

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 1/2nd JULY, 1943.

Minelaying : Leaflets.

SUMMARY.

Minelaying.

1. 12 Lancasters laid 72 mines off the Frisian Islands without incident.

Leaflets

2. 23 of a force of 25 aircraft scattered leaflets over Northern France. One aircraft crashed on landing, becoming a total loss. Engine trouble caused one aircraft to attack an alternative target and another to return early.

Meteorological Forecast

3. Home Bases:- Weather doubtful for take-off, otherwise bases in operational groups will be fit. For return, stratus (base 600-1,000 ft.) expected in operational groups, but there may be lower cloud locally. Diversions available in 91 and 93 groups until 0300 hours; at Pershore and Honeybourne cloud will remain at 1,000 ft. until 0430 hours.

Germany:- Small amounts of strato-cumulus in N.W. and E., with larger patches in N.W. Residual ~~thunder~~ cloud in S.

France:- Fine except in N.W., where there will be small amounts of strato-cumulus with occasional large patches.

Frisians and route:- 10/10ths cloud at 5-8,000 ft. with patches below, base rising to 1,000 ft. near the target area, with moderate visibility.

Sorties

		<u>Minelaying</u>	<u>Leaflets</u>
4.	(a) No. of aircraft despatched	12	25
	(b) " " " reaching primary area.....	12	23
	(c) " " " alternative area.....	nil	1
	(d) " " abortive sorties.....	nil	1*
	(e) " " aircraft missing	nil	nil
	(f) " " mines laid.....	72	

* engine trouble.

Weather Experienced

5. Bases: layer cloud below 1,000 ft, over east coast districts early in the night spread rapidly inland. By 0600 hours, areas E. of a line Portland-Carlisle were affected, with fog patches in Lancashire.

Frisians and North Sea:- 8-10/10ths layer cloud, base 900-1,000 ft. tops about 1,000 ft. No moon.

Winds:- at 1-2,000 ft. 020°/20 m.p.h.

Northern France:- 7-9/10ths cloud, tops 8,000 ft., moderate visibility, No moon.

Wind at 15,000 ft. 040°/15 m.p.h.

Route to N. France:- patches of layer cloud over the Channel, tops 6,000 ft.

/Enemy Defences.....

Enemy Defences

6. Low cloud on route and over the target area made the minelaying operation uneventful. No enemy aircraft was seen, and there was no flak.

7. Both light and heavy flak were, however, experienced over the Channel Islands and coastal areas of northern France, and also from shipping off the coast; a small concentration of searchlights operated at Le Havre. Defences in the target areas were also active, and 3 Wellingtons were damaged; one of these crashed on return. None of the three interceptions reported developed into attacks.

Casualties

8. One Wellington crashed on return from Rennes, after being damaged by flak, and was destroyed. 2 other cases of slight damage were reported. None of our aircraft was missing.

EMD/JT/PVD.
BC/S.26342/4/ORS.
20th September, 1943.

		MINELAYING		LEAFLETS		1/2 JULY 1943.								
TARGET	GROUP	TYPE	BORTIES	A/C REPORTING ATTACK ON		ABORTIVE BORTIES		MISSING	DAMAGE			INTER-CEPTIONS		RESULTS
				PRIM. AREA	ALT. AREA	OVER EN. TERRIT.	NOT OVER EN. TERRIT.		FLAK	SEWER	NOT E/L	ATT-CKED	NOT ATTACKED	
MINELAYING		LANCASTER I	6	6	-	-	-	-	-	-	-	-	-	36 mines
FRISLINS	5	LANCASTER III	6	6	-	-	-	-	-	-	-	-	-	36 mines
MINELAYING TOTAL			12	12	-	-	-	-	-	-	-	-	-	72 mines.
<u>LEAFLETS</u>														
TOURS	91	WELLINGTON II	7	5	1	-	1	-	-	-	-	-	-	2
PARIS	92	WELLINGTON III	3	3	-	-	-	-	-	-	-	-	-	-
		WELLINGTON I	1	1	-	-	-	-	-	-	-	-	-	-
LE MANS	93	WELLINGTON III	1	1	-	-	-	-	-	-	-	-	-	-
		WELLINGTON I	2	2	-	-	-	-	-	-	-	-	-	-
NANTES	93	WELLINGTON III	5	5	-	-	-	-	1	-	-	-	-	1
		WELLINGTON I	1	1	-	-	-	-	-	-	-	-	-	-
RENNES	93	WELLINGTON III	1	1	-	-	-	-	1E	-	-	-	-	-
		WELLINGTON I	1	1	-	-	-	-	1	-	-	-	-	-
		WITNEY V.	2	2	-	-	-	-	-	-	-	-	-	-
LAVAL	93	WELLINGTON III	1	1	-	-	-	-	-	-	-	-	-	
LEAFLET TOTAL			25	23	1	-	1	-	2 + 1E	-	-	-	3	
TOTAL			37	39	4	-	1	-	2 + 1E	-	-	-	3	

BOEMER COMMAND REPORT ON NIGHT OPERATIONS - 2/3rd JULY, 1943.Duisburg : Cologne : Minelaying.SUMMARY.Duisburg and Cologne.

1. 2 Mosquitoes bombed Duisburg and 3 bombed Cologne from a high level. Bursts were seen in the built-up areas of both towns. All the aircraft returned undamaged.

Minelaying

2. Frisians:- 8 Halifaxes laid a total of 32 mines off the Frisian Islands, returning without damage, although one interception was reported.

3. N.W. Coast of France:- 24 Wellingtons were despatched to lay mines off the N.W. coast of France. The task was completed by 19 aircraft, which laid 38 mines. Three sorties were abortive owing to technical defects and two because of the weather.

Meteorological Forecast

4. Home Bases:- Fit for take-off in 6, 4 and 3 Groups, but hazy, particularly in the north. For return, mainly 10/10ths stratus, or strato-cumulus, base 800-1,500 ft., except locally near the east coast. Visibility generally 2,000 yards, but down to 1,000-1,500 yards locally in the north. Diversions on south coast and S.W. peninsula and in Training Groups.

Germany:- Much strato-cumulus at 1,000 ft. in N.W. Good chance of less than 5/10ths strato-cumulus in Ruhr, with well broken medium cloud.

France:- Generally small amounts of cloud in N., little or none in S., and off W. coast. 10/10ths strato-cumulus over N. coast.

Sorties.

		<u>Escorting.</u>	<u>Minelaying</u>
5.	(a) No. of aircraft despatched.....	5	32
	(b) " " " attacking primary area.....	5	27
	(c) " " abortive sorties { weather.....	Nil	2
	{ tech. defect.....	Nil	3
	(d) " " aircraft missing.....	Nil	Nil
	(e) " " mines laid.....	-	70

Weather Experienced.

6. Home Bases:- Layer cloud with base below 1,000 ft. over E. coast districts at dusk, spread inland, affecting all operational groups by midnight. This spread to a line Sealand - Isle of Wight by 0600 but simultaneously a clearance moved southwards over Yorkshire and Lincolnshire, giving more broken and high cloud.

Duisburg and Cologne:- 10/10ths strato-cumulus, base 1,000 ft., tops 3-5,000 ft., extended to just W. of the target area, but considerable breaks were found over the towns. Visibility poor to moderate.

N.W. France:- Little or no cloud. Moderate to good visibility. Wind at 6,000 ft., 070°-110°/20 m.p.h.

Frisians:- 10/10ths strato-cumulus, base 900-1,400 ft., tops 2-3,000 ft. Visibility moderate.

No moon.

/Enemy Defences.....

Enemy Defences

7. Duisburg and Cologne. No opposition was experienced at Duisburg, but over Cologne there was accurate heavy flak, which failed to damage the bombers. No enemy aircraft was seen.

8. Frisian Islands. Flak was inactive, and the only interception reported did not develop into an attack.

9. N.W. Coast of France:- Flak from coastal batteries and ships was reported but none of the minelayers was hit. There was no evidence of fighter activity.

Casualties.

10. The only casualty was a landing accident caused by a burst tyre. No losses were incurred.

EMO/JT/PVD.
BC/S. 26342/4/ORS.
20th September, 1943.

DUISBURG COLOGNE MINELAYING 2/3 JULY, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		MISSILE	DAMAGE			INTER-CEPTIONS		RESULTS
				FRON. AREA	REAR AREA		FLAK	FIGHTER	NOT E/A	ATTACHED	NOT ATTACHED	
DUISBURG	P.F.P.	MESQUITO IV.	2	2	-	-	-	-	-	-	-	-
COLOGNE	P.F.P.	MESQUITO IV	3	3	-	-	-	-	-	-	-	-
BOMBING TOTAL			5	5	-	-	-	-	-	-	-	-
LORIENT	1	WELLINGTON X	8	7	1	-	-	-	-	-	-	14 mines
ST. NAZAIRE	4	WELLINGTON X	8	6	2	-	-	-	-	-	-	12 mines
FRISIANS	6	HALIFAX II & V	6	6	-	-	-	-	-	1	-	24 mines
		HALIFAX Ia	2	2	-	-	-	-	-	-	-	8 mines
BREST	6	WELLINGTON X	8	6	2	-	-	-	1 AC	-	-	12 mines
MINELAYING TOTAL			32	27	5	-	-	-	1 AC	-	4	70 mines
TOTAL			37	32	5	-	-	-	1 AC	-	1	

x 1,000 lb. MINES.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 3/4th JULY, 1943.COLOGNE: Hamburg; Duisburg; Minelaying.COLOGNE.SUMMARY

1. A force of 653 bombers made a successful ground marking attack on Cologne, causing much industrial damage on the east bank of the Rhine. Many fires were still burning when reconnaissance photographs were taken on the following day. Both fighters and ground defences were very active; of the 30 missing bombers it is estimated that 18 were shot down by fighters and about 11 by flak.

Hamburg and Duisburg.

2. Of 8 Mosquitoes which were despatched to harass Hamburg and Duisburg, 7 bombed the primary target and the eighth returned early. - No damage was sustained.

Minelaying.

3. 14 Stirlings set out to lay mines off the Frisian Islands. 12 completed the task, laying 62 mines, and 2 failed to return.

Meteorological Forecast.

4. Home Bases: For take-off, small amounts of cloud above 2,000 ft., moderate to good visibility but locally less than 1,500 yards in north of 6 Group. For return, no cloud except locally along the east coast, where there may be up to 8/10ths at 1,500 ft. Visibility at most bases more than 2,000 yards up to 0600 hours, but may be less than 1,500 yards after 0400 hours at a few 1 and 5 Group stations. Diversions in Training Groups and south coast stations.

Germany: much strato-cumulus in west, tops 5,000 ft. Base in Heligoland Bight 1,000 - 2,000 ft.

France: little or no cloud in west.

Cologne and route: small amounts of cloud over England, probably increasing to 7-9/10ths, base 1,000 ft., tops 5,000 ft. over the continent and at the target. (This amount may be an overestimate). Visibility moderate.

Hamburg: cloud decreasing towards and at target to small amounts. Visibility good.

Winds:	Bases - 03°E	03°E - Cologne	03°E - Hamburg.
8,000 ft.	330°/5-10 m.p.h.	350°/20 m.p.h.	340°/25 m.p.h.
18,000 ft.	310°/20 m.p.h.	320°/25 m.p.h.	320°/30 m.p.h.
28,000 ft.	310°/45 m.p.h. (40 m.p.h. in S.)	330°/30-35 m.p.h.	310°/45 m.p.h.

C O L O G N E .Plan of Attack.

5. Zero Hour 0115. Period of Attack 0114 - 0159.

Green steady warning flares were to be dropped by 10 OBOE Mosquitoes at 50° 45' N 06° 48' E, 16 1/2 m. S.W. of the release point. At the target, between zero - 4 and zero + 40, the Mosquitoes were to drop release point flares (red with green stars and one white) igniting at 13,000', so that bombs aimed at them by the main force on a heading of 015°M, at a speed of 165 m.p.h. I.A.S. would hit the aiming point. If cloud conditions proved to be such that ground-markers were visible, 33 backers were to aim green T.Is at red. If the red T.Is could not be seen, the backers up were to act as main force and bring their green T.Is back. The main force was to aim at red

.../T.Is

T.Is., the estimated centre of all green T.Is or at release point flares. The main force was to be divided into 9 sections, each of approximately 70 aircraft. Lancasters and Halifaxes were to carry mixed loads, Stirlings and Wellingtons (except Wellington 423's) were to carry incendiaries only.

Timing.

6.	Mosquitoes ⁺	Backers-up	Main Force.
Z - 4	4	-	Sect.1 Lancs. (Zero)-(Z+4)
Z + 5	-	3 @ 1 min.intervals(Z+2)-(Z+4)	Sect.2 Lancs. (Z+5)-(Z+9)
Z + 10	-	4 @ 1 min.intervals(Z+6)-(Z+9)	Sect.3 Wells. (Z+10)-(Z+14)
Z + 15	-	4 @ 1 min.intervals(Z+11)-(Z+14)	Sect.4 Stirs. (Z+15)-(Z+19)
Z + 20	-	4 @ 1 min.intervals(Z+16)-(Z+19)	Sect.5 Hals.& Stirs. (Z+20)-(Z+24)
Z + 25	-	4 @ 1 min.intervals(Z+21)-(Z+24)	Sect.6 Hals. (Z+25)-(Z+29)
Z + 30	-	4 @ 1 min.intervals(Z+26)-(Z+29)	Sect.7 Hals. (Z+30)-(Z+34)
Z + 35	-	4 @ 1 min.intervals(Z+31)-(Z+34)	Sect.8 Lancs. (Z+35)-(Z+39)
Z + 40	-	4 @ 1 min.intervals(Z+36)-(Z+39)	Sect.9 Lancs. (Z+40)-(Z+44)
		2 @ 1 min.intervals(Z+41)-(Z+42)	

+ plus 3 reserves.

Bomb Loads.

7. 13 Mosquitoes - 1 (3 flares green) + 1 (2 flares red/green stars + 1 white) + 2 T.I. rod (1 L.B.)
 9 Halifaxes - 4 T.I. green (1 L.B.) + 3 x 1000 G.P. (L.D.) + 8 x 500 M.C.
 25 Lancasters - 4 T.I. green (1 L.B.) + 1 x 4000 H.C. + 6 x 1000 M.C.

Routes.

8. Orfordness (8,3,4 & 6 Groups)
 Southwold (1 Group) } 51°22'N 03°20'E - 50°28'N 06°32'E.
 - Target - Turn right - 50°47'N 07°23'E - 50°12'N 06°44'E - 50°20'N
 01°32'E - (Dungeness (8,3,6 & 1 Groups)
 (Beachy Head (4 Group)

Sorties.

9.	No. of aircraft despatched	653
	" " reporting attack on primary area	559 (85.6%)
	" " " alternative area	9 (1.4%)
	" " abortive sorties (manipulative or technical)	
	{ defect 51	
	{ sickness of crew 1	.55 (8.4%)
	{ late 1	
	{ collision 1	
	{ attacked by fighter 1	
	No. of aircraft missing	30 (4.6%)

Weather Experienced.

10. Home bases: Operational and O.T.U. bases fit all night, apart from a few local mist patches. Fog and mist widespread over S.E. England.

Route: 4-7/10ths strato-cumulus, base 2,000 ft., tops 4-6,000 ft. with local patches of 10/10ths albu over sea. Cloud cleared almost completely over the continent. Visibility moderate to good over the sea, hazy over the continent.

.../Target

Target: 0-2/10ths cloud, with moderate visibility. Hazy. Contrails at 23,000 ft. No moon.

Wind: 8,000 ft./350°/20 m.p.h.; 18,000 ft./320°/25 m.p.h.; 30,000 ft./330°/30-35 m.p.h.

Night Photographic Evidence.

11.	No. of photographs with bombing examined	471
	" " " " showing (Plotted within 3 miles)	101
	" " " " " ground detail { " outside 3 "	27
	" " " " " " (Unplotted)	25
	" " " " " " " showing (Plotted within 3 miles)	271
	" " " " " " " " fire-tracks { " outside 3 "	30
	" " " " " " " " " (Unplotted)	17
	No. of aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming point	430

Narrative of Attack.

12. The target was accurately ground-marked by 7 Oboe Mosquitoes, at fairly regular intervals, with only one gap, and the backing-up was continuous. The concentration achieved was not so good as several previous ground-marking raids; but the attack was undoubtedly a success. The bombing on this occasion was almost entirely on the east bank of the Rhine, around the aiming point, but several aircraft bombed south of the target along the line of approach, where decoys are believed to have been ignited.

Daylight Reconnaissance.

13. Photographic cover obtained on 4th July showed damage caused by the sky-marking raid of 28/29th June and by the attack at present under consideration. Some of the fresh damage may have been caused during the raid of 16/17th June, for which inadequate cover was obtained. In general the damage on the west of the Rhine was probably done on 28/29th June, and on the east, where many fires were burning at the time of photography, on 3/4th July. It is not, however, possible to separate the incidents exactly, and the following paragraphs include all damage seen on the photographs.

14. On the west bank of the river at least 1,000 acres of the centre of the town were 80% devastated, chiefly by fire. Very heavy damage was also seen on the east bank, throughout the districts of Kalk, Deutz, Buchheim and south Mülheim. There was also much damage in the outskirts, from Poll in the south, going west and north through Bayenthal, Sülz, Lindenthal and Ehrenfeld; to Richl, northeast of the main station.

15. Many buildings on the east bank were still burning at the time of photography, thus preventing any accurate assessment of the damage. However, the Humboldt-Deutz factories both at Kalk and at Deutz suffered very severe damage, and the Kalk Chemical Factory, the West Deutsche Waggonfabrik and the Vereinigte Stahlwerke Vanden Zyhnen were also damaged. Several large sheds at the Kalk railway sidings were destroyed. Further south many factories were damaged; among those identified the most seriously damaged were the Citroen Werk at Poll, and the Mannesmann Röhren- und Eisenhandel at Westhafen. Damage to residential and commercial property on the east bank was probably severe, but large areas were obscured by smoke.

16. On the west of the Rhine there was comparatively little industrial damage, but 15 machinery firms and an electric motors works were among the 15 factories damaged. A large number of offices of industrial firms were however damaged or destroyed in the central city area. 31 large public buildings, excluding the Cathedral, which was almost unharmed, were damaged, 17 being practically destroyed. There was also much devastation of public utilities and transport and railway property, including the town hall, 3 post or telegraph offices and 2 police stations almost completely wrecked. More than 850 acres of residential and business property were destroyed and 63,250 dwelling units rendered uninhabitable.

Alternative Targets.

17. 9 aircraft attacked alternative targets in the areas of Buskirohen (2), Aachen, Alst, Bonn, Malines (2), and Bruges and near the target.

Special Equipment.

18. OBOE. 10 OBOE Mosquitoes and 3 reserves were despatched to mark the target including one reserve, dropped red T.I's. The first of these fell about one mile short of the aiming point, but the remainder were accurately placed. Apart from one long gap between zero + 25 minutes and zero + 35 minutes owing to the number of failures, the marking was almost continuous. 3 sorties were abortive owing to failure of the special equipment, and one of these, whose releasing signal was intermittent, released skymarkers, but not ground markers, 10 miles short of the target. The other 3 failures were due to engine failure (2) and generator trouble.

19. H2S. H2S equipment was carried by 5 aircraft as a navigational aid only. One returned early and one was lost.

20. GEE. The Eastern Chain operated on the Wyoming frequency throughout the raid and on the Zanesville (target) frequency from 00.30 to 03.00 hours. The average range obtained on the outward route was 290 miles and on the return it was 320 miles. The Zanesville frequency was subject to heavy jamming of the usual types and only a few fixes of over 250 miles were obtained on this wavelength. The Wyoming frequency, on the other hand, was almost free of jamming and 483 fixes of over 300 miles were obtained. This is the first record of the results obtained changing the Virginia to the Wyoming frequency; although this frequency had been in the air for three days, the enemy did not jam it on this raid.

Enemy Defences.

21. Flak and Searchlights. Defences all along the Dutch coast went into action against outbound bombers, particularly at Knocke, Walcheren, and Antwerp. The usual heavy fire was encountered over Aachen. Over Cologne, the defences may have been assisted by our use of release point flares, which were dropped in spite of the fact that cloud was nowhere denser than 2/10ths. Intense heavy flak in barrage form was concentrated around the flares; elsewhere the flak appears to have been a mixture of moderate barrage, predicted and visual fire at targets illuminated by the numerous searchlights. Flak was reported from many places on the homeward route, especially at Bonn, Lille, Douai and Charleroi, but fire was nowhere of more than moderate intensity. 64 aircraft were damaged by flak, mainly while flying through the barrage on the run up to, and over the target.

22. Fighters. Enemy wireless traffic intercepted on this night was mainly from the Gilze, St. Trond and Florennes areas, where 10 of the 11 claims of destruction of bombers were located. A total of 12 patrols were heard, these undertaking at least 25 pursuits. A notable feature of the night's wireless traffic was the number of references to failure of A.I., this may have been due to use of the countermeasure GROCER. Returning crews reported a total of 13 attacks, 23 other combats, 15 approaches and 3 followings, a total of 59 interceptions by enemy fighters. A slightly larger number of these occurred on the homebound than on the bound route; 7 were reported from the target area. 4 reports of attacks by British aircraft are included. 2 of these, both referring to attacks on a Lancaster by a Lancaster, were probably the same incident. 4 aircraft were damaged by enemy fighters and 3 by British aircraft.

Casualties.

23.	No. of aircraft missing.	. . . . .	30 (4.6%)
	" " " damaged	{ flak 64	. . . . . 82 (12.2%)
		{ fighter 4	
		{ other causes 14	

From observations by crews and the claims of German pilots it is estimated that about 18 bombers were destroyed by enemy aircraft at Knocke, Florennes, Antwerp (2), St. Trond (4), Brussels, Liege (2), Cologne (3) Huy and Charleroi (3). 11

5.

aircraft were shot down by flak at Cologne (8), Knocke, Walcheren and Liege. 2 enemy aircraft were destroyed and one damaged.

