miles N.W. and 1 1/2 miles N. of the aiming point. The backers up achieved a very good concentration of T.I. green 1 to 5 miles N. of the aiming point, and the bombing of the main force was in the same area, with no appreciable spread in any direction. Had the visual markers been able to identify the aiming point with certainty there is no doubt that this would have been an excellent raid, but the replacing of the illuminating flares by the blind markers made identification almost impossible.

/DAY RECONNAISSANCE

DAY RECONNAISSANCE

16. Reconnaissance photographs showed that most of the attack fell outside the built up area, among villages and recently developed industrial areas N. and N.E. of the town. Most of the damage and many craters were visible in and near Brink a village 4 miles N. of the town, and Bothfeld, 3 1/2 miles N.E. of the town centre. Apart from a few scattered incidents in the town and some heavier damage in the suburb of List to the N.E., the damage was mainly N. of the Weser-Elbe Canal. Considerable industrial development between the canal and Brink has taken place in recent years and the function of all the factories is not known. Several of these factories were severely damaged, probably the most important being the now branch factory of Hannoverische Maschinbau A.G. (Hanomag), intended originally for a locomotive works. The Hackethal Draht und Kabelwerke and the Brinker Eisenwerke, both producing steel wire, cables and aircraft parts, were also among the factories in this area which were severely damaged. 3 other engineering works, the firm of H. Wohlenberg A.G., and 11 more factories were also affected, besides a number of smaller industrial concerns.

17. The Vahrenwalderheide Airfield was also hit, a hangar and other buildings damaged, and about 110 craters been seen on the landing ground. In addition at least 3 groups of barracks and several hatted camps, some military and others housing works in the new factory area, were damaged, some 40 huts being destroyed. A group of buildings W. of the airfield was also hit. Residential damage was severe at Brink Bothfeld and List.

ALTERNATIVE TARGETS

18. 6 aircraft dropped their loads near Amsterdam, Alkmaar, Hoogeveen, Egmond, Middenmeer Airfield and Havern Airfield, and a seventh 5 miles north of the target. One bomber which also attacked Hannover, released part of its load at Diepholz.

SPECIAL EQUIPMENT

19. H2S 22 of the 24 Y-type aircraft despatched as blind-markers reported attack 12 dropped flares and markers, and 3 released flares only. 11 of the 12 which dropped T.I. used H2S. The timing was generally good, but the accuracy was poor, the majority attacking N. of the aiming point at distances of 1 to 6 miles, while 3 overshot 3 1/2 to 6 miles to the E. The reason for the inaccuracy is not known, but errors in the Drift run from the Steinhuder Meer may have caused the selection of the wrong part of the straggling built-up area of Hannover and its suburbs.

20. Of the remaining 69 Y-type aircraft despatched, 6 bombed on H2S, 3 being plotted within 3 miles of the aiming point. In all, 64 aircraft reached the target with serviceable sets and 19 with unserviceable sets, 5 returned early and 5 were lost.

21. G.E. The Eastern Chain operated on the Wyoming frequency throughout and on the Arizona and Zanesville frequencies from 2030 to 2330 hours. Interference, which was mainly noise and widely spaced railings, was heaviest on the Wyoming frequency and weakest on Arizona. Most navigators obtained fixes to the Dutch coast, but several were able to use the Arizona frequency on the further side of the Zuider Zee.

ENEMY DEFENCES.

22. Flak and Searchlights. There were few reports of ground defences in action outside the target area, apart from those by aircraft well off course, which mentioned activity at Antwerp, Osnabruck and Zwolle. On the route, flak and searchlights were encountered off Egmond. Reports indicated an increase in the defences at Hannover. Flak was mainly barrage, but many searchlights were active, and intense fire was directed at any aircraft conod. The searchlights also co-operated with night fighters which appeared to use a 3 red-star signal when approaching. 22 aircraft were damaged by flak.

23. Fighters/.....

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23. Fighters. The main fighter opposition again came from large groups operating under general directions, but it appeared from R/T traffic that a serious attempt was made to use the obsolescent G.C.I. system. In this traffic, 4 H.F. and 4 V.H.F. frequencies were heard controlling about 10 fighters, which made attempts to intercept hostile aircraft. There was no evidence that any of these attempts resulted in an attack. The estimated positions of some of the attempted intercepted lay off the 2 main routes, and may have been directed against the Emden and Aachen Mosquitoes on Fighter Command's intruders.

24. Hannover was thought of as the possible objective very early, but considerable difficulty seemed to be experienced in deciding whether Hannover or Brunswick was the main target. However there appeared to be no great deflection of fighters to cover a possible penetration S. of Brunswick. The "feint" attack may nevertheless have been of some value since part of the fighter force was held there during the early stages of the Hannover operation. The fighters were twice warned to check their fuel.

25. 104 interceptions, including 51 attacks, were reported. 25 attacks took place in the target area, and 10 more within 20 miles. Apart from 8 intruders, which attacked bombers over England on the return, only 2 attacks were made W. of 07°E. One of these was against an outbound and one against a returning aircraft, and the positions were approximately the same, both being in the Amsterdam, Haarlem, Alkmaar area. In all 25 bombers were damaged by enemy aircraft, 7 of which were destroyed.

CASUALTIES.

26.	No. of aircraft missing.....	38*(5.6%)
	" " " damaged { flak.....21 ^x	
	{ fighters.....24	74 (10.9%)
	{ flak and fighters....1	
	{ other causes.....29	

* One seriously damaged on landing - also included in "other causes."
+ Fortress

27. One Halifax was lost after being in R/T contact with base and with the alternative landing ground to which it was diverted. Its fate is unknown, but it may have been shot down by an intruder. On the outward route 5 aircraft were shot down by fighters and another was brought down near Amsterdam, the cause being unknown. At least 2 aircraft were brought down by flak, one by fighters and one by unknown causes on the return. The missing Fortress is believed to have been shot down by a fighter in the target area, and it is probable that most of the remaining 27 aircraft also fell in the target area. There were so many observations of falling aircraft in a short time that no definite number can be assigned either to flak or to fighter, but the majority are believed to have been shot down by fighters. More than half of the observations in the target area mentioned that the aircraft was coned before being shot down and this applied equally to flak and fighter victims.

28. 11 aircraft were damaged by incendiaries, 2 in combat with a British aircraft and one by stray bullets. The remaining damage to aircraft by causes other than flak or fighter was due to landing accidents, 2 of the bombers being totally destroyed.