2 bombers were seriously damaged in landing accidents; other damage was caused by collisions, incendiary bombs, the drop-bar from a small bomb container, machine gun-fire from British aircraft, and a recognition signal which set fire to the aircraft.

Hamburg and Duisburg

4. 4 Mosquitoes were despatched to Hamburg; and 4 to Duisburg. One Duisburg sortie was abortive owing to a technical defect, and the remainder completed the task. There was no opposition and all returned undamaged.

Minelaying.

5. 62 mines were successfully laid off the Frisians Islands by 12 Stirlings of a force of 14. The other 2 are missing without trace. No damage was sustained by the returning aircraft.

D/IAS.

OC/S.26342/5/ORS.3.

23rd 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 R/A	ATT-ACKED	NOT ATT-ACKED	Tons of Bombs	H.E.	Inc.
COLOGNE	B PFF.	Mosq. IV	7	4	-	2	1	-	-	-	-	-	-	-	P. 917.8 878.7 L. 12.5 14.9 H. 33.9 47.8
		Mosq. IX	6	3	-	1	2	-	-	-	-	-	-	-	
		Hal. IIAV	1	-	-	1	-	-	-	-	-	1	-	-	
		Hal. IA	8	8	-	-	-	-	-	1	-	-	-	-	
		Lanc. I	8	7	1	-	-	-	-	-	-	-	-	-	
		Lanc. III	16	14	1	-	1	-	-	2	-	-	1	2	
	B MAIN FORCE	Hal. IIAV	1	1	-	-	-	-	-	1.0	-	-	-	-	Heavy Bombs 8000lb. 4000lb. P. 0 24 L. - 3 H. - 10
		Hal. LI	8	5	-	-	1	2	-	-	-	-	-	-	
		Lanc. I	2	2	-	-	-	-	-	-	-	-	-	-	
	1	Lanc. I	25	20	-	-	3	2	-	-	-	-	-	1	
		Lanc. III	72	64	-	-	5	3	-	5	1	-	2	3	
		Well. X	27	24	-	-	2	1	-	2	-	1	2	4	
	3	Stir. I	3	2	-	-	1	1	-	-	-	-	-	-	Even Primary Even Alternative Carried by missing A/C
		Stir. III	73	57	4	-	1	6	-	9	-	1E+ 1.0C1	1	4	
	4	Lanc. II	14	12	-	-	1	1	-	1	-	-	3	3	
		Hal. IIAV	99	88	1	-	7	3	-	1E+ 2B+16	2.0	-	4	5	
		Hal. IA	23	21	-	-	1	1	-	3	-	-	1	1	
	5	Well. X	36	28	-	-	4	4	-	1	-	-	1	1	
		Lanc. I	39	37	-	-	2	1	-	3	-	1	1	4	
	6	Lanc. III	102	94	1	-	6	1	-	11	-	2.0+5	-	7	
Hal. IIAV		38	32	-	-	3	3	-	3	-	-	1	4		
6	Hal. IA	4	4	-	-	-	-	-	-	-	-	-	-		
	Well. X	26	18	1	-	4	3	-	1E+ 2D+2	-	2.0	1	2		
COLOGNE TOTAL			653	559	9	5	50	30	2E+ 2B+ 1.0C+ 59	3.0C+ 1	1E+ 5.0C +7	18	41		

COLOGNE: DUISBURG: HAMBURG: MINELAYING: 3/4th. JULY, 1943. (Contd.)

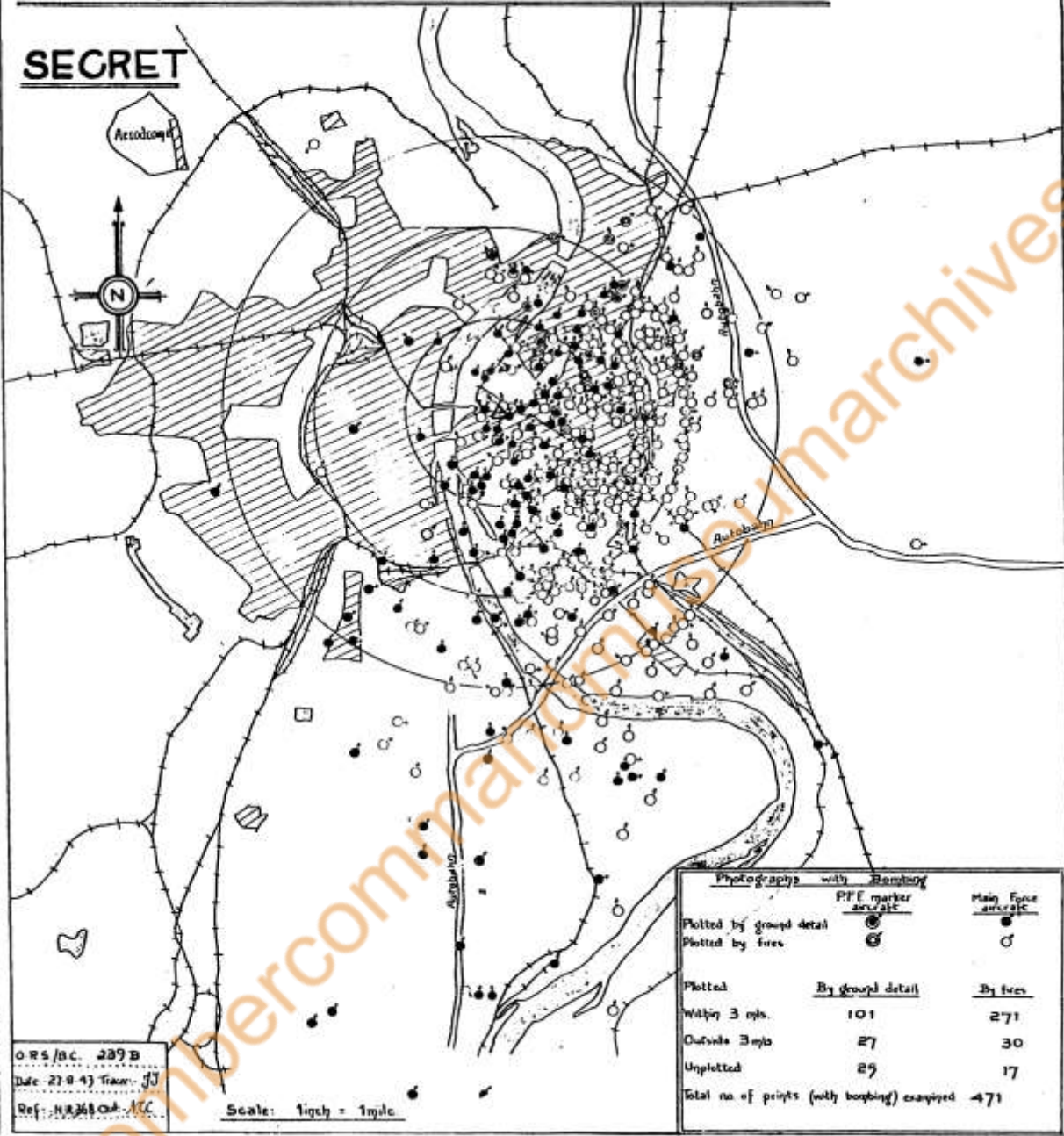
TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA.	ALT. AREA.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT R/A	ATT-ACKED	NOT ATT-ACKED	Tons of Bombs	H.E.	Inc.
COLOGNE TOTAL			653	559	9	5	50	30	2E+ 2B+ 1.0C+ 59	3.0C+ +1	1E+ 5.0C +7	18	41		
DUISBURG	B PFF	Mosq. IV	4	3	-	1	-	-	-	-	-	-	-	P. 2.3 H.E.	
HAMBURG	B PFF	Mosq. IV	4	4	-	-	-	-	-	-	-	-	-	P. 3.1 H.E.	
MINELAYING FRISLANS	B	Stir. I	2	2	-	-	-	-	-	-	-	-	-	11 mines	
MINELAYING FRISLANS	B	Stir. III	12	10	-	-	-	2	-	-	-	-	-	51 mines	
MINELAYING TOTAL			14	12	-	-	-	2	-	-	-	-	-	62 mines	
TOTAL			675	578	9	5	51	32	2E+ 2B+ 1.0C +59	3.0C +1	1E+ 5.0C +7	18	41		

RAID TRACK NOT AVAILABLE

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN **3/4** JULY 1943 TARGET: **COLOGNE.**

361

SECRET



o.R.S./a.c. 289 B
 Date: 27-9-43 Taken: J.J.
 Ref: N. 268 Out: A.C.C.

Scale: 1 inch = 1 mile

Photographs with Bombing		
	P.T.E. marker square	Main Force circle
Plotted by group detail	⊙	⊙
Plotted by force	⊙	⊙
Plotted	<u>By group detail</u>	<u>By force</u>
Within 3 mls.	101	271
Outside 3 mls	27	30
Unplotted	29	17
Total no of prints (with bombing) examined 471		

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 4/5th JULY, 1943.

Ruhr : Minelaying : Leaflets.

SUMMARY.

Ruhr.

1. 3 P.F.P. Mosquitoes left on a harassing raid against Duisburg. 2 attacked the target, bombing from above 10/10ths cloud on D.R. runs from GEE fixes. The third failed for technical reasons. All returned undamaged.

Minelaying

2. 13 Stirlings of 3 Group laid 50 mines off the French Atlantic coast. No casualties were sustained.

Leaflets

3. 4 Wellingtons of 92 Group dropped leaflets in the Bourges area without incident.

Metereological Forecast

4. Midnight frontal positions:- (1) warm front from S.W. Norway to Sylt to Osnabruck whence weak, to just W. of Cologne (2) occlusion from S.W. Norway to Spurn Head to Pembroke Dock (3) cold front from S.W. Norway to Banbecula.

Bases:- Belt of medium and low cloud, with slight rain, probably less than 100 miles wide, associated with occlusion lying from Wash to Bristol at 2400. Otherwise fit all night, with variable low cloud at 1,500 ft. Slight icing possible. Well spaced medium cloud above 12,000 ft. Visibility more than 3 miles.

Germany:- Considerable high and medium cloud ahead of front (1) with well broken low cloud. Much strato-cumulus over Ruhr, with up to 8/10ths medium cloud at 12-15,000 ft. 7-10/10ths layered cloud, with gaps, over North Sea.

W. France:- Much low cloud below 1,000 ft. in N., breaking to nil S. of Nantes.

<u>Statistics.</u>	<u>Ruhr.</u>	<u>Minelaying</u>	<u>Leaflets</u>
(a) No. of aircraft despatched.....	3	13	4
(b) " " " reaching primary area.....	2	13	4
(c) " " abortive sorties (technical defect).....	1	0	0
(d) " " aircraft missing.....	0	0	0

Weather Experienced.

Bases:- Fit all night.
 Ruhr:- Much layered cloud to 20,000 ft. Good visibility above.
 W. France:- Little or no cloud. Good visibility.
 No moon.

Enemy Defences.

Little flak opposition was encountered. 2 abortive interceptions were reported.

Casualties

None.

JT/PVD.
 3.26342/4/ORS.
 3 September, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE	INTERCEPTIONS		RESULTS
				PRIM. AREA		OVER EN. TERRIT.	NOT OVER EN. TERRIT.			ATT- ACKED	NOT ATT- ACKED	
DOINBURG	8 P.P.F.	MOSQUITO IV	3	2		-	1	-	-	-	-	
MINELAYING CIRONDE R.	3	STIRLING I.	4	4	-	-	-	-	-	-	-	42 mines
		STIRLING III	5	5	-	-	-	-	-	-	-	16 mines
LA PALICE	3	STIRLING I	1	1	-	-	-	-	-	-	-	3 mines
		STIRLING III	3	3	-	-	-	-	-	-	-	9 mines
MINELAYING TOTAL			13	13	-	-	-	-	-	-	-	40 mines
UNPLETS SOURCE	92	WELLINGTON III	4	4	-	-	-	-	-	1	1	
TOTAL			20	19	-	1	-	-	-	1	1	

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 5/6th JULY, 1943.

HAMBURG : Cologne : Minelaying : Leaflets.

SUMMARY.

Hamburg: Cologne.

1. 3 Mosquitoes, out of a force of 4, carried out a harassing attack on Hamburg, while 4 others raided Cologne. All returned undamaged.

Minelaying.

2. 30 Wellingtons and Stirlings, out of a force of 34, laid 90 mines off the Frisians and the French Atlantic coast. 2 aircraft were lost.

Leaflets

3. 15 Wellingtons and Whitleys, of a force of 18, dropped leaflets over France without loss.

Meteorological Forecast

4. Bases:- Fit all night. Rainy cloud in 4 and 6 Groups, base above 1,500 ft. elsewhere, well broken.

Germany:- Weak occlusion lying just S. of Ruhr at midnight with considerable layer cloud to 10,000 ft, and much medium and high cloud above. Little cloud over North Sea, increasing beyond 05°E to 5-8/10ths, base 1,500 ft., and tops 5-7000 ft. Wind to Ruhr at 18,000 ft., 280°/50-55 m.p.h., decreasing to 40 m.p.h. at target.

1. France:- Much cloud in Channel, base 1,500 ft., lifting slightly and breaking towards Lorient.

<u>Sorties.</u>	<u>Bombing</u>	<u>Minelaying</u>	<u>Leaflets</u>
5. (a) No. of aircraft despatched.....	8	34	18
(b) " " " reaching primary area	7	30	15
(c) " " abortive sorties (tech. (defect, 3) (weather, 3))	1	2	3
(d) " " aircraft missing.....	0	2	0

Weather Experienced

6. Bases:- Fit all night.

Hamburg:- Much medium cloud.

Cologne:- 6/10ths medium cloud, tops 12,000 ft.

Frisians:- Variable layer cloud, base 2-3,000 ft., with patches of 10/10ths at 800 ft.

W. France:- Much medium cloud. Variable low cloud at 2,000 ft., with rain. No noon.

Enemy Defences.

7. Slight predicted heavy flak was encountered from Cologne and Hamburg, searchlights were rendered ineffective by the cloud. Mining aircraft met a little light and heavy flak from the usual coastal points. 38 sorties by controlled night fighters were overheard, 6 of which were active against hostile aircraft in the areas of Gilse, Deelen/Schipol and N.W. Germany. 3 attempted interceptions and 2 inconclusive combats were heard. No claims were made.

Casualties.

8. 3 Two minelayers did not return, one from the Frisians and one from Brest. There is no evidence to suggest the cause or place of either loss. No other casualties were sustained, apart from one minor hit from flak over Brest.

MLM/JT/PVD.
BO/S. 26342/4/ORS.
21st September, 1943.

TARGET	GROUP	TYPE	BOMBS	A/C REPORTING ATTACK ON		ADAPTIVE BOMBS		MISSILE	DAMAGE		LIVES-LOSS		RESULTS.
				FRID. AREA	...	OVER EN. TERRIT.	NOT OVER EN. TERRIT.		FLAK FIRING	NOT N/A	ATT-ACKED	NOT ATT-ACKED	
HAIDOUHC	8 P.F.F.	MOSQUITO IV	4	3	-	1	-	-	-	-	-	-	
COLOGNE	8 P.F.F.	MOSQUITO IV	4	4	-	-	-	-	-	-	-	-	
BOMBING TOTAL			8	7	-	1	-	-	-	-	-	-	
MINELAYING		STIRLING I	2	2	-	-	-	-	-	-	-	1	31 mines
FRISIANS	3	STIRLING III	10	7	-	2	1	-	-	-	-	1	37 mines
ST. NAZAIRE	4	WELL: X	6	6	-	-	-	-	-	-	-	-	12 mines
LORENT	4	WELL: X	8	8	-	-	-	-	-	-	-	-	16 mines
BREST	4	WELL: X	8	7	-	-	1	1	-	-	-	-	14 mines
MINELAYING TOTAL			34	30	-	2	2	1	-	-	-	2	90 mines
<u>LEAFLETS</u>													
LENS	93	WHITLEY V.	4	3	1	-	-	-	-	-	-	-	
LILLE	93	WELL: Ic	2	1	1	-	-	-	-	-	-	-	
PARIS	93	WELL: X	1	1	-	-	-	-	-	-	-	-	
		WELL: III	2	2	-	-	-	-	-	-	-	-	
ORLEANS	93	WELL: X	1	1	-	-	-	-	-	-	-	-	
		WELL: III	6	5	-	1	-	-	-	-	-	-	
LEAFLET TOTAL			18	15	2	1	-	-	-	-	-	1	
TOTAL			60	52	2	4	2	1	-	-	-	2	

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

Cologne: Dusseldorf: Minelaying.

SUMMARY.

Cologne : Dusseldorf.

4 P.F.F. Mosquitoes were despatched on a harassing raid against Cologne, and 3 more against Dusseldorf. 2 aircraft attacked each target on D.R. runs from GEE fixes; a fifth jettisoned its bombs 10 miles N.W. of Walcheren. Accurate flak was encountered, and 3 aircraft were damaged, but all returned safely.

Minelaying

30 aircraft, out of a force of 56, laid 103 mines in the Bay of Biscay. One aircraft was lost.

Meteorological Forecast

Midnight frontal positions: (1) occlusion from 56°N 07°E to 55°N 08°E to 48°N 08½°E, becoming (2) warm to N. Italy, then (3) occluded eastwards, with (4) a cold front from the top of the warm sector at 48°N 08½°E to Nantes to 47½°N 0°E.

Bases:- Variable amounts of cloud. Thundery showers persisting in base areas until midnight, but probably not so widespread as to interfere seriously with take-off. Later, cloud will dissipate, and fine weather will prevail in all areas except 6 and 4 Groups and N. Midlands, where showers may continue.

Germany:- Much cloud in the frontal zone, dissipating eastwards.

Ruhr:- 7-9/10ths at various levels up to 20,000 ft. Thunderstorms en route with high icing index in cloud.

France:- Thundery developments in frontal zone. Showers over W. coast, probably not severe; cloud base 2,500 ft., falling to 1,000-1,500 ft, in showers. Good visibility.

Prisians:- 10/10ths cloud, base 2,000 ft., 1,000 ft., in rain.

Sorties

	<u>Cologne</u>	<u>Dusseldorf</u>	<u>Minelaying</u>
(a) No. of aircraft despatched...	4	3	46
(b) " " " reaching primary area.....	2	2	30
(c) " " " reaching alternative area.....	0	1	0
(d) " " abortive sorties			
(weather.....)	9		
(tech.defect...)	5		
(sickness of crew)	2		
(mines planted wild.....)	1		
(e) " " aircraft missing.....	0	0	1
(f) " " mines laid.....			103

Weather Experienced

Bases:- Showers persisted in East Anglia and Midlands till midnight, then fair or fine apart from a few isolated showers. Moderate visibility.

/..... Ruhr

Ruhr:- Much convection cloud, tops 20-25,000 ft.

W. France:- 4-7/10ths cumulus and layer cloud, base 2,000 ft., locally 1,500 ft. 10/10ths., tops 8,000 ft., in a narrow belt about 46°N. Good visibility.

Quarter moon, setting one hour before the attack.

Enemy Defences

6. Intense heavy flak was accurately predicted all around aircraft in the Ruhr at 27-29,000 ft. Two aircraft on Cologne and one on Dusseldorf were hit. Minelayers encountered slight heavy and light flak from La Pallice and neighboring islands, and light flak from the mouth of the Gironde. Two were damaged near

20 sorties by controlled night fighters were overheard, 4 of which were active against hostile aircraft. No attempted interceptions were overheard but one was reported.

Casualties

7. One Lancaster of 1 Group did not return from the Gironde. An aircraft was seen shot down by light flak at Brest and, although it was not routed through the area, it is possible that the one in question may have strayed off its course.

3 slight cases of flak damage were sustained over the Ruhr, and two over Brest.

MLM/JT/FVD.
BC/S. 26342/4/ORS.
23rd September, 1943.

COLOGNE DUSSELDORF MINELAYING 6/7th JULY 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS
				PRIMARY AREA	ALT. AREA	OVER EN. TERRIT.	NOT OVER EN. TERRIT.		FLAK	FIGHTER	NOT E/A.	ATTACKED	NOT RETURNED	
COLOGNE	8 P.F.F.	MESQUITO IV	4	2	-	1	1	-	2c	-	-	-	-	
DUSSELDORF	8 P.F.F.	MESQUITO IV	3	2	1	-	-	-	1c	-	-	-	-	
BOMBING TOTAL			7	4	1	1	1	-	3c	-	-	-	-	
MINELAYING	1	LANCASTER I	2	1	-	-	-	1	-	-	-	-	-	36 mines.
		LANCASTER III	10	5	-	-	5	-	-	-	-	-	-	
	3	STIRLING I	1	1	-	-	-	-	-	-	-	-	-	9 mines
		STIRLING III	3	2	-	-	1	-	-	-	-	-	-	
LA PALICE	1	LANCASTER I	3	1	-	-	2	-	-	-	-	-	2	
		LANCASTER III	3	3	-	-	-	-	-	-	-	-	-	24 mines
LORIENT	4	WELL. X	8	7	-	-	1	-	-	-	-	-	-	14 mines
ST. NAZAIRE	4	WELL. X	8	6	-	-	2	-	-	-	-	-	-	12 mines
BREST	6	WELL. X.	8	4	-	-	4	-	1 c + 1	-	-	-	-	8 mines
MINELAYING TOTAL			46	30	-	-	15	1	1 c + 1	-	-	-	1	103 mines
TOTAL			53	34	1	1	16	1	4 c + 1	-	-	-	1	

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 7/8th JULY, 1943.DUISBURG: COLOGNE.SUMMARY

4 P.F.F. Mosquitoes carried out a harassing raid on Duisburg, and 3 out of a force of 4 on Cologne. All returned undamaged.

Metereological Forecast

Bases:- Fit all night. Rather slow clearance of cloud until 0100, thereafter less than 5/10ths in N., East Midlands and East Anglia, except in coastal districts. 5-8/10ths cloud all night in W. and S.W. Isolated tops to 20,000 ft. W. Midlands, icing index high to 15,000 ft. and moderate above.

Germany:- Persistent thunder-cloud in N.W., tops above 20,000ft. High icing index between 6,000 ft. and 15,000ft. Elsewhere, residual thunder cloud, occasional thunderstorms.

France:- Well broken convection cloud in W., with scattered showers. Residual thunder-cloud in centre and E.

<u>Series</u>	<u>Duisburg</u>	<u>Cologne</u>
(a) No. of aircraft despatched.....	4	4
(b) " " " reporting attack primary area.....	4	3
(c) " " abortive sorties (bombs hung up).....	0	1
(d) " " aircraft missing.....	0	0

Weather Experienced

Ruhr:- No cloud. Excellent visibility. No moon.

Enemy Defences

Intense heavy flak, accurately predicted, was encountered from both targets. Enemy night fighter reaction was on a very small scale, and none were seen.

Casualties

All our aircraft returned undamaged.

W. JT
S. 26342/4/ORS.
8. 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.		PLANE	FIGHTER	NOT E/A	ATT-ACKED	NOT ATT-ACKED	
BRISBURG	8 FFF	Mosq. IV	4	4	-	-	-	-	-	-	-	-	-	
COLOGNE	8 FFF	Mosq. IV	4	3	-	1	-	-	-	-	-	-	-	
TOTAL			8	7	-	1	-	-	-	-	-	-	-	

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 8/9th. JULY, 1943.

COLOGNE: DUISBURG: MINELAYING: LEAFLETS.

SUMMARY

COLOGNE

1. A force of 282 Lancasters and 6 OBOM Mosquitoes made a good attack on Cologne, where the sky-marking technique was used on account of cloud over the target. Reconnaissance photographs show that the attack brought the net area damaged to more than 1,000 acres (or over 3,000 gross acres). 7 Lancasters failed to return, mainly owing to the activity of night fighters, which are believed to have shot down 6 of the bombers.

Duisburg

2. 3 Mosquitoes made a harassing raid on Duisburg, returning undamaged.

Minelaying

3. 22 Wellingtons were despatched to N.W. France, 20 Stirlings to W. France and 4 Wellingtons to S. Texel. A total of 106 mines were laid in enemy waters by 41 of these aircraft. One Wellington failed to return.

Leaflets

4. 21 aircraft of a force of 27 despatched by Training Groups dispersed leaflets in northern France, all returning undamaged.

Meteorological Forecast

5. Warm front approaching from the west will be over Ireland by midnight, and will be W. of Ireland by 0400 hours, giving rain clouds to Cumberland-Lands End, with considerable broken medium cloud in N. England.

Home bases:- thunderstorms at take-off, but probably sufficient breaks in the cloud to enable aircraft to climb to operational heights. Layers of cloud from 3-10,000ft.; tops of cumulo-nimbus 15-20,000ft., with isolated tops 25,000 ft. Freezing level 6,000 ft. Gaps in cloud on return will be large, and in many areas there will be no cloud.

W. France:- local showers, broken convection cloud, base not below 15,000ft.

Germany:- thunderstorms over W. and central Germany, dying out during the night, but local thunderstorms persisting. Much cloud in extreme S., and variable amounts of thundery cloud in E.

Ruhr:- possibly 5-7/10ths. cumulo-nimbus, tops 15-20,000ft. Above 15,000ft. cloud may be less than 5/10ths.

...../wind.

Wind:	<u>500nb</u>	<u>300nb.</u>
Bases to 01°E.	340°/50m.p.h. (outward) 60 m.p.h. (return)	340°/80 m.p.h.
1°E. to 4°E.	310°/30-35m.p.h.	310°/45 m.p.h.
4°E to Ruhr.	280°/25m.p.h.	280°/30 m.p.h.

COLOGNEPlan of Attack

6. Zero hour 0110 hours. Period of Attack 0110-0129 hours.

4 OBOE Mosquitoes were to release green steady warning flares at 50°41'N 06°40'E. 24 miles S.W. of the release point. Between Z and Z + 15, the Mosquitoes were to drop release point flares (red with green stars and white), and also red T.I.'s as groundmarkers of the aiming point. If the groundmarkers were visible through cloud, 4 backers up were to aim green T.I.'s at red between Z+1 and Z + 17. The main force, consisting of Lancasters carrying mixed loads, were to aim red T.I.'s at the centre of all green T.I.'s, or the release point flares on a heading of 023°M. at 165 m.p.h. I.A.S. If no ground or skymarkers were visible on arrival, crews were to bomb on R.T.... As an aid to navigation on the way home, 8 Lancasters of the P.F.F. were to drop yellow T.I.'s at 50°40'N 07°15'E. All flares were to ignite at 17,000', red T.I.'s to cascade at 10,000' and green T.I.'s at 3,000', until Z + 15; after that time one green from each aircraft was to cascade at 10,000'.

Timing

7. <u>Mosquitoes^x</u>	<u>Backers-up</u>	<u>Main Force</u>
Zero	-	Sect.1 (Z) - (Z+4)
Zero + 5	4 at 1 min.intervals (Z+1)-(Z+4)	Sect.2 (Z+5)-(Z+9)
Zero + 10	4 at 1 min.intervals (Z+6)-(Z+9)	Sect.3 (Z+10)-(Z+14)
Zero + 15	4 at 1 min.intervals (Z+11)-(Z+14)	Sect.4 (Z+15)-(Z+19)
	2 at 1 min.intervals (Z+16)-(Z+17)	

^x plus 1 reserves.

Bomb Loads - Markers

8. 6 Mosquitoes - 2 T.I. red (1LB) + 1x3 flares green + 1x3 flares (2 red/green + 1 white)
 8 Lancasters - 4 T.I. green (1LB) + 1x4000 HC + 5x1000 HC.
 6 " - 3 T.I. green (1LB) + 1 T.I. yellow (1LB) + 1x4000 HC + 5x1000 HC.
 2 " - 2 T.I. yellow (1LB) + 1x4000 HC + 5x1000 RDX.

Route

9. 51°22'N. 03°20'E - 50°30'N. 06°30'E - Target - wide right turn - 50°40'N. 07°15'E - Dungeness.

Sorties

10. No. of aircraft despatched.....	288
" " " reporting attack on primary area.....	248 (86.2%)
" " " " " alternative area.....	5 (1.7%)
" " abortive sorties (technical and manipulative defect.....22)	
" " " (weather.....2)	28 (9.7%)
" " " (illness of crew.....3)	
" " " (reserve aircraft, not reqd... 1)	
" " aircraft missing.....	7 (2.4%)

...../Weather Experience

Weather Experienced

11. Home bases:- Showers persisting locally until about midnight, after which generally small amounts of cloud, with moderate visibility.

Route:- 4-6/10ths. convection cloud, tops 10,000ft., with isolated tops to 20,000ft. over North Sea. Occasional clear areas over the Continent. On the return cloud broke to small amounts over the English coast. Much static. Heavy or moderate rain in cloud tops. Dense but non-persistent contrails at various heights between 18 and 24,000ft., especially near cloud tops. Winds at 20,000ft., 310°/35 m.p.h.

Target:- 9-10/10ths. layer and convection cloud, main tops 8,000ft., with cumulo-nimbus tops to 17,000ft. Wind at 20,000ft. 300°/25-30 m.p.h. Surface wind, westerly/15-20 m.p.h. Half moon, setting at 0115 hours (approximately).

Night Photographic Evidence

12. No night photographic evidence is available owing to cloud over the target.

Narrative of Attack

13. Owing to the failure of the first OBOE Mosquito no markers were available until zero + 5 minutes. However, although crews had been given permission to bomb on E.T.A. if no markers were seen, many waited for the release point flares to be dropped. Most of those which did bomb on E.T.A. used a D.R. run from the last GEE fix. 2 main force aircraft aimed at red T.I.'s which disappeared rapidly into cloud, and the green T.I.'s released by one backer-up were not seen by any of the main force. Despite the failure of the first Mosquito, and the irregular timing of 3 OBOE aircraft which attacked, the raid appears to have been well concentrated. This is borne out by the severe damage shown on daylight reconnaissance photographs.

Daylight Reconnaissance

14. Reconnaissance photographs which were taken on 16th., 17th., and 25th. July, cover the whole of the city of Cologne, except for a small part of Ehrenfeld. Fresh damage seen on the west bank of the Rhine includes several factories, including an important cable works, a factory for shell fuses, 3 machinery firms, a chemical works, and an aluminium foundry besides a number of small firms engaged on such products as margarine, furniture and footwear. Additional damage has also been caused to residential property. Since no assessment of the damage on the east bank was made after the raid of 3/4th. July owing to smoke, it is not possible to separate fresh incidents from earlier damage.

15. The damage caused by all raids on Cologne up to and including that on 8/9th. July amounts to more than 1,000 net acres (or 3,300 gross acres) of property destroyed or damaged. Over 75% of all the fully built-up districts has been devastated and in the central city area alone 83% of the property has been destroyed. More than 76,000 housing units are uninhabitable, of which at least 3,000 were destroyed or damaged in the raid of 8/9th. July.

16. Damage on the east of the Rhine, where most of the important industries of Cologne were situated, was very severe. Most of this was probably the result of the groundmarking raid on 3/4th. July, but some may have been done on 16/17th. and 28/29th. June or 8/9th. July. 13 factories rated as priority 1+ were damaged. Chief of these was the Humboldt-Deutz Motoren A.G., the Kalk branch of which was more than 75% destroyed, while the Deutz branch sustained serious damage to its main workshops. 28 of the 35 workshops of Gottfried Hagen A.G. were destroyed and most of the others damaged. 6 workshops of Felton and Guillaume Carlswerk at Mulheim were also damaged. In addition 12 other large identified industrial concerns were damaged, and 20 small unidentified factories were also affected. In the whole of Cologne about 80 factories were damaged between 16th. June and 9th. July.

Alternative Targets

17. 4 aircraft attacked alternative targets in the areas of Aachen, Louvain, Malines and Liblar (50°49'N. 06°49'E), and another bombed an unspecified defended area on the Dutch Coast.

...../Special Equipment.

Special Equipment

18. OEOE 4 OBOE Mosquitoes and 2 reserves were despatched to find and reach the target. The first Mosquito failed owing to intermittent signals and although the second was on time, the third was 3 minutes early and the fourth 2 minutes late. The OBOE set of one of the reserves detonated and the other was not called.

19. H2S One of the 2 aircraft carrying H2S for navigational purposes used it to confirm his position at bombing, but the set of the second aircraft was unserviceable at the target.

20. GEE The Eastern Chain operated on the Wyoming frequency throughout the raid and on the Zanesville (target) frequency from 0040 to 0210 hours. The average range obtained on both outward and homeward routes was 255 miles. The poor ranges were, according to most reports, due more to the weakness of our own signals than to enemy jamming. On this raid the Wyoming frequency was jammed, though not heavily, and results on this wave-length were much better than on the Zanesville frequency. The type of jamming encountered over Northern France showed that the enemy increased his jamming in that region and was experimenting with a form of spurious pulse which confused the less experienced navigators.

Enemy Defences

21. Flak and Searchlights Guns at Walcheren, Bruges, Eupen and Aachen all went into action against outbound bombers, and those at Cambrai, Lille, Amiens and Dieppe against homebound aircraft, but flak was nowhere reported as more than moderate. As a result of the weather conditions prevailing, the flak over Cologne was mainly of barrage form, concentrated particularly round the release point flares. Searchlights were ineffective owing to cloud. 43 aircraft were damaged by flak. This is a large number for so small a force, but not unusual large for an operation where barrage fire was predominant.

22. Fighters Wireless traffic relating to 11 patrols was intercepted. These patrols made at least 19 pursuits, and claimed four victories. The principal areas of operation were Gilze and St. Trend (outbound) and Florennes (homebound). Returning crews reported 30 interceptions, including 10 attacks, 8 other combats and 12 approaches. Of these 5 were outbound, 9 were homebound and 16 were over the target. There is no evidence of the method by which the unusually large number interceptions over the target was achieved. 6 aircraft were damaged by fighter attack.

Casualties

23.	No. of aircraft missing.....	7 (2.4)
	" " " damaged	(a) flak.....42
		(b) fighter..... 5
		(c) flak and fighter.... 1)..... 51 (17.7)
		(d) incendiary bombs.... 3
		(e) photoflash
		explosion..... 1)

The scarcity of observations on this night makes it difficult to assess with any assurance the cause of bomber losses. It seems likely that 6 aircraft were destroyed in air-combats at Bruges (2), Antwerp, Louvain, Charleroi and St. Omer. One aircraft may have been destroyed over Aachen by flak.

Two Ju.88's were destroyed, both by Lancasters of 5 Group:

Mine laying

24. N.W. France 22 Wellingtons were despatched to lay mines off Lorient, St. Nazaire and Brest. A total of 36 mines was laid by 18 aircraft. The mines of 2 aircraft dropped "safe", and a third aircraft was unable to pinpoint. One Wellington is missing without trace. The only interception reported did not develop into a combat.

25. W. France 20 Stirlings were sent to La Pallice and the Gironde Estuary, where 62 mines were laid by 19 aircraft. The twentieth Stirling returned early owing to a technical defect. One minelayer was damaged by an enemy aircraft, and another drove off a fighter by opening fire.

26. S. Texel 4 Wellingtons laid 8 mines off S. Texel without incident.

Leaflets

27. 27 Wellingtons and Whitleys of Training Groups set out to scatter leaflets at many places in northern France. 21 aircraft reached the primary area, one an alternative area (Caen) and 5 sorties were abortive owing to technical defects (3), severe icing (1) and flak damage (1). In all 4 aircraft were damaged by flak en route; one Wellington was intercepted by an enemy fighter, but no attack was made.

BNJ/JT.
BC/S. 26342/2/ORS.
24th. September, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ADVERSIVE SORTIES		MISSING	DAMAGE			DISPERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER E/A	NOT ACKED	NOT ATT-CKED	Tons of Bombs H.E.	Ino.	
COLOGNE	8 PFF.	Mosq.IX	2	1	-	1	-	-	-	-	-	-	-	P. 669.3	397.0
		Mosq.IV	4	2	-	2*	-	-	-	-	-	-	-	M. 12.1	7.3
		Lanc.I	4	4	-	-	-	-	1	-	-	1	-	M. 18.7	11.6
		Lanc.III	10	8	-	-	2	-	2	-	-	1	1	Heavy Bombs	
	8 MAIN FORCE	Lanc.I	1	-	-	1	-	-	-	-	-	-	-	8000lb. 4000lb.	
		Lanc.III	12	11	-	-	-	1	-	1AC	-	-	-	P. 1	2.3
		Lanc.I	21	18	-	-	2	1	1B+1	-	-	-	1	M. 1	6
		Lanc.III	83	72	1	2	7	1	2C+5	-	-	-	4		
		Lanc.I	41	31	3	-	6	1	7	1B+ 1AC	-	3	3		
		Lanc.III	110	101	1	-	5	3	23	1AC+ 2*	1B+ 2AC+1	5	11		
COLOGNE TOTAL			288	268	5	6	22	7	1B+ 2AC +39	1B+ 3C 2*	1B+ 2AC +1	10	20		
DUISBURG	8 PFF.	Mosq.IV	3	3	-	-	-	-	-	-	-	-	-	P. 2.3 tons. H.E.	
BOMBING TOTAL			291	251	5	6	22	7	1B+ 2AC +39	1B+ 3C +2*	1B+ 2AC +1	10	20		
MINELAYING															
ST. H.E. IRE	1	Well.X	8	8	-	-	-	-	-	-	-	-	-	16 mines	
LORIENT	1	Well.X	8	6	-	-	1	1	-	-	-	-	1	12 mines	
CLARENCE R.	3	Stir.I	2	1	-	-	1	-	-	-	-	-	-	36 mines	
		Stir.III	10	10	-	-	-	-	-	1	-	1	-		
LA FALICHE	3	Stir.I	2	2	-	-	-	-	-	-	-	-	-	26 mines	
		Stir.III	6	6	-	-	-	-	-	-	-	-	-		
S. TRAIL	4	Well.X	4	4	-	-	-	-	-	-	-	-	-	8 mines	
BRIST	6	Well.X	6	4	-	-	2	-	-	-	-	-	-	8 mines	
MINELAYING TOTAL			46	41	-	-	4	1	-	1	-	1	2	106 mines	

* Reserve a/c not required (see a/c only) # One of these also hit by flak.

...../Contd:

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ADVERSIVE SORTIES		MISSING	DAMAGE			DISPERCEPTIONS		RESULTS
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER E/A	NOT ACKED	NOT ATT-CKED		
LEULST	91	Well.Ic	1	1	-	-	-	-	1	-	-	-	-	
DREUX	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	
ALENCON	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	
ALFERS	91	Well.Ic	1	1	-	-	-	-	1	-	-	-	-	
ALBERTAN	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	
CHATEAUBRIANT	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	
LAVAL	91	Well.Ic	1	1	-	-	-	-	-	-	-	-	-	
	93	Well.X	2	1	-	-	1	-	-	-	-	-	-	
OSLENS	93	Well.III	2	1	-	-	1	-	-	-	-	-	-	
		Well.X	2	2	-	-	-	-	-	-	-	-	-	
PARIS	93	Well.Ic	10	7	1	-	2	-	1AC +2	-	-	-	1	
CLUN	93	Whit.V	1	3	-	-	1	-	-	-	-	-	-	
LEULST TOTAL			27	21	1	-	5	-	1AC +6	-	-	-	1	
BOMBING & MINELAYING TOTAL			337	292	5	6	26	8	1B+ 2AC +39	1B+3C +3*	1C+ 2C +1	11	22	
TOTAL			364	313	6	6	31	8	1B+ 3C +43	1B+3C +3*	1C+ 2C +1	11	23	

one of these also hit by flak.

RAID TRACK AND BOMB PLOT NOT AVAILABLE

www.bombercommandmuseum.com

LONGER COMMAND REPORT ON NIGHT OPERATIONS - 9/10th JULY, 1943.GELSENKIRCHEN: Minelaying:SUMMARYGELSENKIRCHEN

1. A force of 408 Halifaxes and Lancasters, with 14 OBOS Mosquitoes (4 under training) set out to make a skymarking attack on Gelsenkirchen. Only 5 markers attacked successfully, and one of these was too late to assist the main force. The attack was therefore somewhat scattered, and the resultant damage not great. Observations of falling aircraft were few owing to heavy cloud, and the cause of loss of most of the 10 missing aircraft is therefore unknown.

Minelaying

2. 18 aircraft of 3 and 6 Groups laid a total of 80 mines off the Frisian Islands and south of Texel Island. All the aircraft returned undamaged.

Meteorological Forecast

3. Estimated midnight position of front: occluded S. Norway - near Ruhr
Stuttgart - 50°N. 15°E.

Home bases: fit for take-off. For return between 0400 and 0600 hours
4, 5 and 3 Groups and half the bases in 1 and 6 Groups expect visibility less than 1,500 yards by 0400 hours, or to have low stratus; visibility mainly at 2,000 yards up to 0400 hours in 8 Group. Diversions: Hatwell, Hampstead Row, Moreton-in-the-Marsh, Eastone, Caydon, Honeybourne, Upper Heyford, Chipping Wing, Edgehill, Tilstock, Sleaf, Sleighford and High Erroll.

English Channel: fog.

France: strato-cumulus with patches of fog in N.W. Small amounts of cloud elsewhere.

Germany: W. and N.W., broken layers of cloud, probably all below 15,000 feet.

Target: probably more than 5/10ths. strato-cumulus, base 2,000 feet, tops 6,000 feet, and small amounts of medium cloud. Visibility poor, with thick haze. No cloud above 14,000 feet.

Route: much strato-cumulus up to 16,000 feet.

Wind:	Base.	Target.
750 mb.	280°/10 n.p.h.	310°/25 n.p.h.
500 mb.	280°/10-15 n.p.h.	310°/30-35 n.p.h.
350 mb.	270°/20-25 n.p.h.	310°/50 n.p.h.

GELSENKIRCHENPlan of Attack

4. Route. East coast - 53°05'N. 04°05'E. - N. end of Texel Island - 53°11'07°05'E - TARGET - 50°40'N. 07°25'E - 50°05'N. 06°35'E - 50°00'N. 01°15'E - East coast.

.../5. Method

5. Method En route to the target, 7 OBOE Mosquitoes were to drop tracking flares: red steady at position 'A', 51°53'N. 07°05'E., 23½ miles N. of the release point; green steady at position 'B', 51°44'N. 07°05'E., 13 miles N. of the release point. At the target, between zero and Z + 30, the Mosquitoes were to drop release point flares (red with green stars and white flares). All flares were to ignite at 17,000 feet. If no sky markers were seen on arrival, aircraft were to bomb on E.T.A. 4 aircraft of 8 Group were to take part in a training attack from (Z + 45) - (Z + 60). The importance of flying straight and level over enemy territory, and particularly during the bombing run, was to be stressed to all crews. No cameras were to be carried.

6. Timing. Zero Hour - 0140 hours. Period of Main Attack - 0110-0144 hrs

<u>Mosquitoes*</u>		<u>Main Force</u>
Zero	Zero - (Z + 4)	Sect. 1 - Lancasters
(Z + 5)	(Z + 5) - (Z + 9)	" 2 - "
(Z + 10)	(Z + 10) - (Z + 14)	" 3 - Halifaxes
(Z + 15)	(Z + 15) - (Z + 19)	" 4 - "
(Z + 20)	(Z + 20) - (Z + 24)	" 5 - "
(Z + 25)	(Z + 25) - (Z + 29)	" 6 - Lancasters
(Z + 30)	(Z + 30) - (Z + 34)	" 7 - "

* plus two reserves as required.