BRUNSWICK

PLAN OF ATTACK

29. Route Baso - Southwold - Egmond - 52°30'N. 09°19'E - 52°38'N. 10°05'E - TARGET - 52° 3'N. 09°45'E - 52°35'N. 08°00'E. - Egmond - Southwold -

30. Method of Attack.

30. Method of Attack. Blind-markers (Y-type aircraft) were to drop "spo- re to-markers, T.I. white, at 52°38'N. 10°05'E. These were to be backed up by Mosquitoes aiming T.I. white at those already down. The aiming-point was to be marked with T.I. red dropped on H2S by the blind-markers. One bundle of flares white were to be released in salvo with the T.I. Supporters were to identify visually if possible; otherwise they were to aim their bombs at the estimated centre of all T.I. red soon. Mosquitoes, acting as backers-up, were to aim T.I. green at the estimated centre of all existing T.I.

Photo-
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support
service

SUBJECT

31. Timing. Zero Hour: 2148 hours. Duration of Attack: 2136-2143 hours

39. Inter-
flight

- 7 blind-markers (Lancasters) at Z - 12.
- 15 supporters (Lancasters) at Z - 11.
- 6 backers-up (Mosquitoes) from Z-10 to Z-5, at one minute intervals.

CASUAL

32. Tactics. WINDOW was to be dropped by the Lancasters at one bundle per minute from 03°20'E to 09°00'E; at 2 bundles per minute from 09°00'E to target to 09°30'E; then at 1 bundle per minute. The Mosquitoes were to drop WINDOW at 2 bundles per minute from 09°19'E. until the supply (36 bundles) was exhausted.

40. damage

SORTIES

33. No. of aircraft despatched.....	27	
" " " reporting attack on primary area.....	26	(96.3%)
" " " missing.....	1	(3.7%)

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WEATHER EXPERIENCED.

34. As for Hannover (para. 13).

NIGHT PHOTOGRAPHIC STATISTICS.

35. No. of photographs with bombing examined.....	13
" " " showing ground detail (plotted within 3 mls..)	6
" " " (" " outside 3 mls..)	1
" " " (unplotted.....)	NIL
" " " fire tracks (plotted within 3 mls..)	3
" " " (" " outside 3 mls..)	NIL
" " " (unplotted.....)	3
" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming point.....	16

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NARRATIVE OF ATTACK.

36. The target was attacked successfully and many bursts and sticks of incendiaries were seen in the built-up area of Brunswick. The aircraft again stayed for many minutes in the target area, the attack lasting some 6 minutes longer than was planned. As a "feint" attack a measure of success was attained, many enemy fighters being held in the Brunswick area until the Hannover attack had been in progress for some minutes.

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DAY RECONNAISSANCE.

37. Damage seen on reconnaissance photographs was chiefly due to H.E., and was scattered throughout the town, although most of the incidents were in the N.E. The Flugzeugreparaturfabrik G.m.b.H. (Priority 2) suffered severe damage by H.E. and fire, and buildings of the National-Jurgons brewery and W.L. Ahrens jam factory were also damaged. There were also several items of residential damage.

SPECIAL EQUIPMENT.

38. H2S. Of the 7 blind-markers, all Y-type aircraft, 6 reported attack and one was lost. 5 aircraft attacked on H2S and one dropped H.E. only, visually.

/Photographs.....

Photographs taken by 3 of the aircraft which bombed blindly were plotted, 2 of them 2-2½ miles E.N.E. of the aiming point and one 13½ miles N.E. 7 supporters carried H2S as a navigational aid, 6 reaching the target with serviceable sets.

NIGHT DEFENCES.

39. Ground defences were not reported in action at Brunswick, and no fighters intercepted the force, although wireless traffic indicated that many night fighters were in the Brunswick area.

CASUALTIES.

40. One aircraft was lost without trace; none of the returning bombers was damaged.

ENDEN

41. 9 OBOE Mosquitoes carried out a "feint" attack on Emden combined with a range test on OBOE Mk. I. None were able to receive signals at sufficient range, so 4 aircraft dropped T.I. red and bombs on a D.R. run from the last GEE fix, one checking the position visually, and one bombed on T.I's. 2 returned early with engine trouble and 2 owing to OBOE failure. All returned undamaged.

AACHEN

42. The second operational trial of Mk. II OBOE which was made by 5 Mosquitoes was unsuccessful owing to a failure of one of the ground stations. 3 aircraft bombed Aachen on a D.R. run from the last GEE fix and one attacked a flak position near Venlo. The fifth Mosquito brought back its load. None of the aircraft was damaged.