7. Bomb Loads

10 Mosquitoes - 1(3 flares red) + 1(3 flares green) + 2(2 flares red/green stars).

4 Mosquitoes - 3 x 5000lb. H.C. + 1 T.I. white.

All main force aircraft to carry mixed loads.

Sorties

8. No. of aircraft despatched.....	422
" " " reporting attack on primary area.....	376 (89.0%)
" " " " " alternative area.....	2 (0.5%)
" " abortive sorties (technical and manipulative defects.....	30
(reserve aircraft, not called. 2).....	34 (8.1%)
(sickness of crew.....	2
" " aircraft missing.....	10 (2.4%)

Weather Experienced

9. Home bases: broken low and medium cloud for take-off, with good visibility; fine later.

Route: broken low and medium cloud increased to 10/10ths., tops 15,000 ft. over western North Sea. Cloud thickened to about 20,000 feet in frontal zone about 04°00'E. Slight rain and St. Elmo's fire reported. Contrails at 18-20,000 feet.

Target: 10/10ths. cloud, tops 15-18,000 feet, with a broken layer about 20,000 feet. Surface wind, W.S.W., 10-15 n.p.h. Half moon, setting at about 0130 hours.

Night Photographic Statistics.

10. None, since the aircraft did not carry cameras.

Narrative of Attack

11. The first release point flares were dropped at zero + 2, after which the intervals in the marking were, 10, 13, 5 and 12 minutes. There were thus 2 gaps of 3 and 6 minutes (the last Mosquito attacked after the end of the raid). Unfortunately a sixth Mosquito dropped release point flares 10 miles north of the

....target, owing to a

target, owing to a technical error, during the longer gap, thus diverting some of the main force from the target. The majority of the aircraft appear to have bombed on the correctly placed markers, or on E.T.A., but the attack was nevertheless scattered.

Daylight Reconnaissance

12. Reconnaissance photographs showed the damage caused by this raid and by the attack of 25/26th. June. Apart from severe damage to the Schalker Verein Works of the Vereinigte Stahlwerke A.G. (priority 1) and to a large building of the Deutsche Libbey Owen Gesellschaft, in the Lotthausen district, which specialises in machine-made glassware, only scattered incidents were seen. In all, 13 business or residential buildings were destroyed or damaged.

Alternative Targets

13. 2 aircraft attack alternative target in the areas of Lurgsteinfurt and Terschelling.

Special Equipment

14. OBOE 7 OBOE Mosquitoes and 3 reserves were despatched to mark the target. 5, including one reserve, completed the task, but owing to the failures, timing was poor. One reserve was not called, and the third, when called, was in an unsuitable position. Of the 3 failures, one due to unsatisfactory equipment, and 2 to other technical defects. 4 OBOE Mosquitoes, with freshman crews, were sent to bomb after the main attack. 2 bombed on OBOE, one on E.T.A., and the fourth returned early owing to OBOE failure.

15. H2S H2S was carried by 3 aircraft as a navigational aid. In all cases it was unserviceable before the target was reached.

16. GEE The Eastern Chain operated on the Zanesville frequency from 0040 to 0145 hours and on the Wyoming frequency throughout the raid. The average range on the outward route was 250 miles and on the homeward route, 260 miles. Better results were obtained on the Wyoming than on the Zanesville frequency, but the enemy were obviously aware of the change from the Virginia to the Wyoming frequency. However the jamming on the newer frequency was not strong, the range being limited by the weakness of the B signal.

Enemy Defences

17. Flak and Searchlights There appears to have been little flak activity against the outbound bombers; reports mention only the defences of Texel and Hengelo. Flak over the Ruhr was intense to moderate, and, owing to cloud, mainly barrage. Similar conditions prevailed in the target area. Searchlights seldom exposed, and were ineffective when they did, owing to cloud. Homebound bombers reported activity at a number of points, notably Amiens, Poix and Abbeville, at all of which places there was accurate heavy flak. 101 aircraft were damaged by flak. This was nearly 24% of the total force, a very high percentage which was probably due partly to the intense barrage fire and partly to the length of route for which the raiders were exposed to the Ruhr defences.

18. Fighters Only 6 patrols were heard operating on this night, intercepted wireless traffic indicating that they made 6 pursuits in the areas of Leeuwarden, Twente, Florennes (2), and 2 unlocated. There was only one direct claim of success, although 3 other references to the destruction of bombers were overheard. Crews reported 8 attacks, 9 other combats, 11 approaches and 5 followings, a total of 33 interceptions. Of these, 6 were reported by outbound bombers, 8 occurred in the target area, and 19 on the homeward route. It appears that fighter activity was on a reduced scale. Weather conditions probably prevented the usual number of fighters from taking off, and may also have hampered them from contacting our bombers. One aircraft was damaged by fighter attack.

...../Casualties.

Casualties

19. No. of aircraft missing..... 10 (24.4%)
 " " " damaged { (a) flak..... 99 }
 { (b) flak & fighter. 1 }..... 103 (24.4%)
 { (c) incendiary
 bombs & flak.. 1 }
 { (d) incendiary bombs 1 }
 { (e) other causes... 1 }

The heavy cloud prevalent during the night probably accounted for the scarcity of observations of aircraft shot down. With the limited data available it is extremely difficult to deduce the position or cause of most of our losses. Flak was probably responsible for the loss of bombers at Gelsenkirchen (1) and Amiens (2). One bomber was seen shot down by a fighter south of Charleroi and 2 others were destroyed north of Amiens and at the mouth of the Somme, though the cause of loss is unknown. One aircraft crashed on return owing to engine failure. Crews report 2 enemy aircraft destroyed, both victories being witnessed by other aircraft; 3 enemy aircraft were damaged.

Minelaying

20. 12 Stirlings laid a total of 63 mines off the Frisian Islands and 6 Wellingtons laid 12 mines south of Texel Island. All returned without incident.

EO/JT.
 FC/S. 26342/1/ORS3.
29th. September, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ALTERNATIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS		
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER D ENY TERR.		PLAIN	FIGHTER	NOT E/A	ATT-ACKED	NOT ATT-ACKED	Tons of Bombs	K. E.	Ino.
GELSEKIRCHEN	B	Mosq. IX	4	2	-	1+1*	-	-	-	-	-	-	-	D. 711.4	598.3	
	FFF	Mosq. IV	6	3	-	1+1*	1	-	-	-	-	-	-	.. 3.6	3.5	
	B	Mosq. IV	4	3	-	1	-	-	-	-	-	-	-	H. 16.3	17.1	
	MAIN FORCE	Hal. IIAV	2	2	-	-	-	-	-	-	-	-	-	Heavy Bombs		
		Hal. IA	10	10	-	-	-	-	1.0	-	-	-	-	DOOOIE. DOOOIE.		
		Lanc. I	1	1	-	-	-	-	+3	-	-	-	-	P.	1	183
		Lanc. III	8	7	-	-	1	-	2	-	-	-	-	A.	-	1
	1	Lanc. I	17	13	-	-	4	-	-	-	-	-	-	M.	-	4
		Lanc. III	65	60	-	-	4	1	100	-	-	-	-			
									+12							
	3	Lanc. II	15	14	-	-	1	-	2	-	-	1	2			
	4	Hal. IIAV	109	98	-	-	9	2	1E	1E*	1E	2	6			
		Hal. IA	27	23	1	-	2	1	15-10	-	-	1	2			
									+3							
	5	Lanc. I	24	20	1	-	1	2	7	-	-	1	1			
		Lanc. III	80	83	-	-	4	1	1B+	-	1	2	4			
								2.0								
								+21								
6	Hal. IIAV	33	29	-	-	2	2	1.0*	-	1.0*	1	3				
	Hal. IA	9	8	-	-	-	1	2	-	-	-	1				
								2B+		1B+						
								+60		1.0C*						
								+90		+1						
GELSEKIRCHEN TOTAL	TOTAL		422	376	2	5	29	10	2B+	1B+	8	25				
									+60	1.0C*						
									+90	+1						
MINDELAYNE	3	Str. I	2	2	-	-	-	-	-	-	-	-		11 mines		
FRILERS		Str. III	10	10	-	-	-	-	-	-	-	-		27 mines		
S. TROUL	6	Wdl. I	6	6	-	-	-	-	-	-	-	-		12 mines		
MINDELAYNE TOTAL			18	18	-	-	-	-	-	-	-	-		80 mines		
TOTAL			440	394	2	5	29	10	2B+	1B+	8	25				
									+60	1.0C*						
									+90	+1						

* Reserve aircraft, not required.

* also hit by flak.

RAID TRACK AND BOMB PLOT NOT AVAILABLE

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 12/13th. JULY, 1943.TURIN: Minelaying: Leaflets:SUMMARYTURIN

1. 295 Lancasters of 8, 1 and 5 Groups were sent to Turin, where 264 aircraft attacked the city. Accurate skymarking by the P.F.P. resulted in an excellent concentration slightly north of the aiming-point, and although the bombing later drifted into open country, useful damage was caused to industrial targets. 13 aircraft were lost.

Minelaying

2. 19 Wellingtons, out of a force of 22, laid 36 mines in the Bay of Bissey without loss or damage.

Leaflets

3. 17 Wellingtons and Whitleys, out of a force of 19, dispersed leaflets over various towns in northern France. All returned safely.

Weather Forecast

4. Midnight frontal positions:- Cold from Shetland to S.E. Norway to 55° N. 03° E. to 50° N. 05° E. to 47° N. 05° W., then westwards.

Bases:- Cloud breaking. Moderate visibility.

Germany:- Cold front very active, with solid cloud to great heights. E. and S. of the front: much layer cloud with a few breaks, dispersing to small amounts in extreme S.

N. Italy:- Generally, little cloud. Turin: 5/10ths. or less, mainly at medium levels. Moderate visibility. Route: cold front overtaken about 47½° N. cloud in layers with good clear lanes. Risk of thunderstorms over S. France.

TURINPlan of Attack

5. Route:- Dungeness - Cayeux - Lake Annecy - TURIN - turn right - 4700W. 0600W - 4830N. 0630W.

6. Method:- Zero hour: 0145 hours. Period of attack: 0145-0201 hours

Route marker flares, (green steady) were to be dropped by 11 specially equipped blind markers over the centre of Lake Annecy (4550 N. 0610 E): These were to be backed up by 19 of the "backers-up", but only if they could identify the lake visually. The blind markers were to mark the target area with yellow T.I.s each also releasing one stick of flares (white) at 6-second intervals on the same heading. Visual markers were then to mark the aiming-point with red T.I., using the yellow T.I. as a guide only. They were not to drop red T.I. unless absolutely certain of the aiming-point. Backers-up were to aim their green T.I. (with a 2-second overshoot) at the centre of all visible red T.I., or at the centre of all greens if no reds were in evidence. If neither red nor green T.I. were

...../visible, backers-up

visible, backers-up were to aim their green T.I. at the centre of all yellows. Main Force aircraft, led by the best crews, were to aim at reds if visible, otherwise at greens; they were to ignore yellows. If the target was clouded over, Y-aircraft were to mark the target with sky-markers (red with green stars). Main Force aircraft would then bomb these on a heading of 132°M. and I.L.S. 165 n.p.h. On the return journey, yellow route-markers were to be dropped at 4544N. 0305E., by Y-aircraft. These were to be supported by 5 of the backers-up.

7. Timing:- Pathfinder Force:-
 Blind-marker illuminators - 11 Lancasters at zero-3.
 Visual markers - 6 Lancasters to arrive at zero-2, and
 both as soon as certain of the aiming-point.
 Backers-up - 13 Lancasters at 1-minute intervals from zero+2
 to zero+14.

Main Force: zero to zero + 16 (best crews first):

8. P.F.F. Bombs Loads:- Blind-markers:
 7 Lancasters Y - 1 x 4 green flares + 1 yellow T.I. LB.,
 + 5 x 4 white flares + 1 flare red with green
 stars + 1 x 4,000 H.C.
 4 Lancasters Y - 1 x 4 green flare + 2 yellow T.I. LB. + 5
 x 4 white flares + 1 flare red with green
 stars + 1 x 4,000 H.C.

Visual markers:

- 2 Lancasters Y - 2 red T.I. LB., + 2 red T.I. + 1 flare red
 with green stars + 1 x 4,000 H.C.
 2 Lancasters Y - ditto + 1 T.I. yellow L.B.
 2 Lancasters Y - ditto, with no yellow T.I. or flare, but
 + 1 x 500 G.P. (L.D.)

Backers-up

- 8 Lancasters - 1 x 4 green flare + 4 green T.I. (1 LB)
 + 4,000 H.C. + 1 x 500 G.P. (L.D.)
 5 Lancasters - 4 green T.I. (2 LB) + 2 T.I. green + 1 yellow
 T.I. (LB) + 1 x 4,000 H.C.

Sorties

9. (a) No. of aircraft despatched..... 295
 (b) " " reporting attack on primary area..... 264 (89.5%)
 (c) " " " " on alternative area..... 7 (2.3%)
 (d) " " abortive sorties (technical defect..... 10)..... 11 (3.7%)
 (hit by flak..... 1)
 (e) " " aircraft missing..... 13 (4.4%)

Weather Experienced

10. Bases:- Variable amounts of cloud in N., with scattered showers. Little cloud in S.

Route:- 4-6/10ths. cloud (tops 8,000') over Channel, increasing to 10/10ths. (tops 16-18,000', occasionally to 23,000') over Central and S. France, but dispersing again over N. Italy. Moderate to heavy clear icing in cloud at 18-20,000'. Static and thunderstorms reported. On return, cloud broke over N. end of Bay of Biscay to 4-6/10ths., base 2,000'. Wind at 16-19,000': 230-250°/40-45 n.p.h. over S. England, increasing over Central France to 260-270°/50-60 n.p.h.

Turin:- No cloud. Moderate visibility. Moon two thirds of full.
 Wind at 17-19,000': 240°/30 n.p.h.

...../Night Photograph
 Statistics.

Night Photographic Statistics

11.	No. of photographs examined.....	221
	" " " showing ground detail	(plotted within 3 mls...97)
		" " outside 3 mls...31).....141
		(unplotted.....13)
	" " " " fire-tracks.	(plotted within 3 mls...57)
		" " outside 3 mls...1)..... 80
		(unplotted.....22)
	No. of aircraft reporting attack.....	264
	" " " estimated, from photographic evidence, to have	
	bombed within 3 miles of the aiming-point.....	187

Narrative of Attack

12. The attack was opened 3 minutes late by the blind-marker illuminators, whose flares and T.I. were very accurately placed. 4 of these aircraft were plotted over the built-up area of Turin, and only one is believed to have been off the target (4 miles E.). Between zero + 4 and zero + 6, 5 salvos of red T.I. were dropped in quick succession by the visual markers, all within 1 1/2 miles of the aiming point. The first fell 1/2 mile S.E., but all the others dropped N. of the aiming-point, and it was around these that the attack became centred. The sixth and last salvo of red was released at zero + 9. The backing-up was also reasonably accurate, despite the usual tendency to undershoot. Practically all the 131 aircraft which attacked between zero and zero + 15 aimed at reds.

13. By zero + 15, the primary marking had finished and, except for a few aircraft which bombed the ends of the last T.I., the attack soon became scattered in open country N. of the target. Only 20 of the 126 aircraft attacking between zero + 16 and zero + 40 are estimated to have bombed within 3 miles of the aiming-point. The evidence suggests that the enemy used dummy T.I. to good effect during this period.

Day Reconnaissance

14. Reconnaissance photographs, although partly obscured by smoke and not covering the new Fiat factory and areas in the N. and S. of the town, revealed heavy industrial damage. The weight of the attack fell on the N. and N.E., especially in the immediate vicinity of both banks of the river Dora. Numerous factories were affected, including both the Fiat steel works on the N. and S. sides of the river, the state arsenal, Soc. Conduuttori Elettrici d'Affini (electric cables), Filatura di Torino (cotton-spinning) and Cantiere Ettore (timber). A tram depot, a gasworks, a military stores dump and several unidentified factories were also severely damaged. Residential property escaped lightly.

Alternative Targets

15. 7 aircraft bombed alternative targets, in the areas of Dieppe, Montchanin, Dunkirk, Lac Bourget, Les Sables, Ile d'Oléron and Mont Noir.

Special Equipment

16. H2S: - 11 Y-aircraft were despatched as blind-markers, and 10 attacked, but one of these released no markers for technical reasons. Of the remaining 9 aircraft, only 4 used H2S to bomb, and 3 of these obtained visual checks. The other 6 bombed visually, although in only one instance was the H2S set unserviceable. The standard of accuracy was high. 4 other aircraft carried H2S as a navigational aid. All were detrired as visual markers, and did not use their sets for bombing, although all were reported to be working in the target area.

17. GEE The Southern Chain operated on the Carolina frequency throughout the operation. Average ranges of 230 and 310 miles were obtained on the outward and homeward routes respectively, the 3 greatest ranges - 575 miles, 500 miles and 485 miles - all being recorded on the homeward route. Jamming on the way out was particularly heavy near Paris, and spurious pulses were again reported S. of the Brest peninsula on the return. S. France was relatively free from jamming, and

...../in many cases fixes

in many cases fixes were only limited by lack of chart cover.

Defences

18. Flak and Searchlights: Flak opposition was never intense. Some activity was reported from Poix, Amiens and Le Crocq on the outward journey, and defence at several points on the Atlantic Coast went into action against our returning bombers. Over Turin itself, heavy and light flak were both put up in moderate strength, but with little accuracy, and there appeared to be little co-operation with the 50 searchlights that were exposed. The defences dwindled as the attack progressed. 11 aircraft were hit by flak, none seriously.

19. Fighters: Intercepted wireless traffic referred to only 2 patrols in the areas of our operations. No pursuits were overheard. Our crews reported a total of 9 interceptions, including 2 attacks and 5 other combats. One Ju.88 was shot down by a Lancaster, and another fighter was damaged. None of our returning aircraft was damaged by fighter.

Casualties

20.	No. of aircraft missing.....	13 (4.)
	" " " damaged (a) flak.....	11
	(b) fighter.....	0
	(c) incendiary bombs.....	3
	(d) other causes.....	3
		17

There is little evidence of the cause or location of any of our losses. 2 bombers were probably destroyed by fighters off the Brest peninsula, and a third by flak in the target area. 2 others may also have been lost over Turin and 2 more at Cayeux and Mont St. Michel, while foreign broadcasts reported 2 British aircraft to have crashed in Switzerland. Icing, which was severe on parts of the route, may have been responsible for some of the 10 unspecified losses.

21. One Lancaster crashed over England, with the loss of all its crew.

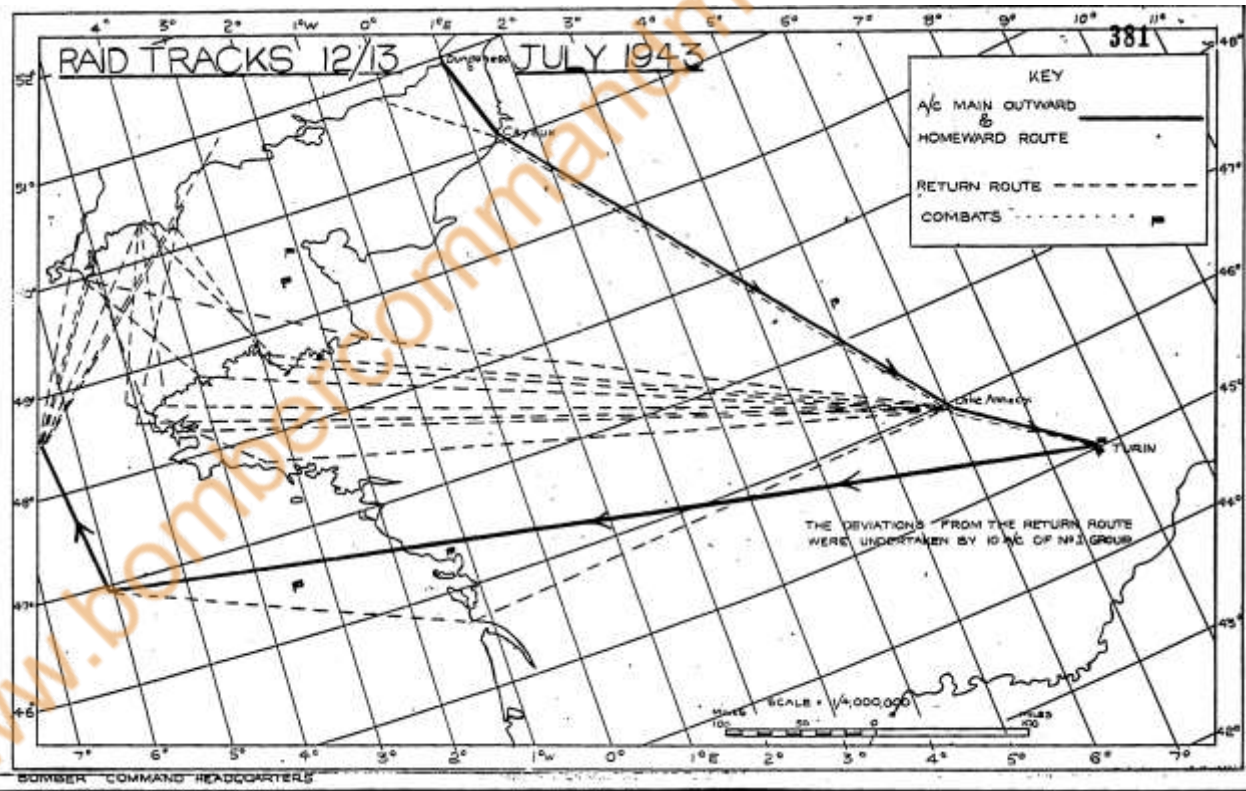
MINELAYING

22. 22 Wellingtons were despatched by 4 and 6 Groups to lay mines off St. Nazaire, Brest and Lorient. 19 reached their targets, laying 36 mines. Visibility was generally good, with 4-6/10ths. cloud (base 2-3,000', tops 5-6,000'), decreasing southwards, but one aircraft was unable to identify its target at Brest, and had to return early. 2 other sorties were abortive for technical reasons. Flak was encountered from the usual points, but no aircraft was hit, and the only combat with an enemy fighter caused no damage. All our aircraft returned safely.