MINELAYING

43. Frisian Islands. 7 Stirlings laid a total of 36 mines off the Frisian Islands without incident.

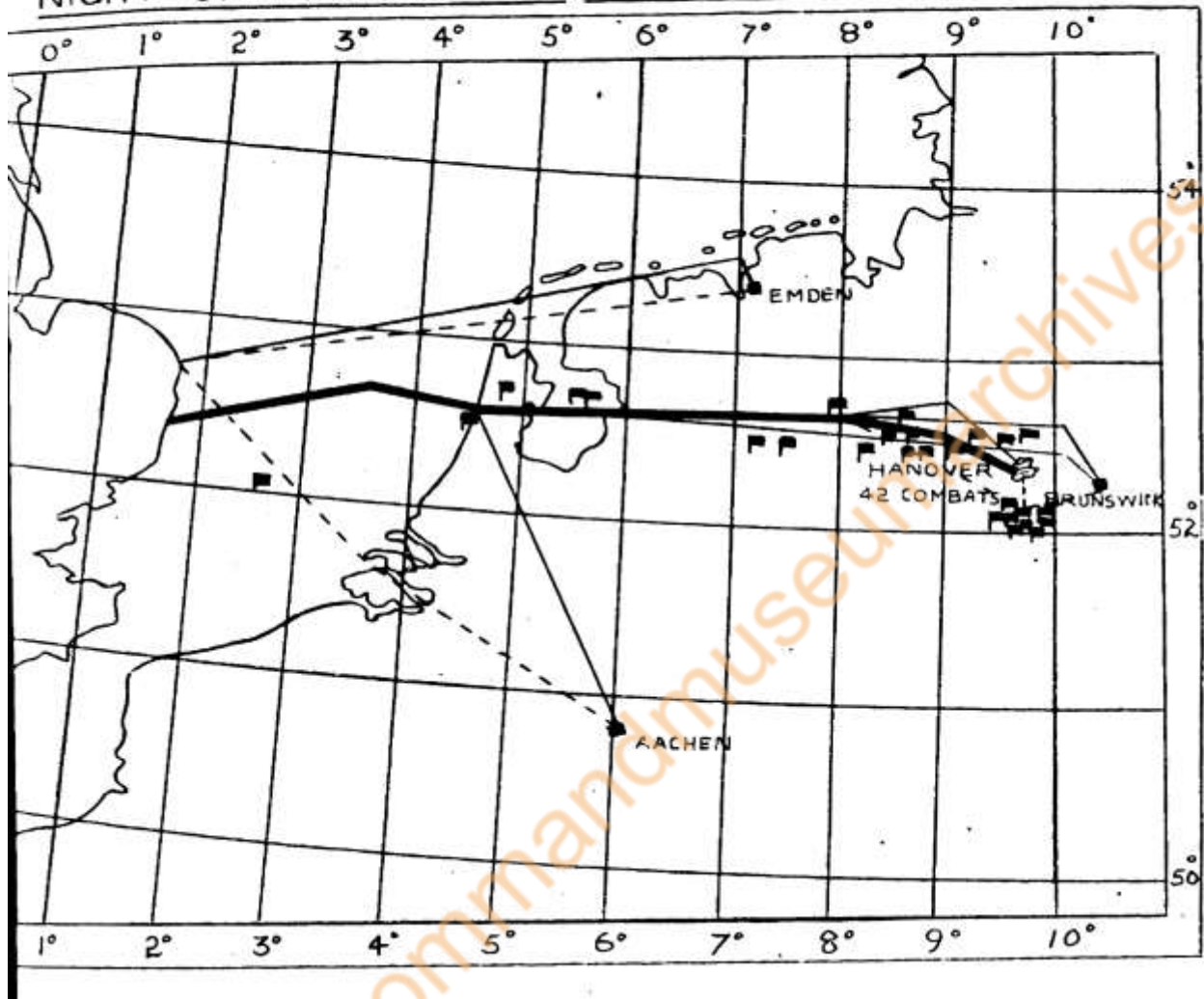
Kattegat 12 Stirlings were despatched to the Kattegat, where 10 of them laid 23 mines. One laid 9 mines in the Sound, and another jettisoned its mines when intercepted by a fighter. One of the successful aircraft was attacked and damaged by an enemy aircraft. 4 of these Stirlings were equipped with H2S; one returned early and 2 reached the target area with unserviceable sets, but the fourth released his mines on an H2S fix. This was the first occasion on which H2S was used on a minelaying operation.

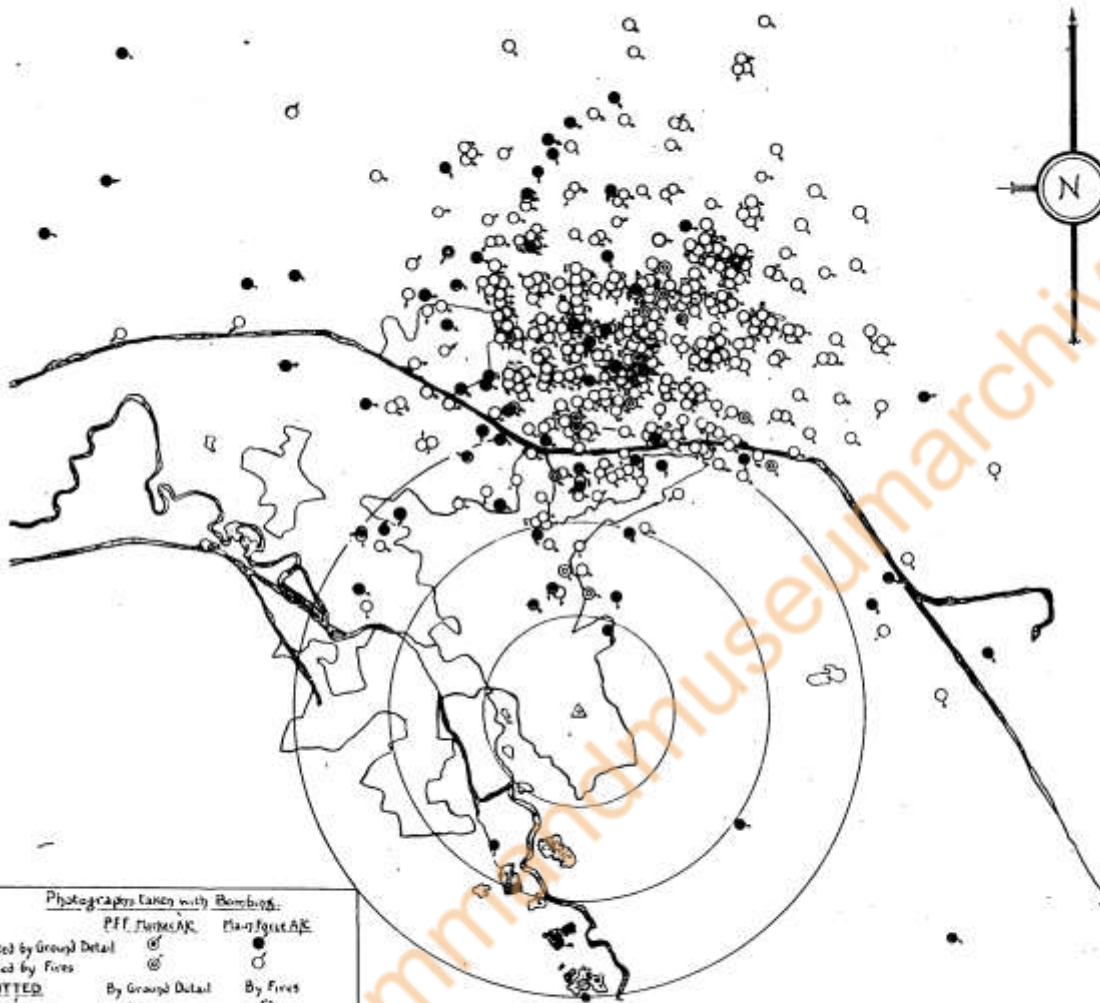
LEAFLETS.

45. Leaflets were dispersed over Paris, Epernay, Fontainebleau and Montreau by 4 Wellingtons, which all returned safely. Opposition was slight, one aircraft sustaining minor flak damage.

R.D./F.V.D.
BC/S. 26342/4/ORSJ.
23rd November, 1943.

NIGHT OPERATIONS 27/28TH SEPTEMBER 1943.