LEAFLETS

23. 17 Whitleys and Wellingtons, out of a force of 19 despatched by 93 Group disseminated leaflets over various towns in N. France. 2 aircraft failed because of navigational errors. 2 interceptions were attempted, but in each case our aircraft took successful evasive action. No casualties were sustained.

TARGET	GROUP	TYPE	SORTIES	ATTACK ON				MISSILES	RESULTS			BOMBS			
				PRIN. AREA	ALT. AREA	OVER BENE. TERN.	NOT OVER BENE. TERN.		PL. FIGHTER	NOT R/A	NOT DOWN	Tons of Bombs	H. E.	Inc.	
TURIN	8	Lans-I	4	4	-	-	-	-	-	-	-	-	-	470.3	280.8
	8	Lans-III	26	25	-	-	1	-	2	-	1.0	-	1	12.1	5.8
	MAIN FORCE	Lans-I	6	6	-	-	-	-	-	-	-	-	-	23.2	15.7
		Lans-III	21	17	2	1	-	1	-	-	-	-	-	Heavy Bombs	
	1	Lans-I	19	16	1	-	1	1	1.0	-	-	-	-	8	203
	Lans-III	89	80	2	3	1	3	+1	-	-	-	-	-	7	12
	5	Lans-I	32	30	-	-	2	2	5	-	18+	2	5	-	-
		Lans-III	98	86	2	1	3	6	5	-	1.0-3	-	-	-	-
TURIN TOTAL			295	264	7	5	6	13	1.0	-	18+	3	6	-	-
									+10	-	2.0	-	-	-	-
											+3	-	-	-	-
MINEL. YARD														13	nines
ST. WAZLIFE	4	Well-X	8	7	-	-	1	-	-	-	-	1	-	13	nines
LORETT	4	Well-X	8	7	-	-	1	-	-	-	-	-	-	10	nines
ROEST	6	Well-X	6	5	-	-	1	-	-	-	-	-	-	-	-
MINEL. YARD TOTAL			22	19	-	-	3	-	-	-	-	1	-	36	nines
LAFLETS															
L.VIL	93	Well-III	2	2	-	-	-	-	-	-	-	-	-	-	-
ALBROOK	93	Well-III	1	1	-	-	-	-	-	-	-	-	-	-	-
		Well-X	1	1	-	-	-	-	-	-	-	-	-	-	-
CALDER I	93	Well-III	2	1	-	-	1	-	-	-	-	-	-	-	-
WARPS	93	Well-III	1	1	-	-	-	-	-	-	-	-	-	-	-
		Well-X	1	1	-	-	-	-	-	-	-	-	-	-	-
ROSEWEL	93	Well-X	2	1	-	-	1	-	-	-	-	-	-	-	-
ST. CLEMENT	93	Well-X	2	2	-	-	-	-	-	-	-	-	-	-	-
RELUVAIS	93	Well-Ic	2	2	-	-	-	-	-	-	-	-	-	2	-
ANDVILLE	93	Whit.V	2	2	-	-	-	-	-	-	-	-	-	-	-
JUNIERS	93	Whit.V	3	3	-	-	-	-	-	-	-	-	-	-	-
LA FLIST TOTAL			19	17	-	-	2	-	-	-	-	-	2	-	-
TOTAL			336	300	7	5	11	13	1.0	-	18+	4	8	-	-
									+10	-	2.0	-	-	-	-

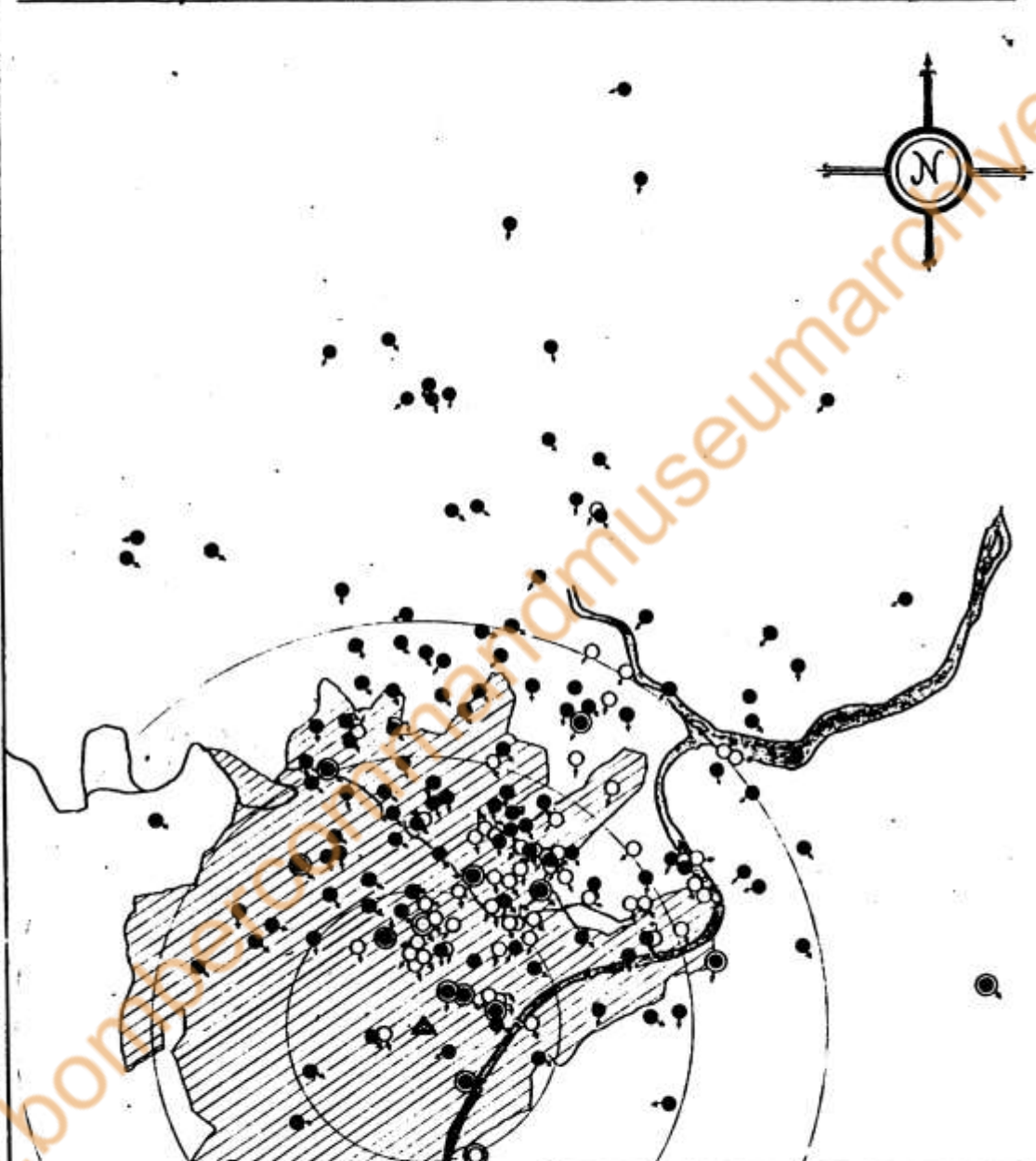


SECRET

380

ORS. BC. 345A
Date 27.09.53 Tracer E.S.B.
Ref N/R 375 Chkd A.C.S.

FINAL PLOT OF NIGHT PHOTOGRAPHS TAKEN 12/13th JULY 1943 TARGET TURIN.



Photographs Taken with Bombing

	P.F.E. Marker A/C	Maq Force A/C
Plotted by Ground Detail	●	●
Plotted by fires.	⊙	⊙
PLOTTED	By Ground Detail	By fires
Within 3 miles	97	57
Outside 3 miles	31	1
UNPLOTTED	13	22
No of prints (with bombings) examined	221	

Scale 1 inch = 1 mile.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 13/14th. JULY, 1943.

AACHEN: Cologne: Leaflets.

SUMMARYAACHEN

1. Over half the town of Aachen was devastated in a concentrated attack by 333 aircraft (out of a total force of 374). The target was covered with 7-10/10ths. low cloud, but the OBOK markers dropped their T.I. so accurately that nearly all of the Main Force aircraft bombed within the comparatively small built-up area. Very heavy damage was caused to the numerous small factories, mostly engaged in engineering and textile manufacture, which constitute the industrial importance of Aachen. We lost 20 aircraft, mostly to night fighters, 5 of which were shot down.

Cologne

2. 2 Mosquitoes were detailed to make a diversionary attack on Cologne shortly before the main attack on Aachen was due to commence; but both had to return early because of the failure of their special equipment.

Leaflets

3. 7 Wellingtons, out of a force of 8, dispersed leaflets uneventfully over towns in Northern France. The eighth came down in the Channel after being seriously damaged by flak, but all the crew were picked up by Air/Sea Rescue.

Weather Forecast

4. Midnight frontal positions:- Cold from 55°N. 22°E. to 50°N. 18°E. to Alps.

Bases:- Fit all night, with small amounts of cumulus and strato-cumulus, base 2-3,000', and moderate to good visibility.

Germany:- Residual thundery cloud in N.W., with some clearances, dispersing southwards to well broken cloud. Persistent thunderstorms in frontal zone, especially over Alps. Aachen: 2-5/10ths. strato-cumulus, base 2,500-3,000', tops 6-7,000'; risk of 7-9/10ths. at times 4-8/10ths. over Dutch coast, decreasing to small amounts over inland route. Little cloud on return. Berlin: similar conditions outwards, but cloud amount increasing towards target to 5-9/10ths. low and medium cloud; less than 4/10ths. over target. Cumulus tops in the Bight to 15,000' or more on homeward route.

France:- Fine with little cloud and moderate to good visibility. Scattered showers in N.W.

Winds:	<u>Bases to Dutch coast.</u>	<u>To Ruhr.</u>	<u>Ruhr to Calais.</u>	<u>To Bases.</u>
750mb.	300°/40 n.p.h.	270°/40 mph.	270°/40 mph.	300°/30-35 mph.
500mb.	300°/45-50 mph.	270°/50 mph.	280°/60 mph.	300°/60 mph.
300 mb.	310°/110 mph.	270°/75 mph.	280°/80-90 mph.	320°/90-100 mph.

...../AACHEN.

LACHEN

Plan of Attack

5. Route: Noordwijk - 5100N. 0616 E. - LACHEN - 5020N. 0524E. - Cayeux - Beachy Head.

6. Tactics: As a preliminary warning, yellow ground-marker T.I. were to be dropped by 10 Y-type Halifaxes at position 'A' (5100N. 0516E). 6 OBOE Mosquitoes were to mark the exact aiming-point with red T.I. 19 backers-up were to maintain this marking with green T.I. Main Force aircraft were to aim their bombs at reds if visible, otherwise at the estimated centre of the pattern of green. If no T.I. could be seen, aircraft were to bomb on E.T.A. Yellow route-marker T.I. were to be dropped by 5 Y-type Halifaxes at position 'B' (5017N. 0430E) on the way home, as an aid to navigation.

7. Timing:	Mosquitoes	Backers-up (Halifaxes)	Main Force
	1 at zero - 3	5 each minute from zero +2-zero+6	
	" zero + 1	4 " " " zero +8 -zero+11	zero
	" zero + 7	4 " " " zero +13 -zero+16	to
	" zero + 12	4 " " " zero+17 - zero+21	zero + 26
	" zero + 17	2 " " " zero+23 - zero+24	
	" zero + 22		
	(+ 2 reserves).		

3 training Mosquitoes at zero + 27, zero + 32, and zero + 37.

8. Bomb Loads (P.F.F.)

Mosquitoes:- (7 - (2 T.I. red L.F. + 2 T.I. red (delay 2½ minutes).
(1 - (4 T.I. red (2 L.B.))

Backers-up:- (5Y - (3 T.I. green L.F. + 2 T.I. yellow L.F. + 1 x 2,000 H.C. + 4 x 1000 G.P. (L.D.)
(5Y - (5 T.I. green (2 L.B.) + 1 T.I. yellow L.F. + 1 x 2,000 H.C. + 4 x 1000 G.P.)
(9 - (5 T.I. green (2 L.B.) + 1 x 2000 H.C. + 4 x 1000 G.P.)

Sorties

9. No. of aircraft despatched.....	374
No. of aircraft reporting attack on primary area.....	333 (89)
No. of abortive sorties (technical defect or manipulative error.....)	17
(reserve markers, not required.....)	2
(lack of equipment.....)	1
(sickness of crew.....)	1
No. of aircraft missing.....	20 (5)

Weather Experienced

10. Bases:- Variable amounts of cloud, decreasing during the night. Moderate to good visibility.

Route:- 6-10/10ths. cloud, tops 8-10,000'. Temporary clearances over Dutch coast on return. Winds:- at 14,000', 290°/45 mph.
at 21,000', 290°/50 mph.
at 28,000', 290°/90 mph.

Lachen: 7-10/10ths. cloud, tops 7-9,000'. Three-quarters noon. Good visibility above cloud. Winds: at 15,000', 300°/50 mph.
at 21,000', 280°/60 mph.
at 28,000', 300°/70 mph.

Night Photographic Statistics

11. Night photographs supplied no evidence of the success of this raid, owing to cloud conditions over the target.

Narrative of Attack:

12. The P.P.F. timing was excellent. The Mosquitoes attacked at zero - 4, zero, zero + 6, zero + 10, zero + 16 and zero + 20. The T.I. were therefore visible throughout the raid. The Main Force bombed from zero to zero + 26, thus conforming to their planned timetable. The attack built up with unusual speed, 76 aircraft bombing in the first 4 minutes - 69 on red T.I. The advantage of one Mosquito attacking before zero was made apparent. Altogether, 80% of the attacking force claimed to have bombed on red T.I. - a most satisfactory figure in view of the cloud conditions.

Day Reconnaissance

13. Reconnaissance photographs revealed severe damage to industrial, business and residential property. Industrial targets suffered most heavily in the N.E. districts where many factories are situated, and in the centre of the town, where numerous textile works and small old-fashioned firms stand in fully built-up areas. A great many of these were involved in the general destruction. Lachen contains no very large industries and few priority targets, but is noted for a multitude of small textile and engineering firms, and others producing needles and spinning machinery. Out of 140 such medium-sized and small factories, no fewer than 80 were damaged, many being over half destroyed. In addition to textile and engineering works, the damaged factories included some engaged in electrical equipment and cable manufacture, bleaching and dyeing, boiler making, needle making, glass and mirror manufacture and railway wagon construction.

14. Lachen is an important communications centre, and damage to railway property was serious. Station buildings, sheds, stores and rolling stock were destroyed and damaged, and tracks were disrupted by direct hits. Banks, the police headquarters and various state and municipal buildings were among the vast number of buildings wholly or virtually destroyed. Roughly half of the total built-up area of the town was devastated, and 16,000 housing units were rendered uninhabitable.

Special Equipment

15. OBOE 6 OBOE Mosquitoes were detailed to drop markers, and 2 more to act as reserves. All the original 6 were successful, and the planned timing was closely adhered to. The accuracy of the P.P.F. probably surpassed that achieved in any previous raid.

16. 3 OBOE freshmen were despatched to attack Lachen at the conclusion of the main effort. 2 bombed on OBOE and the third visually, since its signals were intermittent.

17. H2S 22 aircraft carried H2S as a navigational aid. 14 of the 20 which attacked reported that their sets were serviceable in the target area, and 4 used it to check their position at bombing. All returned safely.

18. GES The Eastern Chain operated on the Wyoming frequency throughout, and on the Zanesville frequency from 0100 to 0200 hours. The Southern Chain operated on the Carolina frequency. The average ranges were 230 and 210 miles on the outward and homeward routes respectively. 14 aircraft received fixes at a distance of more than 300 miles. Interference over Holland was of the usual type, but curious pulses were again reported over N. France. The main difficulty was the weakness of the 'B' signal of the Eastern Chain, particularly on the return route. The Southern Chain was not used, as no signal could be seen over enemy territory.

Defences

19. Flak and Searchlights: Since the route crossed no particularly strong ground defences, it is not surprising that very little flak activity was reported. Some was encountered from the Scheldt estuary on the outward route, and also over

...../N. France during

N. France during the return, but there appears to have been no sustained opposition. Aachen itself was poorly defended for a target so near the Ruhr, even allowing for the fact that cloud conditions hampered the defenders, especially in their use of searchlights. What flak there was seems to have been almost entirely barrage. 21 of our aircraft sustained damage, 2 so seriously that they crashed on return and were destroyed.

20. **Fighters:** Activity in 15 areas was overheard on enemy wireless traffic including 15 pursuits and 8 victory claims. Gilze and Florennes were the principal areas of operation. Our crews reported 67 interceptions, including 17 attacks and 25 other combats. The distribution of interceptions along the route was: 33% outbound, 21% over the target and 46% homebound. 2 aircraft reported damage by fighter fire.

Casualties

21.	No. of aircraft missing.....	20 (5 L)
	" " " damaged { flak..... 21	} 28
	{ fighter..... 2	
	{ British incendiaries..... 3	
	{ other causes..... 2	

An analysis of crews' observations suggests that at least one of our losses was due to flak and 12 to fighters. The flak loss occurred on the outward journey over Rotterdam. Fighter losses were: 4 outbound, at Noordwijk (2), Hertogenbosch and Eindhoven: 2 over the target and 6 homebound at Florennes (5) and Arras. Bombers were also seen falling at Venlo and Abbeville, but in neither case was there any clear indication of the cause of loss. Crews reported the destruction of 5 enemy aircraft, 2 of the combats being seen by other bombers. 2 other fighters were claimed as damaged.

COLOGNE

22. 2 P.F.F. Mosquitoes were detailed to drop green markers on Cologne as a diversion shortly before the main operation was due to begin on Aachen. Both Oboe sets failed, however, and neither aircraft attacked. The new third channel was being used for the first time on operations. Both Mosquitoes returned undamaged.

LE FLETS

23. 8 Wellingtons were despatched by 92 Group to drop leaflets on the towns of Rennes, Etampes, Chartres, Dreux and Versailles. 7 reached their targets, the eighth jettisoning its bundles wild after being badly hit by flak. This aircraft came down in the Channel on return, but all the crew were rescued. Another aircraft was slightly damaged by flak. Enemy aircraft were little in evidence, only one following being reported.

HJJ/JT.
DC/S. 26342/1/ORS3,
8th. October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INSTRUCTIONS		RESULTS		
				PRIC. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PL. K.	FIGHTER	NOT K/A.	ATT. ACC'D	NOT ATT. ...	H. E.	Ino.	
ALCHEN	B FVF	Noeq. IX	5	3	-	2*	-	-	-	-	-	-	-	-	P. 308.4	512.8
		Noeq. IV.	6	6	-	-	-	-	-	-	-	-	-	-	A. -	-
		Hal. IIAV	3	2	-	-	1	-	-	-	-	-	-	-	M. 23.7	32.7
		Hal. Ia	16	14	-	-	-	1	1	1.0	-	4	3	-	-	-
	B MAIN FORCE	Stir. I	4	4	-	-	-	-	1	-	-	-	1	-	Heavy Bombs	
		Stir. III	2	2	-	-	-	-	-	-	-	-	-	-	B0001b. A0001b.	
		Hal. IIAV.	3	3	-	-	-	-	-	-	-	-	-	-	P. 10	9
		Hal. Ia	8	7	-	-	-	-	1	-	-	-	-	-	M. 2	-
	1	Well. X	32	32	-	-	-	-	-	2	-	-	1	6	-	-
		Stir. I	3	3	-	-	-	-	-	-	-	-	-	-	-	-
	3	Stir. III	46	41	-	-	4	1	1B3	1	1.0	4	12	-	-	-
		Lanc. II	17	13	-	-	2	2	1	-	-	2	2	-	-	-
	4	Hal. IIAV	107	99	-	-	2	6	5	-	1B2	3	9	-	-	-
		Hal. Ia	29	28	-	-	-	1	2	-	1.0	1	4	-	-	-
		Well. X	23	20	-	-	2	1	2	-	-	-	-	-	-	-
	6	Hal. IIAV	41	34	-	-	1	2	4	1B2	-	-	2	10	-	-
		Hal. Ia	7	5	-	-	-	2	-	-	-	-	1	-	-	-
		Well. X	21	16	-	-	4	1	-	-	-	-	2	-	-	-
ALCHEN TOTAL		374	333	-	3	18	20	2E +19	1.0 +1	1E+ 2.0+2	17	50	-	-	-	
COLOGNE	B FVF	Noeq. IX	2	-	-	2	-	-	-	-	-	-	-	-	-	
BOMBING TOTAL			376	333	-	5	18	20	2E +19	1.0 +1	1E+ 2.0+2	17	50	-	-	
LEAFLETS	92	Well. III	4	3	1	-	-	-	1B1	-	-	-	1	-	-	
RECORDS	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-	
CH. TYPES	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-	
VESSEL LINES	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-	
DRSEX	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-	
LEAFLET TOTAL			8	7	1	-	-	-	-	-	-	-	1	-	-	
TOTAL			384	340	1	5	18	20	3E+ 20	1.0 +1	1E+ 2.0+2	17	51	-	-	

* reserve a/c NOT RECORDED

RAID TRACK AND BOMB PLOT NOT AVAILABLE

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 14/15th. JULY, 1943.BERLINSUMMARY

1. 8 P.F.P. Mosquitos were despatched on a harassing raid against Berlin. 6 attacked the capital from above 10/10ths. cloud. One aircraft returned early for technical reasons; the eighth crashed in the sea off the Norfolk coast. There is no evidence as to the cause of this loss.

Meteorological Forecast

2. Midnight frontal positions: (1) occlusion from Hebrides to 55°N. 02½° W. becoming (2) warm to York to London and southwards and (3) cold to N.W. Wales, then south-westwards. (4) deepening depression moving N.E. from Atlantic, probably centred off N.W. Ireland.

Bases: Cloud to great heights with rain near warm front. 10/10ths, base below 1,000', in warm sector.

Germany: Much medium cloud in N.W. Well broken medium and high cloud in centre. Fine weather in S. Berlin: up to 5/10ths. strato-cumulus and alto-cumulus, good visibility apart from smoke.

France: Much low cloud except in S.

Sorties

3.	No. of aircraft despatched.....	8
	" " " reporting attack on primary area.....	6
	" " abortive sorties (technical defect).....	1
	" " aircraft missing.....	0
	Result unknown (a/c crashed on return.....)	1

Weather Experienced

4. Berlin: 10/10ths. cloud, tops 28,000'. Very good visibility above. Three-quarters moon.

Enemy Defences

5. Enemy night fighters were operating in areas along the route, but no attempts at interceptions were heard and no claims were made. Moderate heavy flak was reported over Berlin, inaccurately predicted through cloud which the searchlights were unable to penetrate.

Casualties

6. A message was received from one returning aircraft that it was on fire over the North Sea and that the crew were baling out. Air/Sea Rescue discovered the wreck floating 30 miles off Yarmouth, but nothing was seen of the crew. There is no evidence of the cause of the crash.

111/JT.
EC/S. 26342/4/ORS3,
24th. September, 1943.

SQUADRON	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON PRIM. AREA.	ABORTIVE SORTIES NOT OVER ENEMY TERRITORY.	MISSING	DAMAGE		INTERCEPTIONS	RESULTS	
							FLYER	FIGHTER NOT EN. ACTION			
DEFLIN	8 FFP	Hesq. IV	8	6	1 + 1*	-	-	-	1E	-	P. 4.7 M. 8 Pouch Primary Re-carried by missing a/c.

* This a/c may have crossed the enemy coast.

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 15/16th. JULY, 1943.MONTBELLIARD: ITALIAN TRANSFORMER STATIONS: Munich:SUMMARYMONTBELLIARD

A force of 165 Halifaxes set out to attack the Peugeot Works at Montbelliard. The target was ground-marked and illuminated by Y-type aircraft and visual markers. A very concentrated attack developed round the first red T.I.'s, which unfortunately overshoot the works by about 700 yards, so that the damage to the works was far less than the accurate aiming of the main force deserved. 5 aircraft failed to return.

ITALIAN TRANSFORMER STATIONS

4 Italian transformer stations were the targets for 24 Lancasters, 6 being ordered to attack each from low level. Bologna, Arquata Scrivia and San Polo d'Enza were all damaged, but Reggio, which was attacked by only 2 aircraft, showed no damage on reconnaissance photographs. 2 aircraft were lost and the remainder landed in North Africa.

Munich

6 Mosquitoes were despatched by 8 Group to attack Munich. 2 completed the attack and the others returned early. No damage was sustained by the aircraft.

Metereological Forecast

Estimated midnight position of fronts: (1) occluded 62°N. 0° - 61°N. 3½°E. becoming (2) warm to 55°N. 8°E. - Exden - S.E. Holland (becoming weak over the continent), and (3) cold from 61°N. 3½°E. - Lincolnshire - Start Point and moving westwards. At 1800 hours G.M.T. a cold front extends from N. of Yarmouth - Exden - Plymouth, with a wave over S.W. England, which will cause the front to be almost stationary over the South Coast and Channel.

Home bases: variable amounts of cumulus and strato-cumulus, base 1,500 ft., with patches below, in local showers in N. Good visibility. Bases fit for return.

N. France: well broken medium cloud.

Low Countries and coastal area of N. Germany; much cloud at various levels. Over Germany cloud will decrease southwards, becoming broken at medium levels in Ruhr-Hanover area and small amounts in middle Rhine-Leipzig area; S. of N. weather will be fine over Germany.

N. Italy and S. France: fine.

Montbelliard and Munich: cloudless, good visibility.

Route: active cold front in Channel, with medium cloud extending from 51°N. 49°N. in a belt about 50 miles wide. Cloud is expected to be almost continuous vertically from 1,000 feet to about 23,000 feet, with serious risk of icing above 10,000 feet. From the enemy coast onwards there will be little or no cloud and from 49°N. southwards, almost clear skies and good visibility. On the return the front will be met 50-70 miles further S.; and cloud over England will be much more broken.

...../winds.

Winds:	750mb.	500mb.	350mb.
Bases for take-off:	270°/30-40 m.p.h.	250°/60 m.p.h.	230°/80 m.p.h.
Channel-Orleans:	250°/30 m.p.h.	250°/40 m.p.h.	240°/45-50 m.p.h.
Orleans-Montbelliard:	240°/20 m.p.h.	260°/40 m.p.h.	270°/40 m.p.h.
Bases for return:	270°/30 m.p.h.	260°/50 m.p.h.	240°/65 m.p.h.

MONTBELLIARDPlan of Attack

5. Route: 8 Group: Selsey Bill - Cabourg - 48°15'N. 01°00'E - 47°15'N. 06°02'E - TARGET - turn left - 47°50'N. 03°35'E - 48°15'N. 01°00'E - Cabourg - Selsey Bill.

4 Group: as above, omitting 47°50'N. 03°35'E.

6. Method Route Markers: yellow T.I.'s were to be dropped by 8 Y-Halifaxes at 47°15'N. 06°02'E. 9 Y-Halifaxes were to mark the target blindly with yellow T.I.'s, then to drop a stick of flares 6 seconds later on the same heading, at 6 second intervals. If illumination was already considered sufficient, and if visual markers were already dropping T.I.'s, the flares were to be withheld. H.E. bombs of these aircraft were not to be dropped blindly, but aimed at red or green T.I.'s on a second run. 6 visual markers were to mark the aiming-point with red T.I.'s, using yellow T.I.'s as a guide. They were not to drop red T.I.'s unless the aiming point was positively identified. 8 backers-up were to aim green T.I.'s at the estimated centre of all red T.I.'s, or, if none were visible, at the estimated centre of all green T.I.'s, or, as a last resort, at the centre of all yellow T.I.'s. Main force aircraft were to aim at red T.I.'s if visible, otherwise at the estimated centre of all the green T.I.'s. If no T.I.'s could be identified bombs were to be brought back. No attempt was to be made to identify the aiming-point visually. On the return flight, route markers (yellow T.I.'s) were to be dropped by 7 Halifaxes at position 47°40'N. 03°35'E.

7. Bomb Loads

Blind-markers: 9 Y-Halifaxes: 2 T.I.'s yellow + 5 (4 flares white) + 3 x 1,000 M.C. + 2 x 500 M.C.
 Visual-markers: 6 Y-Halifaxes: 2 T.I.'s yellow L.E. + 2 T.I.'s red L.B. + 2 T.I.'s H.C. + 3 x 1,000 H.C. + 2 x 500 H.C.
 Backers-up: 8 Halifaxes: 1 T.I. green L.E. + 2 T.I.'s green + 3 x 1,000 M.C. + 3 x 500 H.C.
 Main force: 10 aircraft incendiaries; remainder H.E. only.

8. Timing. Zero hour: 0150 hours. Period of attack: 0146-0200 hours.

Blind-markers: 9 Y-Halifaxes at (Z - 4)
 Visual-markers: 6 Y-Halifaxes at (Z - 4) - (Z)
 Backers-up: 8 Halifaxes at (Z + 1) - (Z + 8) at 1 minute intervals.
 Main force:
 1st. Wave: (Z) - (Z + 5)
 2nd. Wave: (Z + 5) - (Z + 10)
 3rd. Wave: (Z + 7) - (Z + 10)

9. Tactics Aircraft of 4 Group were to attack at the best tactical height consistent with the defences encountered, in no case below 4,000 feet. Selected crews were to be used to ensure maximum damage to the works without avoidable civilian casualties. The need for extreme accuracy in bombing was to be stressed. Crews were also to be specially warned to take particular care to avoid violating Swiss neutrality.

Sorties

10.	No. of aircraft despatched.....	165
	" " " reporting attack on primary area.....	152 (92.2)
	" " " " " alternative area.....	13 (7.8)
	" " abortive sorties (technical & manipulative defects).....	5 (3.0)
	" " aircraft missing.....	5 (3.0)

...../Weather Experienced.

Weather Experienced

11. Home bases: frontal cloud with rain and patches of cloud below 1,000 ft. over S. England and Essex at dusk, slowly drifted south. Remainder of area, variable cloud, decreasing during the night to small amounts. Local fog and mist developed late in night over Lincolnshire, S. Midlands, Essex and S. England, behind front.

Route: 10/10ths. frontal cloud over S. England and E. English Channel to target.

Target: small patches of thin cloud at medium levels. Moderate visibility. Winds: 8,000 feet / 240° / 32 m.p.h. Moon: up all night, 85% of full.

Night Photographic Statistics.

12.	No. of photographs with bombing examined.....	147
	" " " showing ground detail (plotted within 3 mls... 133)	145
	" " " " outside 3 mls... 12	
	" " " " fire tracks (unplotted..... NIL)	2
	" " " " " plotted within 3 mls... 1	
	" " " " " outside 3 mls... NIL	
	" " " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming-point.....	137

Narrative of Attack

13. The target was almost continuously marked by red T.I.'s dropped by visual markers, but the first red T.I.'s overshot the aiming-point by several hundred yards, and the other markers appear to have aimed at these T.I.'s. Almost the whole of the main force and the back-up attacked the same area, with the result that most of the bombs fell N.E. of the Peugeot Works, which cover only 1,100 yards by 600 yards. The concentration of bombing was very good, but the unfortunate displacing of the red T.I.'s resulted in very little damage to the works. 12 aircraft bombed an aircraft which crashed about 40 miles from the target, mistaking the fire for T.I.'s.

Daylight Reconnaissance

14. Reconnaissance photographs revealed that 7 buildings of the Peugeot Works were severely damaged and 6 others affected, mainly by H.E. These included the swaging workshop, the foundry for steel castings, a large machine shop and 3 workshops. In the village of Sochaux, a magneto factory, a small watch and clock factory and an unidentified works were severely damaged. In addition about 90 houses were destroyed or damaged. Almost the whole of the damage outside the works was to the N.E.

Accuracy of Bombing

15. A very complete bombfall plot was received and analysed. It showed that the main concentration of bombs was centred about a point 930 yards N.E. of the aiming-point, with an average error about its I.P.L. of some 550 yards. Most of the displacement was due to a 690 yard error in marking, but there was in addition a systematic overshoot with respect to the markers, and it was estimated that only 1.7% of the bombs dropped fell on the works. This compares unfavourably with the result achieved at Friedrichshafen, where 9.0% of the bombs reached the target, which was only about one quarter of the size of the Peugeot Works.

Alternative Targets

16. 3 aircraft reported attacking a fire near Besançon; photographic evidence indicated that this was in fact a crashed aircraft, and that 9 other bombers, which reported attacking the primary target, also released their loads in the same place.

...../Special Equipment.

Special Equipment

17. H2S 9 Y-type aircraft were despatched to drop flares and mark the target blindly. All reported attacking with bombs, but only 2 dropped flares and markers, while 2 more dropped flares and bombs, but no markers, as red T.I were already visible. H2S was unserviceable in 3 aircraft and 2 others had difficulty in distinguishing the target. Except for one aircraft, all relied on visual identification.

18. A further 15 aircraft carried H2S as a navigational aid. 9 of these reached the target with serviceable sets, and one used it to check his position at bombing.

19. GEE The Southern Chain operated on the Carolina frequency throughout the raid. The average ranges on the outward and homeward routes were 195 and 205 miles, the maximum being 358 miles. Jamming was reported from the French coast onwards, and at the average ranges given this swamped the GEE signals. The ranges were poor for this route, and the jamming strength appeared to have increased.

Enemy Defences

20. Flak and Searchlights Very little ground opposition was encountered this raid. Light flak was reported from Cabourg and Caen, and heavy flak from isolated points on the French coast. Over Montbeliard inaccurate flak, both heavy and light, was reported, diminishing almost to nil at the end of the attack. There were no reports of searchlights. None of the returning aircraft was damaged by flak; however, this attack was made at low level, so that this fact does not exclude the possibility that some of the missing aircraft may have been destroyed by light flak.

21. Fighters Intercepted wireless traffic suggested that there was very little fighter activity. Details of only one patrol were heard; this was unsuccessful, but there were 2 indirect references to fighter victories. 2 attacks, 3 other combats, and 4 approaches were reported. At least 6 of these were outbound and 2 over the target. 2 aircraft were damaged by fighters.

Casualties

22. No. of aircraft missing..... 5 (3.0%)
 " " " damaged (flak..... NIL)
 (fighter..... 2) ... 3 (1.8%)
 (other causes..... 1)

Observations of aircraft shot down suggest that bombers were lost to fighters at Auxerre and Chatillon-sur-Seine, and that 2 other aircraft were destroyed at Besancon and Orleans, the cause of loss being unknown. It is possible that in the case of the aircraft shot down at Chatillon-sur-Seine, the fighter was also destroyed. There were no observations of aircraft shot down by light flak. One aircraft crashed on landing owing to shortage of fuel.

ITALIAN TRANSFORMER STATIONS

<u>Sorties</u>	R.	B.	A.	P.
23. No. of aircraft despatched.....	6	6	6	6
" " " reporting attack on primary area.....	2	6	5	6
" " " reporting attack on alternative area.....	2	0	1	0
" " abortive sorties.....	0	0	0	0
" " aircraft missing.....	2	0	0	0

R = Reggio (Emilia). B = Bologna. A = Arquata Scrivia. P = San Polo D'Enza.

...../Weather Experienced.

Weather Experienced

26. North Italy: No cloud, ground haze. Moon above the horizon, 85% of full. At San Polo D'Enza the moon was obscured by hills.

Narrative of Attack

25. 6 Lancasters of 5 Group were despatched to each of the 4 transformer stations, Reggio (Emilia), Bologna, Arquata Scrivia, and San Polo D'Enza. 19 aircraft attacked the primary targets, from low level (800-2,700 feet), 3 bombed alternative targets, and 2 were lost. Except at Reggio, which was attacked by only 2 aircraft, the bombing was controlled by the leader. Damage at all 3 targets showed that the method was successful, but greater accuracy might have been achieved had there been no ground haze. In addition to damage shown on reconnaissance photographs, an ammunition train was set on fire near Arquata Scrivia transformer station. Machine-guns were used on the transformer stations and on flak positions.

Daylight Reconnaissance

26. Reggio (Emilia) Neither damage to the transformer station, nor craters in the vicinity were seen on the reconnaissance photographs.

27. Bologna A possible hit was scored between 2 sets of open-air switch gear at the E. end of the transformer station, and discolouration of the ground suggested that oil had leaked from one of them. Another probable hit was seen among pylons and overhead lines at the W. end of the station, although no damage was visible. Apart from this, 4 buildings of a factory on the E. bank of the River Reno were demolished, and one or 2 houses damaged. About 30 craters were seen in a nearby field.

28. Arquata Scrivia The roof of the building housing the 130 K.V. apparatus and transformers was severely damaged, and a shed was destroyed. 2 craters were also seen within the perimeter of the transformer station. Hits were scored on a nearby rail-track and on a road, and 9 other craters were visible.

28. San Polo D'Enza At least one, probably 2 craters were seen near the building containing a number of frequency changers; the whole of the S.E. side of the roof was damaged by blast and the central part of the roof had partially collapsed. On the N.E. of the frequency changer house there was a large patch of what appeared to be oil, the broadest part of the patch surrounded one of the ~~main~~ transformers. It is possible that this may have been due to bomb-splinters penetrating the transformer. A pylon S.E. of the frequency changer house was lying on the ground, and a nearby railway was marked by blast from 2 bomb bursts. About 40 craters were visible to the E. and N.E. of the works.

Alternative Targets

30. 2 aircraft were unable to locate their target, and one engine of another failed. Genoa was attacked by 2 of these, while the third bombed an unidentified marshalling yard in N. Italy.

Enemy Defences

1. Flak and Searchlights. The defences en route and over N. Italy were negligible; flak was active at Arquata Scrivia and Bologna, but the guns were silenced by fire from the attacking aircraft. 3 aircraft at Arquata Scrivia sustained minor damage.

2. Fighters Several enemy aircraft were seen over Italy, but these did not approach the bombers.

...../Casualties.

Casualties

33. No. of aircraft missing..... 2 (8.3)
 " " " damaged { flak..... }
 { fighters.....NIL } 6 (25.0)
 { other causes..... }
 }

Nothing is known of the fate of the 2 missing aircraft. 2 Lancasters were damaged by bomb splinters and another was destroyed when it overshot on landing at Blida Airfield.

Munich

34. 6 Mosquitoes were despatched to attack Munich and 2 completed the task, bombing on E.T. from the inner Sec. 3 returned early owing to technical defects and one owing to severe icing. No opposition was encountered, and all returned safely.

YHO/JT.
 L/S. 26342/2/ORS.
 5th. October, 1943.

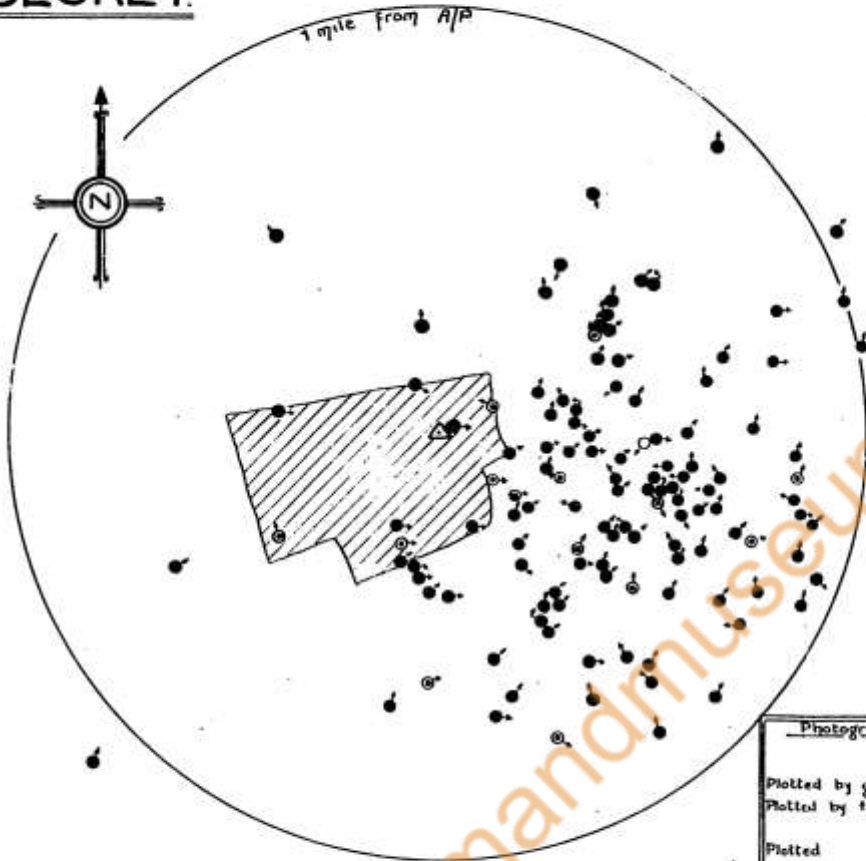
TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS		
				PRIM. AREA	ALT. AREA	OVER E.T.	NOT OVER E.T.		FLAK	FIGHTER	NOT E/A	ATTACKED	NOT ATTACKED	R.E.	Inc.	
MONTPELLIARD	8 PFF	Hal. II	3	2	-	-	1	-	-	-	-	-	-	P.	353.6	24.6
		Hal. Ia	19	18	-	-	-	1	-	1+1.C	-	2	-	A.	8.0	-
	8 MAIN FORCE	Hal. IIRV	3	3	-	-	-	-	-	-	-	-	-	M.	12.5	-
		Hal. Ia	6	6	-	-	-	-	-	-	-	-	-			
MONTPELLIARD TOTAL	16	Hal. IIRV	102	94	2	2	1	3	-	-	1B	-	6			
		Hal. Ia	32	29	1	1	1	1	-	-	-	-	1			
REGGIO	5	Lanc. III	6	2	2	-	-	2	-	-	-	-	-	P.	6.0	-
BOLOGNA	5	Lanc. III	6	6	-	-	-	-	-	-	1E	-	-	P.	6.2	-
VERONA	5	Lanc. III	6	5	1	-	-	-	3	-	1	-	-	P.	15.0	0.3
SAN POLO D'ENZA	5	Lanc. III	6	6	-	-	-	-	-	-	1	-	-	P.	3.4	-
MONTPELLIARD TOTAL			24	19	3	-	-	2	3	-	2+	-	-			
											1E					
MUNICH	8	Mosq. IV	6	2	-	1	3	-	-	-	-	-	-	P.	1.6	-
TOTAL			195	176	6	4	5	7	3	1+1.C	2+	2	7			
											1B+					
											1E					

RAID TRACK NOT AVAILABLE

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 15/16 JULY 1943 TARGET: MONTBELIARD

391

SECRET.



ORS/BC 2408
 Date 28.8.43
 Ref. N.14.328 C.M. 622



Photographs taken with Bombs		
	PFF marker aircraft	Main Force aircraft
Plotted by ground detail	⊙	⊙
Plotted by fires	⊙	⊙
Plotted	By ground detail	By fires
Within 3 miles	133	1
Outside 3 miles	12	—
Unplotted	—	1
No of prints (with bombs) examined: 147		
13 aircraft have been plotted outside the area of this map		

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BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 16/17th JULY, 1943.