Photographs taken with Bombs:

	P.F. Hercules	Ma-100c
Plotted by Ground Detail	⊙	⊙
Plotted by Fires	⊙	⊙
PLOTTED	By Ground Detail	By Fires
Within 3 miles	20	53
Outside 3 miles	12	276
UNPLOTTED	12	90
No of prints (with bombs) destroyed		501

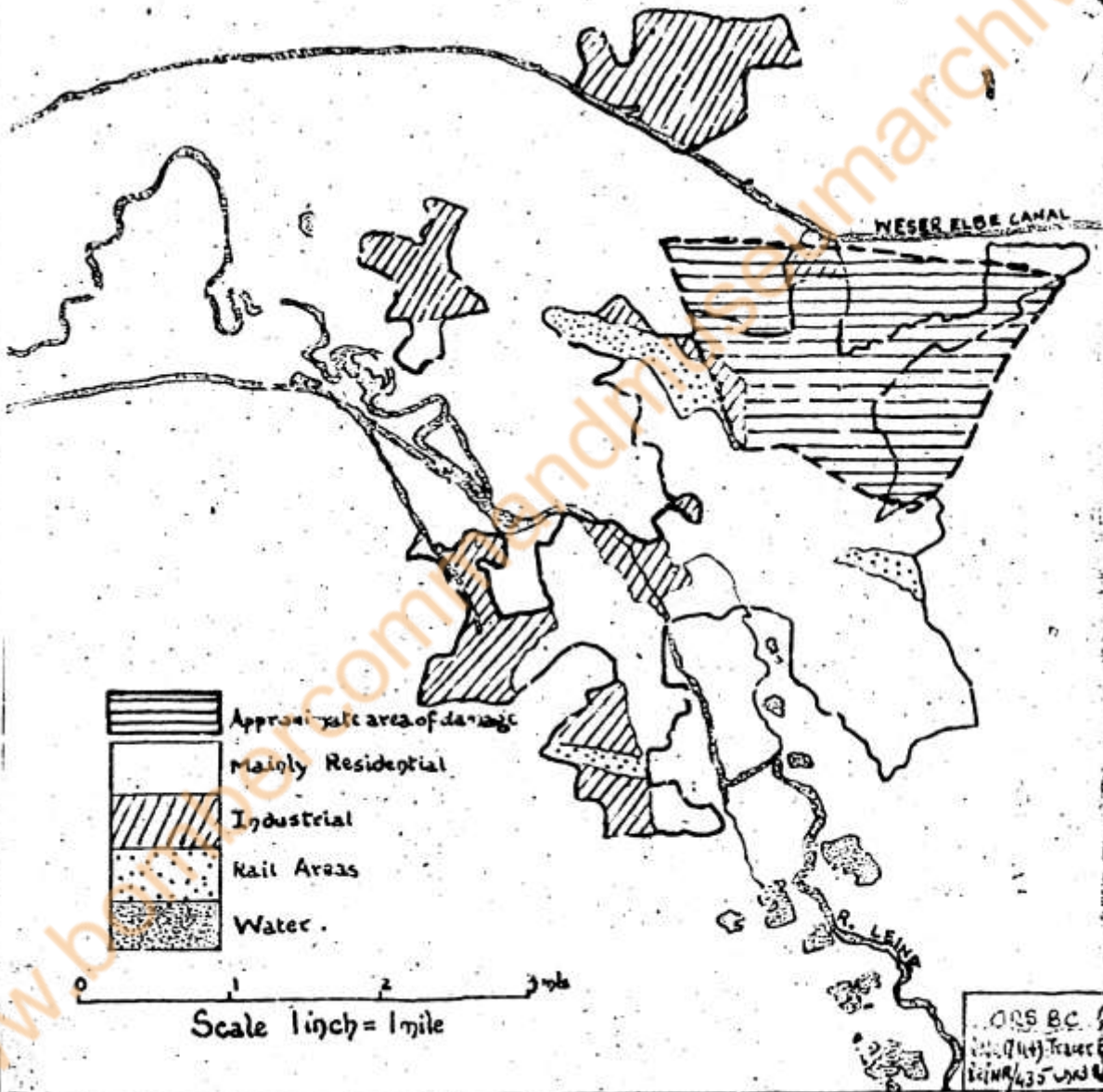
FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 27/28th SEPTEMBER 1943. TARGET HANNOVER

...ORS BC 308.A...
 Date 28.11.43 Tracer ESB
 Ref n. 2.25. Ched. J.C.

Scale 1 inch = 1 mile

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DIAGRAM SHOWING LOCATION OF
ATTACK AS INDICATED BY DAMAGE
HANNOVER 27/28th SEPTEMBER 1943.



BOEBER COAST REPORT ON NIGHT OPERATIONS

28/29th. SEPTEMBER. 1943.

Cologne: Gelsenkirchen:

SUMMARY

8 P.F.F. Mosquitoes were despatched to Cologne and Gelsenkirchen on crossing raids. 4 attacked Cologne and 3 out of 4 despatched attacked Gelsenkirchen, one returning early owing to technical defects without crossing the English Coast. There were no casualties or damage sustained.

WEATHER FORECAST

Bases: cloud breaking and dispersing, good visibility,

Continent: Depression moving E., centre expected to be near Stottin by midnight. Estimated position of cold fronts at midnight: (1) Stottin-Prague, (2) Stottin-50°N 12°E - 46 1/2°N 5°E - La Pallice. Convection cloud with tops to great heights over N. Sea, extending some distance inland. S. of the edge of high ground and N. of the cold fronts there will be an area of residual convection cloud with good clearances. On the fronts and near the centre of low pressure there will be much cloud to great heights. Over H.W. France there will be well broken convection cloud, tops below 20,000'.

RESULTS

	<u>Cologne</u>	<u>Gelsenkirchen</u>
(a) No. of aircraft despatched	4	4
(b) No. of aircraft reaching primary area	3	4
(c) No. of abortive sorties (technical defect)	1	0
(d) No. of aircraft missing	0	0

WEATHER EXPERIENCED

Bases: mainly overcast over operational base areas, with occasional light rain or drizzle. Cloud base 1-2,000 ft. N. of Wash, but extensive patches below 1,000 ft. persisted over East Anglia, reaching the surface in places. Visibility moderate N. of Wash, moderate to poor over East Anglia.

Route and Target: 10/10ths cloud from base to Holland, base mainly 1,000 - 1,500 ft. with patches below 1,000 ft. in light rain or drizzle. Cloud in layers up to 32,000 ft. over Holland, where static was reported. Cloud gradually thinned out and broke in target area. Cologne - 5/10ths layer cloud, tops about 10,000 ft. Winds at 28,000 ft. - 320/55 knots. No moon.