ITALIAN TRANSFORMER STATIONS : Munich : Leaflets.

SUMMARY.

ITALIAN TRANSFORMER STATIONS.

1. Cislago and Brugherio Transformer Stations were the targets for 18 Lancasters. 7 of the 9 Lancasters on Cislago made a successful attack, but haze over Brugherio caused the leader to order the remainder of his force to attack Reggio (Emilia). Cislago was severely damaged, but no damage was visible either at Brugherio or Reggio. One aircraft was missing, and the remainder landed in North Africa.

Munich.

2. 6 Mosquitoes carried out a successful harassing raid on Munich, all returning undamaged.

Leaflets

3. Leaflets were scattered over Northern France by 7 Wellingtons, none of which was damaged.

Meteorological Forecast

4. Estimated midnight position of fronts (1) occluded 63°N. 12°E. - 60°N. 17°E. - 57½°N. 17°E. - becoming (2) cold to Stettin-Hanover - Cologne - Paris - Nantes; (3) warm front approaching from W., probably well into Ireland by midnight.

Home Bases:- visibility mainly good at take-off, and not less than 2 miles up to dawn apart from local smoke troubles in 1 and 5 Groups, and a slight risk of low-lying mist at dawn in Norfolk and S. Lincolnshire.

France:- small amounts of cloud in N.

Germany:- broken strato-cumulus N. of front. Local thunderstorms in central Germany, S. of cold front, throughout the night. Small amounts of cloud in S.E.

Italy: small amounts of cloud in N.

Munich: visibility good. Ruhr: ground probably invisible from 28,000 feet owing to cloud.

Route to and from Munich and Ruhr: small amounts of cloud for first 150-200 miles then a belt of multi-layered cloud generally below 25,000 feet, with most of the tops to 20,000 feet, with some cirrus above. The next 100 miles, including Munich, mainly clear of cloud apart from well broken thin medium cloud and cirrus.

Winds:

500 mb.

300 mb.

Bases to Strasbourg:	290°/30 - 35 m.p.h.	290°/30 - 35 m.p.h.
Strasbourg to Munich:	270°/25 - 30 m.p.h.	290°/40 - 45 m.p.h.
Strasbourg to Dijon:	260°/25 m.p.h.	290°/40 m.p.h.
Dijon to Genoa:	260°/10 - 15 m.p.h.	270°/20 - 25 m.p.h.

...../ITALIAN TRANSFORMER STATIONS.

5. Sorties

ITALIAN TRANSPORTER STATIONS

<u>Sorties</u>	<u>Cislagio</u>	<u>Brugherio</u>
5. No. of aircraft dispatched.....	9	9
" " " reporting attack on primary area.....	7	7
" " " " " secondary area..	0	0
" " " " " alternative area.	1	1
" " abortive sorties.....	0	0
" " aircraft missing.....	1	1

Weather Experienced

6. North Italy: no cloud and good visibility, but hazy. Full moon.

Narrative of Attack

7. The force of 18 aircraft was divided into 2 sections; the attacks by each section were controlled by its leading aircraft. 7 of the 9 Lancasters detailed for Cislagio attacked successfully from low-level, one aircraft lost the formation and bombed Spezia, and the ninth failed to return. The leading aircraft of the Brugherio formation attacked the target, but instructed the remainder of the force to bomb the secondary target, Reggio (Emilia) Transformer Station, owing to haze. All report attack, but at least one member of the force believed that the majority bombed a wireless transmitting station at Parma in error. All aircraft landed in North Africa.

Daylight Reconnaissance

8. Cislagio The transformer station at Cislagio was shown by reconnaissance photographs to be severely damaged. 3 of the 4 220/45 K.V. single phase transformers appeared to be damaged, and were surrounded by oil. A pylon seemed to be about half its normal height and the 45 K.V. lead-out gantry was damaged in several places. One of the 220 K.V. line circuit breakers at the S.E. end of station was demolished, and several craters were visible on the N.E. boundary wall near the 220 K.V. lead-in gantry and switches. 4 bays of an 8 bay work were almost destroyed and 4 small sheds were wrecked. A crater seen at the corner of the main road and the entrance road caused a partial blockage and 2-3 direct hits were seen on a road near a flak position. Other craters were visible outside the S.E. boundary.

9. Brugherio and Reggio No visible damage was caused to either transformer station and no craters were seen in the vicinity.

Enemy Defences

10. Flak and Searchlights Little flak was experienced in the target area but heavy predicted flak was in action at Spezia, and over Genoa. 2 aircraft were hit.

11. Fighters One Ju.88 over Cislagio caused considerable trouble, and seriously damaged the one Lancaster which it attacked. There were no other interceptions.

Casualties

12. No. of aircraft missing.....	1 (5.4%)
" " " damaged { flak.....	2
{ fighters.....	1
{ other causes.....	1
Total damaged.....	4 (22.2%)

Nothing is known of the fate of the one missing aircraft. One Lancaster crashed on landing owing to petrol shortage.

Munich

13. 6 Mosquitoes bombed Munich from high level, bursts being seen in the target area. Searchlights exposed after the aircraft had bombed, but there was no flak, and all the aircraft returned undamaged.

Leaflets

14. Leaflets were scattered in northern France by 7 Wellingtons, all of which returned safely.

EMO/JT.
BC/S. 26342/2/ORS.
5th. October, 1943.

ITALIAN TRANSPORTS DESTROYED: Munich: Leaflets: 16/17th. JULY, 1943.

TARGET	GROUP	TYPE	SORTIES	AIRCRAFT REPORTING ATTACK ON		ABORTIVE SORTIES		MISSED	DAMAGE			INTERCEPTIONS		RESULTS		
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT E/A	ATTACK- ED	NOT ATTACK- ED	H. R.	Tons of Bombs Inc.	
CISLIAGO	5	Lanc. III	9	7	1	-	-	1	2	1.0	1	1	-	P.	20.3	2.0
BRUGHERIO	5	Lanc. III	1	1	-	-	-	-	-	-	-	-	-	P.	2.9	0.3
REGGIO*	5	Lanc. III	8	8	-	-	-	-	-	-	-	-	-	P.	2.9	0.3
TARGETS IN ITALY	TOTAL		18	16	1	-	-	1	2	1.0	1	1	-			
MUNICH	8	Monq. IV	6	6	-	-	-	-	-	-	-	-	-	P.	4.6	-
BOMBING TOTAL			24	22	1	-	-	1	2	1.0	1	1	-			
LEAFLETS																
MONTMAGIS	91	Well. X	1	1	-	-	-	-	-	-	-	-	-			
CHATELAIN	91	Well. III	1	1	-	-	-	-	-	-	-	-	-			
LEZ-TOURNAI	91	Well. III	1	1	-	-	-	-	-	-	-	-	-			
CHATELAIN	91	Well. III	1	1	-	-	-	-	-	-	-	-	-			
CHATELAIN	91	Well. III	1	1	-	-	-	-	-	-	-	-	-			
TOURNAI	91	Well. III	1	1	-	-	-	-	-	-	-	-	1			
LA FLECHE	91	Well. III	1	1	-	-	-	-	-	-	-	-	-			
LA FLECHE TOTAL			7	7	-	-	-	-	-	-	-	-	1			
TOTAL			31	29	1	-	-	1	2	1.0	1	1	1			

* Secondary target - diverted from primary (Brugherio) by leader.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 17/18th JULY, 1943.LEAFLETS.SUMMARY.

1. 4 aircraft from Training Groups dropped leaflets over France without incident.

Metorological Forecast.

2. Basos:- Warm front approaching W. Ireland and S.W. England. All fit until 0300, thereafter local stratus and visibility troubles. Fog in Channel. Thunderstorms in S.W.

Germany:- Little cloud in N.W. Thunderstorms and thundery rain persisting in centre and S. Berlin: broken strato-cumulus, possibly some medium cloud between 10,000' and 15,000'. Total cover, 4-7/10ths.

France:- 10/10ths - medium cloud, with much very low cumulo-nimbus, over W. coast. Thunderstorms in centre and S.

Sorties.

3. (a) No. of aircraft despatched 4
 (b) " " " reaching primary area 4
 (c) " " " missing 0

Weather Experienced.

4. 3/10ths cloud. Ground haze. Clear visibility.

Enemy Defences.

5. There was no evidence of controlled night fighter activity on this night. A little heavy flak at Le Mans provided the only opposition.

Casualties.

6. All our aircraft returned undamaged.

Target	Gp.	Type	Sorties	A/C reaching primary area	A/C Missing	Damaged	Interceptions
LAVAL	92	Woll.III	1	1	-	-	-
ARGENTAN	92	"	1	1	-	-	-
LE MANS	92	"	1	1	-	-	-
LENCON	92	"	1	1	-	-	-
TOTAL			4	4	-	-	-

SLM/LIS
 EC/S.26342/4/ORS.3.
 24th September, 1943.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 18/19th JULY, 1943.Mine-laying.SUMMARY.

1. 16 Wellingtons of 1 Group laid 32 mines off the French Atlantic coast without loss.

Metereological Forecast.

2. Midnight frontal positions:- (1) occlusion from 60°N 05°W to Orkney to 50°N 03°E., becoming (2) warm southwards to 50°N 05°E and (3) cold south-westwards to Lincs. and S.W. England. Belt of rain with cloud to great heights (freezing level 7,000') along cold front. In warm sector, showers with cloud at 1,000'.

Bases:- 7-10/10ths at 1,000' by dusk, falling to 600' in many areas, with showers. These conditions will persist all night. Visibility 2-3 miles, locally 1 mile.

Germany:- Continuous cloud at medium levels between 05°E and 09°E., N. of 50°N. Low cloud and rain to 07°E. Little cloud E. of 09°E. Broken medium cloud S. of 50°N.

France:- Showers over N.E. France and Low Countries. Broken medium and strato-cumulus in centre and E. Stratus below 1,000' in N.W. Much layer cloud in S.W.

Sorties.

3. (a) No. of aircraft despatched 16
 (b) " " " reaching primary area. 16
 (c) " " " missing 0
 (d) No. of mines laid 32

Weather Experienced.

4. W. France:- Thin, broken strato-cumulus, base 3-4,000'. Excellent visibility. Full moon.

Enemy Defences.

5. Intense and accurate light and heavy flak with searchlights covered the whole area of Lorient/Port Louis/Ile de Groix. Slight light and heavy flak was met at Morlaix and Ile de Batz. There was no evidence of controlled night fighter activity.

Casualties.

6. All our aircraft returned safely. One was slightly damaged by flak near Lorient.

Target	Gp.	Type	Sorties	A/C reaching primary area	A/C missing	Damage (Flak)	Inter-ceptions	Results
Lorient	1	Well.X	8	8	-	1	-	16 mines
St. Nazaire	1	Noll.X.	8	8	-	-	-	16 mines
TOTAL			16	16	-	1	-	32 mines

W/L.S.
 C/S.26342/4/ORS.3.
 18th September, 1943.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 23/24th JULY, 1943.LEAFLETS.SUMMARY.

1. 7 aircraft from Training Groups dispersed leaflets over Paris, Melun, Monterau and Fontainebleau. All returned safely, though 2 were damaged by flak.

Meteorological Forecast.

2. Bases:- Little or no cloud, except locally on E. coast and inland in East Anglia; base not below 1,500'. Visibility troubles may occur in 3 and 8 Groups by 0200 hours, and in other Groups by 0400 hours, with ground fog becoming widespread.

Germany:- Low stratus over N.W. coastal strip, with well broken residual convection cloud. 10/10ths low stratus at Hamburg. Dispersing cumulus, possibly less than 5/10ths but extending to 25,000' in Ruhr and Berlin areas. Fog patches along Baltic Coast.

France:- Fog patches in N.W. Broken layer cloud S. of Nantes.

Sorties.

3. (a) No. of aircraft despatched 7.
 (b) " " " reaching primary area 7
 (c) " " " missing 0

Weather Experienced.

4. 10/10ths cloud, tops 5,000'. Clear visibility above. No moon.

Enemy Defences.

5. No controlled fighter activity was apparent on this night. Some flak was encountered from known positions.

Casualties.

6. 2 aircraft sustained slight damage from flak. All returned safely.

TARGET	GP.	TYPE	SOR- TIES	A/C REPORTING ATTACK OF PRIMARY AREA	ABOR- TIVE SORTIES	MIS- SING	DAMAGE			INTER- CEPTIONS
							FLAK	FIGH TER	NOT E/A	
<u>Leaflets.</u>										
PARIS	91	Whit.V	4	4	-	-	1	-	-	-
MELUN	91	Whit.V	1	1	-	-	1	-	-	-
MONTEREAU	91	Whit.V	1	1	-	-	-	-	-	-
FONTAINEBLEAU	91	Whit.V.	1	1	-	-	-	-	-	-
LEAFLETS	TOTAL		7	7	-	-	2	-	-	-

MLW/L.S.
 B./S. 26342/4/ORS.3.
 24th September, 1943.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 24/25th. JULY, 1943.HAMBURG: Leghorn: Kiel: Duisburg: Bremen: Lubeck: Minelaying: Leaflets.SUMMARYHAMBURG

1. 728 aircraft (92% of the total force of 791 despatched) delivered an exceptionally severe and devastating attack on Hamburg, the largest port in Europe and the second city in Germany. WINDOW, used for the first time on operations, so distracted the defences that only 12 aircraft were lost. The Pathfinders used the Newhaven ground-marking technique with great accuracy. This was the first of 4 raids within a fortnight that laid waste the greater part of Hamburg.

Leghorn

2. 33 Lancasters, returning from North Africa after attacking Italian transformer stations from Britain the previous week, bombed Leghorn. The port was found to be lightly defended, and good fires were started. None of our aircraft was damaged.

Kiel: Duisburg: Bremen: Lubeck.

3. 9 Mosquitoes, out of a force of 11, made harassing raids on the ports of Kiel, Duisburg, Bremen and Lubeck. All returned undamaged.

Minelaying

4. 6 Wellingtons each laid 2 mines in the Elbe estuary, without loss. One crash-landed on return, and was badly damaged.

Leaflets

5. 5 aircraft, out of a force of 7, dispersed leaflets uneventfully over towns in Northern and Central France.

Weather Forecast

6. Bases:- All fit at dusk, with clear skies and moderate visibility, deteriorating during the night; but by 0400 hours, 75% of bases will have 1 mile or better, and 50% by 0500 hours. 6 Group may have to divert. Training Groups safe.

Germany:- Small amounts of residual convection cloud in N.W. Residual cumulus cloud in centre and S., with local storms but clearances. Hamburg: Large amounts of strato-cumulus may drift in from the North Sea, not more than 1,000' thick. Even chance of little cloud over target. Similar conditions en route. Winds: to 05°E., 310°/10 m.p.h.; 05°E. to Hamburg, 360°/10 m.p.h.

W. France:- Broken layer cloud.

HAMBURGPlan of Attack

7. Routes:- 5445N. 0700E. - 5355W. 0945E. - HAMBURG - 5315N. 1000E. - 5430N. 0600E.

...../8. Method.

8. Method:- (1) Yellow T.I. were to be dropped as route-markers at 5411 N. 0850E. by 6 of the blind-markers. They were to be supported in this by 30 of the backers-up.

(ii) 20 Y-aircraft were to mark the target, on H2S, with yellow T.I. at zero - 3, then to drop sticks of flares at 6-second intervals if cloud conditions permitted (less than 6/10ths.).

(iii) 8 Y-aircraft, acting as visual markers, were to arrive at zero-2 and mark the aiming-point with red T.I.

(iv) 53 backers-up were to aim green T.I. at, in order of preference, (1) red T.I. (2) centre of green T.I. (overshooting in either case by 2 seconds) (3) centre of yellow T.I. 11 of these crews were to be expert in the use of H2S, and were to be spread evenly throughout the attack. They were to use H2S to check the accuracy of previous T.I. and recentre the attack if it began to creep back. If their H2S became unserviceable, they were to act as ordinary backers-up.

(v) Main Force aircraft were to bomb reds if visible, otherwise the centre of the pattern of greens. Yellows were to be ignored.

(vi) Yellow route-marker T.I. were to be dropped at 5343 N. 0836 E. by 6 blind-markers, supported by 21 backers-up.

9. Timing:- Zero hour: 0100 hours. Period of attack: 0057-0150 hours.

Blind-markers.	20 Y-aircraft at zero - 3.
Visual markers.	8 Y-aircraft at zero - 2.
Backers-up.	1 each minute from zero + 2 to zero + 48, (but 4 at zero + 2; 2 at zero + 6, +20, +29, +31, and +43; none at zero + 35 or +37).

<u>Main Force</u>	(i) zero + 2 to + 10: Lancs. of 1 and 5 Groups.
	(ii) zero + 10 to + 13: (Lancs. of 3 and 5 Groups. (Hals. of 4 Group.
	(iii) zero + 18 to + 26: Stirlings of 3 Group.
	(iv) zero + 26 to + 34: (Wells. of 1, 4, 6 Groups. (Hals. of 1 Group.
	(v) zero + 34 to + 42: Hals. of 4 and 6 Groups.
	(vi) zero + 42 to + 50: Lancs. of 1 and 5 Groups.

10. Bomb Loads:- Blind-Markers:

4 Lanc.	- 4x4 flare white	+ 4 T.I. yellow LB.	+ 1x4,000	+ 3x1,000
7 Hal.	- 4x4 "	+ 2 " "	+ 4x1,000 (1LD)	
2 Hal.	- 4x4 "	+ 4 " "	+ 4x1,000 (1 LD)	
7 Lanc.	- 4x4 "	+ 2 " "	+ 1x4,000	+ 3x1,000

Visual Markers

6 Lanc.	- 5 T.I. red (2 LB)	+ 1x4,000	+ 3x1,000.
2 Hal.	- 5 T.I. red (2 LB)	+ 3x1,000 (LD).	

Backers-up

8 Stir.	- 2 T.I. yellow LB	+ 5 T.I. green (2LB)	+ 5x500.
14 Lanc.	- 2 " "	+ 5 " "	+ 1x4,000 + 3x1,000.
14 Hal.	- 5 T.I. green (2LB)	+ 4x1,000 (1 LD).	
17 Hal.	- 5 " "	+ 1x4,000 + 3x1,000 + 1x8x40 GP.	

11. WINDOW:- WINDOW was to be dropped from 5434 N. 0730 E. on the outward journey to 5415N. 0700E. on the return. Rate of discharge: 1 packet per minute. Height of release: maximum possible. Minimum evasive action during the dropping of WINDOW.

12. Wind:- 6 of the blind-markers were to report by W/T, as early as possible, the wind they had found between the last GEE fix and the first fix by H2S on the enemy coast. Their report would be retransmitted to Main Force aircraft at zero - 10, zero, zero + 10 and zero + 20.
13. Ground Defences:- 17 of the backers-up and 35 non-marker Pathfinders were to scatter anti-personnel bombs on the ground defences as they left the target.
14. Diversionary Attacks:- 3 Mosquitoes were to raid each of Kiel, Lubeck and Bremen, to divert the fire-fighting services from the main attack.

Sorties

15.	(a)	No. of aircraft despatched.....	791
	(b)	" " " reporting attack on primary area.....	728 (92.0%)
	(c)	" " " " " alternative area.....	5 (0.6%)
	(d)	" " abortive sorties (technical defect or manipulative error.....42) (sickness of crew..... 2) (lack of equipment..... 1) (bombs hung up..... 1)	(+1 ^x) 46 (5.8%)
	(e)	" " aircraft missing.....	12 (1.5%)

^x = also attacked primary.

Weather Experienced

16. Bases:- Little cloud. Moderate visibility. Local mist and fog after 0500.
- Route:- 6-10/10ths. cloud, base 1,500', tops 3,000'. Good visibility.
- Hamburg:- No cloud. Hazy. Quarter moon. Good visibility. Wind up to 18,000': variable, 10-15 m.p.h.

Night Photographic Statistics.

17.	No. of photographs examined.....	647
	(plotted within 3 miles.....)	45
	No. of photographs showing ground detail.....	(plotted outside 3 miles.....64) ..114 (unplotted..... 5)
	No. of photographs showing fire-tracks only	(plotted within 3 miles.....275) (plotted outside 3 miles.....342) (unplotted.....30)
	No. of aircraft reporting attack.....	728
	No. of aircraft estimated, from photographic evidence, to have bombed within 3 miles of the aiming point.....	306

Narrative of Attack

8. The attack was opened on time by the blind illuminators, 11 of which attacked between zero - 3 and zero + 6. The first two are believed to have bombed short of the target (one is plotted 5½ miles N.W.) but the remainder were most accurate and at least one yellow T.I. fell very close to the aiming-point.
9. The first visual marker attacked at zero - 2, and his rods were reported to have fallen in the dock area, probably about 2 miles S.E. of the aiming-point. At the same time, a second visual marker released a single rod in error (his bomb-sight was w/s) 1½ miles N.W. These were followed at zero + 2 by 2 further salvos, one 3¼ miles E.N.E. on the edge of the built-up area, and the other 2½ miles W. in Altona. It was around these 4 salvos that the attack centred in the early stages, in 4 distinct concentrations.

20. By zero + 8, the last red marker had burnt out, and the responsibility for keeping the attack centred on the target rested with the backscup. They performed their task successfully until zero + 15, when undershooting caused a marked "creep-back." By zero + 30, a long carpet of incendiaries extended back along the line of approach for 7 miles.

Day Reconnaissance.

21. A reconnaissance sortie flown on 26th July covered a comparatively small area of Hamburg, including the districts of Altona and Harburg-Wilhelmsburg, and the docks. Very severe damage was revealed, including the effects of 2 heavy raids on 25th and 26th July by aircraft of the U.S.A.A.F.