ENEMY DEFENCES

Slight accurate heavy flak was encountered at both targets up to 30,000 ft. No damage was sustained. No enemy aircraft were seen.

CASUALTIES

None.

CB/MTA
C/S.26342/5/ORS3
6th November, 1943.

GELSENKIRCHEN COLOGNE:

28/29th. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTES:	A/C REPORTING ATTACK ON:		AGONYIVE SORTES:		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA	ALT. AREA	OVER BOMBY TERS.	NOT OVER BOMBY TERS.		FLAK	FIGHTER	NOT R/A	ATTACK-ED	NOT ATTACK-ED	Tons of Bombs H.E.
GELSENKIRCHEN	8 PFF	Mesq.IX Mesq.IV	2	2	-	-	-	-	-	-	-	-	-	P. 2.7
			2	2	-	-	-	-	-	-	-	-	-	
GELSENKIRCHEN TOTAL			4	4	-	-	-	-	-	-	-	-	-	
COLOGNE	8 PFF	Mesq.IV	4	3	-	-	1	-	-	-	-	-	-	P. 2.3
TOTAL			8	7	-	-	1	-	-	-	-	-	-	

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS

29/30th. SEPTEMBER, 1943.

BOCHUM: Gelsenkirchen: Minelaying.SUPPLYBOCHUM

A successful mixed ground and sky-marking attack was made by 343 heavy bombers and 9 OBOE Mosquitoes. The damage to industrial property was particularly severe, and included the Vereinigte Stahlwerke (Bochumer Verein Werk Gusstahlfabrik, priority-1+), 4 priority-1 factories and 3 priority-1 collieries. The enemy controllers giving running commentaries to groups of fighters appeared to be deceived about the target, and held their fighters over Bremen until the raid was almost over. 7 aircraft were lost, at least 4 to fighters.

GELSENKIRCHEN

9 of 11 OBOE Mosquitoes despatched, bombed Gelsenkirchen using their special equipment. Owing to OBOE failure the other two attacked Bochum, identifying it by the fires started by the main attack. All the Mosquitoes returned undamaged.

MINELAYING

61 mines were laid off the Baltic ports of Danzig, Gdynia and Pillau by 13 of 14 Lancasters despatched. The other aircraft failed to return.

WEATHER FORECAST

Estimated midnight position of fronts: (i) warm from $49^{\circ}\text{N. } 10^{\circ}\text{E} - 50^{\circ}\text{N. } 15^{\circ}\text{E}$ - $50^{\circ}\text{N. } 20^{\circ}\text{E}$; (ii) occluded from $60^{\circ}\text{N. } 10^{\circ}\text{E.} - 55^{\circ}\text{N. } 7^{\circ}\text{E} - 52\frac{1}{2}^{\circ}\text{N. } 4^{\circ}\text{E.}$ becoming (iii) warm to N.W. France and (iv) cold $52\frac{1}{2}^{\circ}\text{N. } 4^{\circ}\text{E} - \text{Thames Estuary} - 49^{\circ}\text{N. } 5^{\circ}\text{W}$; (v) cold from $60^{\circ}\text{N. } 2\frac{1}{2}^{\circ}\text{E} - 55^{\circ}\text{N. } 2^{\circ}\text{W} - 52\frac{1}{2}^{\circ}\text{N. } 10^{\circ}\text{W}$. Position of fronts (i) and (ii) given without confidence.

Home Bases:- mainly fit for take-off, but there will be much cloud at 1,000-1,500ft. over Lincolnshire and S. Yorkshire, where visibility will be rather poor, of the order of 1-3,000 yards. 5 Group in particular expect take-off difficulties. For return, 6 Group fit, with strato-cumulus about 1,000ft., visibility 3-6 miles and 4 Groups mainly fit, with cloud base 1,500-2,000ft., local visibility down to 1-2,000 yards. 5 Group rather worse, cloud base about 1,500ft., visibility 1-3,000 yards generally. 3 and 8 Groups much strato-cumulus, base 1,000-1,500ft., patches down to 600-700 ft., visibility 2-4 miles. Diversions possibly available in W. of 91 Group, particularly Honeybourne area. In 92 Group, cloud base will be generally 1,000-1,500ft.

Germany:- S.W. of fronts (ii), (iii), and (iv) there will be much medium cloud extending as far as the Ruhr, but uncertain whether medium cloud will be broken in Ruhr. N. of front (i) there will be much medium cloud, which will probably not extend as far northwards as Berlin. In the area between the two frontal systems over Germany, there will be broken cloud at medium and high levels. This area includes the Middle Rhine, Hannover, Leipzig, Berlin, Stettin and Danzig.

Central and S. France:- much medium cloud.

Netherlands:- much cloud to great heights. Also much cloud over Plain of Flanders.

...../Route to Ruhr:

Route to Ruhr:- much strato-cumulus, base 1,000-2,000ft., tops 5,000-6,000ft., over England and Western North Sea. Patchy layer of strato-cumulus between 10,000 and 12,000ft. Layers of higher cloud, base of which may be as low as 18,000ft. Towards the target low cloud should disperse, and medium cloud between 10,000 and 12,000ft. should be thin and well-broken. Good chance that cloud at higher levels will have dispersed on eastern part of route and in Ruhr.

Baltic:- considerable medium cloud, well broken strato-cumulus above 2,000 ft., moderate visibility.

<u>Winds:</u>	<u>750mb.</u>	<u>500mb.</u>	<u>300mb.</u>
P. sec. N. of 53°N-2°E	300°/40 mph.	300°/45 mph.	320°/50 mph.
" S. of 53°N-2°E	330°/25 mph.	340°/30 mph.	340°/55 mph.
2°E - Den Helder	330°/25 mph.	330°/40 mph.	350°/65 mph.
Den Helder to Ruhr	360°/30 mph.	010°/50 mph.	010°/75 mph.
2°E - N. Denmark	290°/30 mph.	310°/40 mph.	
N. Denmark - Rugen	280°/20 mph.	340°/35 mph.	
Rugen - Danzig	210°/20 mph.	210°/25 mph.	

BOCHUM

PLAN OF ATTACK

5. Route: East Coast - 53°20'N. 03°50'E - North end of Texel Island - 52°20'N. 07°08'E - TARGET - turn wide left - 51°50'N. 07°30'E - 52°30'N. 07°10'E - North end of Texel Island - 53°20'N. 03°50'E - East Coast.

6. Method of Attack Warning flares (green steady) were to be released at 51°52'N. 07°10'E (27 miles, 355° Bochum) by OBOE Mosquitoes. These aircraft were to mark the aiming-point with T.I. red and with release point flares (2 red with green stars and one white long-burning). Backers-up were to maintain the marking with T.I. green, aiming at T.I. red or to overshoot the estimated centre of T.I. green by 2 seconds. If cloud obscured the T.I., backers-up were to retain their T.I. green, and act as supporters. Supporters and main force aircraft were to aim at T.I. red or the estimated centre of T.I. green if possible. Otherwise they were to bomb on release-point flares on a heading of 194°M. aiming with normal bombsight settings but zero wind at a true airspeed of 165 m.p.h.

7. Timing Zero hour: 2045 hours Duration of attack: 2040-2101 hours

Pathfinder Force

6 OBOE Mosquitoes (+ 3 reserves) from Z-5 to Z+15 at 5 minute intervals.

15 backers-up (12 Lanc. + 3 Hal.) from Z to Z+16 at 1 minute intervals except at times of Mosquitoes, and with 2 at Z+8 and Z+10.

Main Force

Supporters (8 Group) (7 Hal. + 13 Lanc.) at Z

1st. wave: (88 Lancasters) from Z to Z+4

2nd. wave: (57 Halifaxes) from Z+4 to Z+8

3rd. wave: (59 Halifaxes) from Z+8 to Z+12.

4th. wave: (89 Lancasters) from Z+12 to Z+16.

8. Tactics

WINDOW was to be dropped from 04°00'E to Bochum to 04°00'E; at 2 bundles per minute within 20 miles of the target; at one bundle per 2 minutes on remainder of outward route; at one bundle per minute on remainder of homeward route. Owing to interference with OBOE, MONICA was not to be used by the main force between Z-25 and Z+90.

...../SORTIPS.

SORTIES

9.	No. of aircraft despatched.....	352
"	" " " reporting attack on primary area.....	308
"	" " " " " " alternative area.....	(87.5%) 7
"	" " abortive sorties (technical or manipulative defects.....22)	(2.0%)
	(crew failure.....3)	30
	(late.....2)	(8.5%)
	(reserve, not required.....3)	
"	" aircraft missing.....	7
		(2.0%)

WEATHER EXPERIENCED

10. Home Bases:- much cloud, base 1,000-1,500 ft., with considerable patches below 800 ft. from Lincolnshire southwards and local drizzle. Visibility moderate to poor.

Route: broken layer cloud over western North Sea, tops 4-6,000 ft.; no cloud from Dutch coast onwards. Wind; 15-20,000ft./270°-290°/25-30 mph., veering rapidly near Texel and increasing slightly towards target.

Target:- no cloud. Hazy. Wind at 18-20,000ft./350°-360°/40 mph.
No moon.

NIGHT PHOTOGRAPHIC STATISTICS

11.	No. of photographs with bombing examined.....	271
"	" " " showing ground detail (plotted within 3 miles...13)	
	{ " " outside 3 miles... 9)....	40
	(unplotted.....1)	
"	" " " " " fire-tracks (unplotted).....	231

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

CHARACTERISTICS OF ATTACK

12. The marking by the OBOE Mosquitoes was accurate, and the timing fairly good, although the failure of the second aircraft left a gap near the beginning of the raid. The back-up were somewhat late, but they attacked continuously from 2+3 to 2+15. The timing of the main force was fairly good, and a concentrated attack developed round the markers.

DAY RECONNAISSANCE

13. Reconnaissance photographs showed **very severe damage**, concentrated mainly in the west and northwest of the town. Industrial damage was particularly serious and 3 important collieries were affected. The residential and business property suffered comparatively lightly, but the percentage of damage increased by a further 5% making the cumulative business and residential damage about 10% of the whole.

14. 3 of the 4 factories of Vereinigte Stahlwerke were damaged, 2 severely. In the most important of these, the Bochumer Verein Werk Gusstahlfabrik (priority 1) 20 workshops and other buildings, including some housing the basic steel furnaces, were damaged. The Bochumer Verein Werk Stahlindustrie (priority 1) sustained damage to its strip steel rolling mill, smithy and several machine shops. Eisen und Hutten Werke A.G. (priority 1), Krupp Treibstoffwerke G.m.b.H. (priority 1) (benzine, petrol and tur oils) and 2 other works were also severely damaged and 2 unidentified factories affected.

...../15. Severe damage

15. Severe damage was caused to the Bergbau A.G. Lothringen Ver. Pruisen I/IV. Pit, (priority 1), many pit-head buildings being gutted and the by-product plant put out of action. The Gelsenkirchen Bergwerke A.G. Carolinengluck Pit (priority 1) was also damaged; 2 benzol columns and several buildings in the by-products plant were destroyed and the coking-plant was probably affected. N.W. of Bochum the Fried. Krupp A.G. Hannover Pits I/II/V (priority 1) sustained fresh damage to several buildings, including the subsidiary power station and building connected with the production of metallurgical coke for Krupp's Works.

16. Numerous direct hits were scored on railway tracks and sidings, and rail stock was damaged. The railway equipment works, Maschinen and Behndarf A.G., near the railway station was almost completely wrecked. In addition the municipal gas works and the slaughterhouse were severely damaged, and 9 public buildings, including the main post office and the town hall were affected. 10 hatted camps a total of 25 huts were destroyed or damaged, and one (possibly a flak position) were damaged.

ALTERNATIVE TARGETS

17. 7 aircraft attacked alternative targets in the areas of Recklinghausen (2), Haltern (2), Bielefeld, Texel airfield and Vlieland. One aircraft which attacked Bochum, dropped part of its load near Dinslaken.

SPECIAL EQUIPMENT

18. OBOE 6 H.C.I OBOE Mosquitoes and three reserves were detailed to mark the target. 5 sets of markers were released but the OBOE equipment of the second aircraft failed. 2 of the reserves were not called and the reserve on Channel was called in error for one of the reserves using a different channel so that it also was unable to attack. The timing was fairly good, but the failure of the Mosquito which should have attacked second led to a long gap in the marking near the beginning of the raid.

19. H2S 21 of the 30 Y-type aircraft despatched, all of which were using H2S as a navigational aid, reached the target with serviceable sets. Two used their sets to check the position of the markers at which they aimed.

20. GEF The Eastern Chain operated on the Wyoming frequency throughout and on Zanesville and Arizona from 1945 to 2145 hours. Interference, mainly noise drifting railings, was fairly heavy, but the Wyoming signals were strong and no fixes were plotted N.E. of the Zuider Zee. The A signal was below normal strength for this area.

ENEMY DEFENCES

21. Flak and Searchlights Ground opposition was met in coastal regions en route. In the target area and surrounding districts there was much searchlight activity. The beams were forming cones and appeared to be assisting both flak and fighters. Barrage flak was moderately intense, but many guns were directed at illuminated aircraft. 7 aircraft were hit by flak.

22. Fighters Intercepted wireless traffic indicated that the G.C.I. system was again able to operate only on a very small scale. About 10 fighters, using 7 frequencies, were probably involved, but there was no evidence that they achieved any success.

23. Running commentaries, directing groups of fighters, were heard from 3 controls. It was evident that the controls were completely deceived about the target, since they kept the fighters well east of the bomber route until the attack on Bochum was almost over. The direction of flight over the continent may at first have indicated Bremen or Osnabruck as possible objectives, but it is difficult to imagine why the controls apparently believed that Bremen was the target even when the attack on Bochum was half over. There was an indication at one point that two controls using the same frequency were at variance; one of them was heard warning his aircraft to listen to their own control only.

24. 28 interceptions including 7 attacks, were reported. About half of these

....took place in the

took place in the target area or within 30 miles north of Bochum. At least 7 encounters in the target area occurred after the planned end of the attack. It appears that the deflection of the fighters controlled by running commentaries left the target and route almost without fighter protection. Only one bomber was damaged by fighters, 3 of which were destroyed.

CASUALTIES

25. No. of aircraft missing..... 7 (2.0%)
 " " " damaged (flak..... 7)
 (fighter..... 1).....16 (4.5%)
 (other causes... 8)

26. It was estimated that at least 4 missing aircraft were lost to fighters, two on the outward route and two over the target. Two bombers were probably shot down by flak, one after being coded in the target area and one over the Dutch coast on the return.

27. 4 aircraft crashed owing to bad visibility, and another was abandoned by its crew when the controls jammed. One aircraft hit the sea off Hablethorpe with the altimeter reading 160 ft., one made a heavy landing, and another was damaged by incendiary bombs.

GELSENKIRCHEN

28. 9 of 11 OBOE Mosquitoes despatched to drop H.E. on Gelsenkirchen attacked successfully, using their special equipment. Owing to the failure of their OBOE sets, the other two were unable to bomb Gelsenkirchen, so they attacked Bochum, which was identified by the fires started by the main attack. All the Mosquitoes returned undamaged.

MINELAYING

29. 61 mines were laid off Danzig, Gdynia and Pillau by 13 Lancasters out of 14 which set out. One aircraft was equipped with H2S and used it to determine its position when laying his mines. The fourteenth aircraft was last heard about 120 miles west of Sylt, and is believed to have come down in the sea.

EMO/JT.
 BC/S. 26342/1/ORS3,
 28th. November, 1943.

BOCHUM: GELSENKIRCHEN: Mineelaying:

29/10th. SEPTEMBER, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING STACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS		
				PRIM. RUM.	ALT. LBR.	OVER TEMP.	POT OVER TEMP.		PLAK	FIGHTER	NOT R/A	NOT DOWN	NOT ATTACKED	H.R.	Inc.	
BOCHUM	FFP	Hseq-IX	8	5	-	2+1	-	-	-	-	1E	-	-	P. 632.5	687.4	
		Hseq-IV	1	-	-	1*	-	-	-	-	-	-	-	8.0	15.1	
		Hal. Ia	3	3	-	-	-	-	-	-	-	-	-	H. 8.9	14.7	
		Lanc-III	12	11	-	-	1	-	-	-	-	1E	-	-	-	-
	U.I.A.M. FORCE	Hal. Ia	7	7	-	-	-	-	-	-	-	-	-	-	-	Heavy Bombs
		Lanc-III	13	11	-	-	2	-	2	-	1E	-	2	-	-	4000lb.
	1	Lanc-I	12	12	-	-	-	-	1A0	-	-	-	-	-	P. 190	-
		Lanc-III	65	61	-	-	2	-	1	-	-	1	-	-	3	-
	4	Hal. IIAV	35	30	1	1	3	-	1	-	-	3	1	-	H. 2	-
		Hal. Ia	46	38	1	2	3	-	2	-	1E	1	4	-	-	-
5	Lanc-I	20	18	-	-	2	-	1	-	-	-	-	-	-	-	
	Lanc-III	91	82	2+1 ^o	-	6	-	2	-	1	2E+1B	2	7	-	-	
6	Hal. IIAV	28	23	1	1	1	-	1	-	-	1A0	-	3	-	-	
	Hal. Ia	11	7	2	-	1	-	1	-	-	-	-	-	-	-	
BOCHUM TOTAL			352	308	7+1 ^o	6+3*	21	7	6+1A0	1	1A0+ 1B+6E	7	21	-	-	

* Reserve a/c not required.

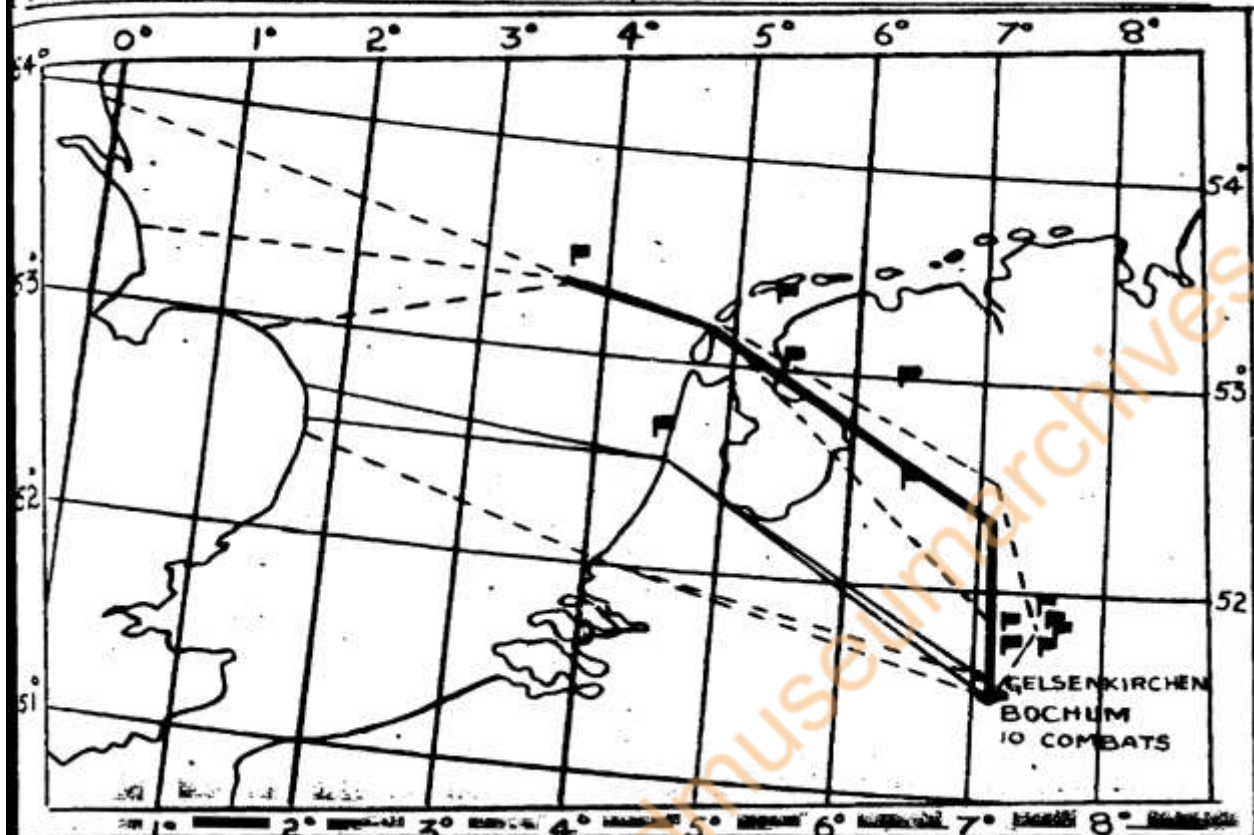
^o Also attacked primary.

...../Contd:

29/10th. SEPTEMBER, 1943. (Contd):

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING STACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. RUM.	ALT. LBR.	OVER TEMP.	POT OVER TEMP.		PLAK	FIGHTER	NOT R/A	NOT DOWN	NOT ATTACKED	H.R.	Inc.
BOCHUM TOTAL			352	308	7+1 ^o	6+3*	21	7	6+1A0	1	1A0+ 1B+6E	7	21	-	-
GELSENKIRCHEN			11	9	2	-	-	-	-	-	-	-	-	P. 7.0	1.6
BOMBING TOTAL			363	317	9+1 ^o	6+3*	21	7	6+1A0	1	1A0+ 1B+6E	7	21	-	-
MINELAYING			14	13	-	-	-	1	-	-	-	-	-	-	28 mines
BOMBING			3	3	-	-	-	-	-	-	-	-	-	-	15 mines
GDP/AL			5	5	-	-	-	1	-	-	-	-	-	-	18 mines
PIL/AL			5	4	-	-	-	-	-	-	-	-	-	-	-
MINELAYING TOTAL			14	13	-	-	-	1	-	-	-	-	-	-	61 mines
TOTAL			377	330	9+1 ^o	6+3*	21	8	6+1A0	1	1A0+ 1B+6E	7	21	-	-

NIGHT OPERATIONS 29/30 SEPTEMBER 1943.



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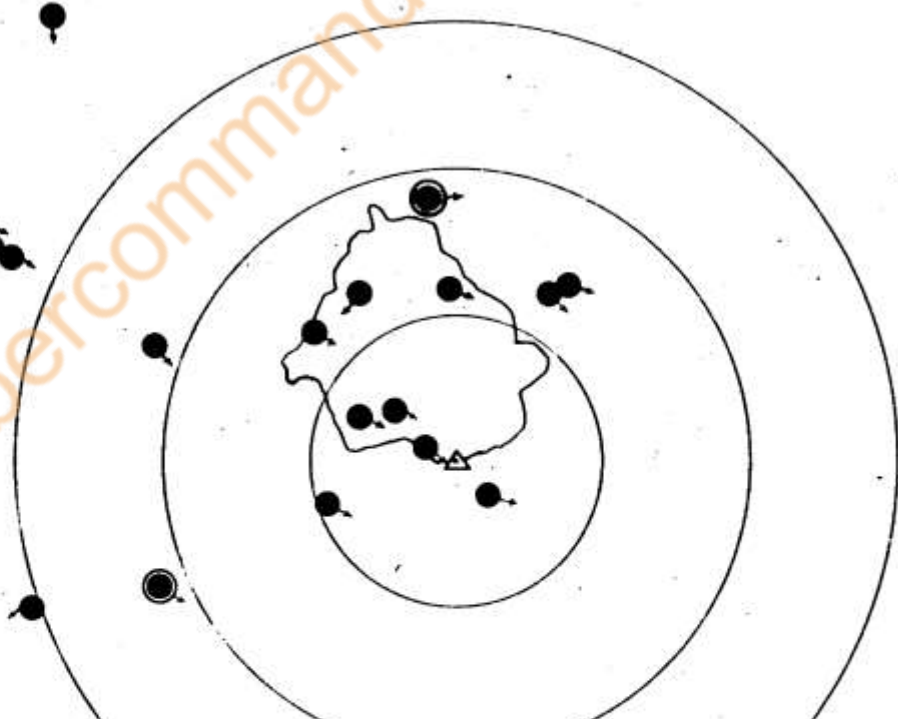
SECRET

Photographs taken with Bombing

	PFF Marker A/C	Main Force A/C
Plotted by Group Detail	●	●
PLOTTED	By Group Detail	By fires
Within 3 miles	13	-
Outside 3 miles	9	-
UNPLOTTED	18	231
No. of prints (with bombing) examined		271

Scale: 1 inch = 1 mile

N 93









FINAL PLOT OF NIGHT PHOTOGRAPHS
TAKEN 29/30th SEPTEMBER 1943 TARGET **BOCHUM**

...ORS BC 385A.
Date 4/11/43 Tracer ESB
Ref 11/2 538 Chkd ACC

SECRET

DIAGRAM INDICATING LOCATION OF ATTACK
AS SHOWN BY DAMAGE.

BOCHUM 29/30th SEPTEMBER 1943

-  Main Area of damage
-  Area of Heavy damage
-  Mainly Residential
-  Industrial
-  Rail Area
-  Water

0 1 2 miles
Scale: 1 inch = 1 mile