22. In Blohm and Voss shipyards, the smithery, ship-fitters' shop, boiler-makers' and copper-smiths' shops, foundry, Diesel engine testing shop, and 2 tool stores were damaged. One dry dock was sunk and another had heeled over. In Howaldtswerke, the frame-bending and plate furnaces, angle-bar smithery, shipbuilding and machinery sheds, 3 shops of the M.A.N. Diesel engine works and one other building were severely hit. The Neuhofer power-station, the oil stores between Ross Hafen and Neuhofer Seeschiff Canal, the main railway station and Rathaus at Altona, and the Reichsbank Directorate were partly destroyed, while the municipal gasworks was wholly gutted. Many hits were recorded on railway trucks and sidings. Commercial and residential property was largely devastated, especially in all districts W. of Mussen Alster.

Alternative Targets

23. 5 aircraft attacked alternative targets, in the areas of Elmshorn, Wilhelmsburg, Busum, Heide and 5402 N. 0830 E. (flak-ship). A sixth aircraft which went on to attack the primary, dropped two heavy bombs respectively 20 miles S.S.W. and 5 miles S. of the target, after being damaged by flak.

Special Equipment.

24. H2S:- 74 Y-aircraft were despatched - 18 blind-marker illuminators, 10 recontrers, and 46 main force aircraft, carrying H2S for navigational purposes only.

24. 16 of the 18 blind-markers reported attack, but 4 of these dropped no T.I. because of unserviceable equipment and one on account of being centred by searchlights over the target, which necessitated violent evasive action. 3 of 12 blind-markers were also unable to use H2S, but dropped markers in spite of this; 7 marked blindly on H2S and 2 on H2S with a visual check. The standard of accuracy was high.

25. A further 10 Y-aircraft were detailed as recontrers. Their crews were instructed to check the position of the green T.I. dropped by the backscup, and to counter any errors by releasing their own T.I. over the aiming-point by means of H2S. All 10 reported attack, but only one on H2S. 2 of these dropped no T.I., finding their bomb-sights unserviceable.

26. 38 of the 46 aircraft which carried H2S as a navigational aid only, reached their target with serviceable sets. 2 attacked blindly on their equipment, and 13 were used it to confirm their position at bombing.

27. GEE:→ The Eastern Chain operated on the Wyoming frequency throughout. There was no jamming until 50 miles from Heligoland, but thereafter the usual types of interference were reported. Average ranges of 300 and 310 miles were obtained and the signals were strong, the 'B' signal being visible throughout the journey and at the target. The Northern Chain was tried, but only a signal, probably 'C', could be seen. The average ranges were an improvement on those obtained on 20/21st April, when this route was last used. This may have been due either to the enemy's jamming of the Virginia frequency instead of the Wyoming or to the improved training of navigators.

/..... 28. WINDOW

38. WINDOW:- On this night, WINDOW was used for the first time under operational conditions. It was dropped at the rate of one bundle per minute by each aircraft, from 5434N. 0755E. to the target, and to 5410N. 0720E. on the return journey. Minimum evasive action was ordered during the release of WINDOW, and aircraft were ordered to fly as high as possible.

39. Many references to the difficulties caused by WINDOW to the ground and fighter defences were overheard in intercepted wireless traffic. Some enemy aircraft reported interference, and others complained of "too many hostiles". A very interesting remark was "It is impossible, too many hostiles." This indicates that the WINDOW echoes, besides producing general interference on the display tube, were also confused with true aircraft echoes.

40. Aircraft flying considerably higher than the Main Force received little protection from WINDOW.

Defences

41. Flak and Searchlights:- On the outward and homeward journeys, moderately heavy flak was experienced from both banks of the Elbe, with some searchlights. Most reports mentioning any high degree of accuracy or intensity came from the earlier arrivals over the area. Hamburg defences put up a heavy barrage which, though initially intense, decreased noticeably as the attack progressed. Many searchlights appeared to be groping blindly, building up at times into cones of 30 to 40 beams, without achieving very effective results. Even so, both flak and fighters depended on them for their main support. 20 aircraft (2.5%) were damaged by flak - 9 Halifaxes, 8 Lancasters and 2 Stirlings. All the 10 incidents whose positions have been identified took place in the target area - 5 in the first 10 minutes of the attack.

42. Fighters:- 115 sorties by night fighters were overheard, 33 of which mentioned British aircraft. Our crews reported 49 interceptions, but only 7 of these developed into attacks. Enemy aircraft frequently seemed unaware of the presence of bombers in their vicinity. Only 2 instances of fighter damage were reported, and all the 5 bombers seen to be shot down in combat were at least 20 miles away from Hamburg.

Casualties

43.	No. of aircraft missing.....	12 (1.5%)
	" " " damaged (flak.....20)	}..... 31
	" " " (fighter..... 2)	
	" " " (non-enemy action..... 9)	

Of the 12 missing aircraft, 3 were probably lost on the outward journey, 5 over the target and 4 during the return. 5 (possibly 6) have been attributed to flak and 5 (possibly 6) to fighter. There is evidence from crews' reports that the outbound losses occurred, all to fighters, at Itzehoe, Meldorf and Holigoland, and that flak was responsible for 3 of the aircraft destroyed over Hamburg, the cause of the other 2 losses here being unknown. 2 aircraft were seen shot down by flak on the return route at Bremerhaven, and a further 2 by fighters at Cuxhaven and Wenzendorf. All but 3 of the aircraft whose destruction was observed were seen before being hit.

44. One Ju.88 was probably destroyed as the result of a collision with a Stirling. 2 Lancasters received damage when they collided over Wyton. One Lancaster and 2 Halifaxes were hit by British incendiaries, and another Lancaster was damaged by one of its own T.I., which was probably hit by flak as it left the aircraft.

45. The losses on this night were unexpectedly low for a raid on a target of such importance. Not only was the fighter efficiency impaired, as indicated by intercepted R/T traffic and the low attack/interception ratio, but, as is clear from the minor nature of all flak damage reported by returning aircraft, the A.A. guns were sadly hampered, while many of the searchlights wandered aimlessly about the sky.

...../LEGHORN.

LEGHORN

36. 33 Lancasters of 5 Group, returning from North Africa after having attacked Italian transformer stations from Britain earlier in July, were detailed to bomb harbour installations at Leghorn. All attacked the target, where the mole and docks were clearly visible through gaps in the low cloud. Bombs were seen to fall in the northern part of the harbour area, where two explosions were reported and large fires were started in the railway marshalling yards. The defences were very light, comprising 10 to 20 heavy guns and a few searchlights, and all our aircraft proceeded undamaged to British bases.

KIEL: DUISBURG: BREMEN: LUBECK:

37. 13 P.F.P. Mosquitoes were detailed to carry out harassing attacks on ports in N. and N.W. Germany - 4 on Duisburg and 3 each on Kiel, Bremen and Lubock. 2 aircraft returned early for technical reasons; the remaining 11 bombed their objectives in conditions of good visibility, except at Bremen, where the town was covered with 10/10ths. cloud. At Kiel, a large fire was started, which was visible for 30 miles on the return journey. Little opposition was encountered, and none of our aircraft was lost or damaged.

MINELAYING

38. 6 Wellingtons of 1 Group each laid 2 mines in the Elbe estuary. No damage was sustained from enemy action, but one aircraft belly-landed in a cornfield near its base and suffered serious injury. None of the crew was hurt.

LEAFLETS

39. 5 Wellingtons, out of a force of 7 despatched by 92 Group, dispersed leaflets over various towns in N. and Central France. No incidents were reported and all returned safely.

MLM/JT.
 BC/S.26342/2/ORS3,
6th. October, 1943.

HAMBURG: DUISBURG: BRUNNEN: KIEL: LUDWIG: LUDWIG: HAMBURG: HAMBURG: 24/25th. JULY, 1943.

TARGET	GROUP	TYPE	SORTIES	% REPORTING ATTACK ON		% DIVERSE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS		
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLANE	FIGHTER	NOT E/A	ATTACKED	NOT ATTACKED	H.E.	Inc.	
HAMBURG	8 PFF	Hal. IIIV	2	2	-	-	-	-	-	-	-	-	-	-	P. 1361.2	1002.4
		Hal. Ia	22	21	1 ^o	-	1	-	2	-	-	1	-	-	5.4	9.4
		Stir. I	6	6	-	-	-	-	-	-	-	-	1	-	14.7	10.2
	0 HLEN FORCE	Stir. III	1	1	-	-	-	-	-	-	-	-	-	-	-	-
		Lanc. I	4	4	-	-	-	-	-	-	-	-	-	-	-	-
		Lanc. III	43	42	-	-	1	-	1.03	-	1.0	-	4	-	-	-
	1	Lanc. I	23	20	-	-	2	1	-	-	-	-	1	-	-	-
		Lanc. III	100	93	1	-	3	3	2	-	-	-	4	-	-	-
		Well. X	35	31	-	-	3	1	-	-	1E	-	-	-	-	-
	3	Stir. I	6	5	-	-	1	-	-	-	-	-	1	-	-	-
		Stir. III	109	98	1	1	6	3	5	-	1B	-	5	-	-	-
		Lanc. II	16	15	-	-	1	-	-	-	-	-	-	-	-	-
4	Hal. IIIV	118	106	2	-	7	3	1	-	B+1A	1	6	-	-	-	
	Hal. Ia	40	34	1	-	4	1	-	-	-	1	2	-	-	-	
	Well. X	17	17	-	-	-	-	-	-	-	-	-	-	-	-	
5	Lanc. I	42	39	-	-	3	-	1C+1	-	1.0	-	3	-	-	-	
	Lanc. III	101	99	-	-	2	-	1.0	1.0	1.0	1	2	-	4	-	
6	Hal. IIIV	45	41	-	-	4	-	1	-	-	1	7	-	-	-	
	Hal. Ia	6	6	-	-	-	-	-	-	-	-	-	-	-	-	
	Well. X	21	19	-	-	2	-	-	-	-	1	4	-	-	-	
HAMBURG TOTAL			791	728	5+ ^o	1	45	12	1.0	1.0	1E+2B+2C+2A+2	7	42	-	-	

^o Also Attacked Primary.

...../Contd:

401

HAMBURG: DUISBURG: BRUNNEN: KIEL: LUDWIG: LUDWIG: HAMBURG: HAMBURG: 24/25th. JULY, 1943.

TARGET	GROUP	TYPE	SORTIES	% REPORTING ATTACK ON		% DIVERSE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLANE	FIGHTER	NOT E/A	ATTACKED	NOT ATTACKED	H.E.	Inc.
HAMBURG TOTAL			791	728	5+ ^o	1	45	12	1.0	1.0	1E+2B+2C+2A+2	7	42	-	-
DUISBURG	8 PFF	Mosq. IV	4	3	-	-	1	-	-	-	-	-	-	P. 2.3	-
BRUNNEN	8 PFF	Mosq. IV	3	3	-	-	-	-	-	-	-	-	-	P. 2.0	0.3
KIEL	8 PFF	Mosq. IV	3	2	-	-	1	-	-	-	-	-	-	P. 1.3	0.2
LUDWIG	8 PFF	Mosq. IV	3	3	-	-	-	-	-	-	-	-	-	P. 2.0	0.3
LUDWIG	5	Lanc. III	33	33	-	-	-	-	-	-	-	-	-	P. 79.0	4.3
DOMBURG TOTAL			857	772	5+ ^o	1	47	12	1.0	1.0	1E+2B+2C+2A+2	7	42	-	-
KIEL	1	Well. X	6	6	-	-	-	-	-	-	1D	-	-	12 mines	-
LUDWIG	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-
LUDWIG	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-
LUDWIG	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-
LUDWIG	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-
LUDWIG	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-
LUDWIG	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-
LUDWIG	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	-
LUDWIG TOTAL			7	5	-	-	2	-	-	-	-	-	-	-	-
TOTAL			850	783	5+ ^o	1	49	12	1.0	1.0	1E+3B+2C+2A+2	7	42	-	-

RAID TRACK NOT AVAILABLE

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 24/25 JULY 1943. TARGET: HAMBURG

402

SECRET



Photographs taken with bombing		
	IFF marker results	IFF force results
Plotted with ground detail	●	●
Plotted with force	○	○
Plotted	By ground detail	By force
Within 3 miles	47	230
Outside 3 miles	64	278
Unplotted	5	25
No. of prints (with bombing) examined	647	

Scale: 1 inch = 1 mile

XXX POSITION OF SMOKE SCREEN GENERATORS

ORS/BC 245B
 Date: 9/43 Corr: JJ
 Ref: 245B Ed: 1/43

www.bombard.com

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 25/26th JULY, 1943.ESSEN: Cologne: Hamburg: Gelsenkirchen: Minelaying:Leaflets.SUMMARYESSEN.

A highly successful groundmarking attack on the city of Essen was carried out by 705 aircraft, of which 16 were OBOE Mosquitoes. The raid was mainly concentrated on Krupps Works, which sustained fresh damage equal to the cumulative effect of all previous raids on Essen. Damage to the surrounding built-up area was also severe. 6 aircraft (3.33) were lost; this is less than the usual rate for Essen, and the reduction may be attributed to the use of WINDOW for the second time.

Cologne, Hamburg and Gelsenkirchen.

Harassing raids on Cologne, Hamburg and Gelsenkirchen were carried out by 10 of a total of 12 Mosquitoes despatched. No damage was sustained by the bombers.

Minelaying.

17 aircraft laid a total of 78 mines off the Frisian Islands, returning without incident.

Leaflets.

6 of 7 aircraft despatched by Training Groups scattered leaflets in northern France, all returning undamaged.

Metorological Forecast.

Home bases: fit for take-off, with clear skies and moderate visibility, which will deteriorate during the night. At 04.00 hours at least 75% of operational bases will have visibility of more than one mile.

Germany: generally fine in N.W., N. of 50°N., but a few patches of strato-cumulus; hazy. Good clearances in residual convection cloud in E., centre and S., and thunderstorms in Alps.

France: patches of layer cloud in N.

Essen: clear skies apart from fragments of residual cumulo-nimbus.

Routes: patches of cumulo-nimbus over the sea and the enemy coasts, particularly to the S. of the route, on the outward journey. Mainly cloudless on the return.

Wind:	<u>750 mb.</u>	<u>500 mb</u>	<u>300 mb.</u>
Yorkshire:	210°/25 - 30 m.p.h.	250°/30-35 m.p.h.	(350°/40 m.p.h. (out) (300°/45 m.p.h. (home))
Other bases and route:	Light, variable.	Light, variable	Light variable.

.../ESSEN

ESSEN.Plan of Attack.

6. Route. East coast - $33^{\circ}00'N$, $03^{\circ}32'E$. - Egmond - $51^{\circ}53'N$, $06^{\circ}38'E$. - TARGET
turn right - Noordwijk - $52^{\circ}40'N$, $03^{\circ}05'E$. - East coast .

7. Marking Method - Ground-marking.

(a) 5 Y-type backers-up were to drop warning yellow T.I.'s at $51^{\circ}51'N$, $06^{\circ}07'E$
(37 miles N.W. of Essen), the marking to be maintained by 11 other backers-up.

(b) 14 OBOE Mosquitoes were to mark the aiming-point with red T.I.'s.

(c) 33 backers-up were to aim green T.I.'s at red T.I.'s, if visible, otherwise
at the centre of existing T.I.'s, overshooting in either case by 2 seconds.

(d) Main force aircraft were to bomb red T.I.'s or the centre of the pattern
green T.I.'s.

8. Timing. Zero Hour - 0030 hours. Period of Attack - 0026 - 0114

<u>Mosquitoes</u> ^x	<u>Backers-up.</u>	<u>Main Force.</u>
(Z - 4), Z, (Z + 3), (Z + 6), (Z + 11), (Z + 14), (Z + 17), (Z + 22), (Z + 25), (Z + 28), (Z + 33), (Z + 36), (Z + 39), (Z + 44).	(Z + 2) - (Z + 40) To attack at the rate of one per minute, including (Z + 3), (Z + 14), (Z + 25), and (Z + 36), but not at other times coinciding with Mosquito attacks.	Z - (Z + 42).

^x Plus 2 reserves.

9. Bomb Loads.

Mosquitoes.

16 Mosquitoes:- 2 T.I.'s red L.B. + 2 T.I.'s red.

Backers-up.

13 Lancasters:- 1 T.I. yellow L.B. + 2 T.I.'s green L.B. + 3 T.I.'s green + 1 x 4,000
H.C. + 3 x 1,000 M.C.

6 Halifaxes:- 1 T.I. yellow L.B. + 2 T.I.'s green L.B. + 3 T.I.'s green + 3 x 1,000
M.C. + 1 x 1,000 G.P. (L.D.)

9 Halifaxes:- 2 T.I.'s green L.B. + 3 T.I.'s green + 3 x 1,000 M.C. + 1 x 1,000 G.P.

5 Lancasters:- 2 T.I.'s green L.B. + 3 T.I.'s green + 1 x 4,000 H.C. + 3 x 1,000 M.C.

10. Tactics. WINDOW was to be used at rate "Q". WINDOW dropping zone:- $52^{\circ}55'N$,
 $03^{\circ}45'E$. to target to $52^{\circ}43'N$, $03^{\circ}27'E$.

Sorties.

11.	No. of aircraft despatched	705
"	" " reporting attack on primary area	604 (85)
"	" " " " " alternative area.	101
"	" " abortive sorties (technical & manipulative defects	63)
	{ sickness of crew	2}
	{ late route	2} . . . 69 (
	{ crashed on outward route	1}
	{ inexperienced	1}
"	" " aircraft missing	23 (3)

...../Weather Experienceod.

Weather Experienced.

Home bases: Little cloud, hazy. Visibility deteriorated at several bases by 10 hours, but more than 50% of operational and training bases remained fit.

Route: Occasional patches of thin strato-cumulus. Winds light and variable from the E., W.S.W. to S.W./20 m.p.h. in W.

Essen: Nil, or small amounts of thin cloud far below the aircraft. Hazy. Report of a large cumulus cloud, top 20,000 feet, to the S. of the target. Surface wind, light variable or calm.

Night Photographic Evidence.

No. of photographs with bombing examined		505
" " " showing (plotted within 3 miles)	24	
ground (plotted outside 3 miles)	16	68
detail (unplotted)	28	
" " " showing (plotted within 3 miles)	31	
fire (plotted outside 3 miles)	5	437
tracks (unplotted)	401	
" " " estimated from the photographic evidence to have bombed within 3 miles of the aiming-point.		368

Narrative of Attack.

Red T.I's were accurately placed by 11 OBOE Mosquitoes, and although the timing was not as planned, the target was almost continuously marked. The backing-up was well timed and unbroken. The bombing of the main force was concentrated within a narrow strip about $1\frac{1}{2}$ miles wide, stretching back from the aiming point just S.W. of Krupps, for about $4\frac{1}{2}$ miles along the line of approach, and including the whole of Krupps Works. A few Stirlings and Halifaxes which bombed 4 to 8 miles short of the target, appear to have been decoyed by imitation red T.I's. Thus the main weight of the attack fell on Krupps Works and the surrounding built-up area, and the devastation appears to have been equal to the whole of that caused by all previous raids on this target.

Flight Reconnaissance.

Reconnaissance photographs revealed very severe damage, centred on Krupps Works, where, out of a total of 190 workshops, 110 have been affected. Havoc wrought by fire was great, and several buildings were still burning 2 days after the attack. Among the more important and larger departments damaged were the following:- (a) the pattern making shop, destroyed over an area of about one acre; (b) a machine shop, covering $3\frac{1}{2}$ acres, engaged on manufacturing field-guns and carriages was burnt out; (c) another machine shop, previously half destroyed, was completely gutted; (d) a third machine shop, already seriously damaged, suffered further devastation by fire, and was still burning; (e) 3 of the 4 annealing shops were almost obliterated, and the fourth was partially demolished; (f) the diesel engine works, covering more than 3 acres, and probably engaged in making medium and heavy gun mountings, was destroyed by fire; (g) 3 large buildings used for shell forging and turning sustained many hits by incendiary bombs, and were very heavily damaged. Other buildings destroyed included a sawmill, a constructional engineering shop, a light railway workshop, the rail-road administration building, a large number sheds and warehouse buildings, many workers billets and large dumps of stores and timber. 12 or 13 power or generator stations and boiler houses were damaged, and several cooling towers were demolished, thus seriously affecting the production of power for various plants. The general appearance of the works indicated that productional activity was at a low ebb. In addition, Krupps' harbour foundry was damaged again; several direct hits destroyed part of the roof of the steel foundry, an overhead travelling crane was probably broken, and a group of despatch sheds were severely damaged. Many craters were visible on paths serving various parts of the works, and on lines connecting with the main steel works in Essen.

16. Other industrial plants severely damaged included T.H. Goldschmidt A.G. (lead and tin smelters), Presswerke A.G. (makers of plastics), a large brewery and an unidentified engineering works at Ruttenscheid. 3 collieries, a zinc works, a small brewery, a bridge fabricating works, a brickworks and 8 unidentified engineering works and small factories were also affected. There were also many hit railway tracks and sidings, destroying or derailing numerous waggons and coaches. The main Essen station and goodsdepot, Essen Nord and Essen West passenger and goods stations, Sergeroth and Ruttenscheid goods depots and Bergeborbeck station all sustained damage to buildings or platforms. 3 motor transport depots or garages were seriously damaged, and many roads rendered impassable by craters.

17. 41 utilities or public buildings, including a gasworks, a slaughter-house, post-offices, the town-hall at Borbeck, and a bank were damaged or partially destroyed. 20 hutted camps for workers were affected, 2 being totally and 6 almost destroyed. In addition, more than 5,300 dwelling units were rendered uninhabitable.

Alternative Targets.

18. 9 aircraft attacked alternative targets in the areas of Duisburg, Borbeck, Oberhausen, Wesel, Bottrop, Rhenen, Doesburg, and Alkmaar (2). One aircraft which also attacked the primary target, dropped part of its load on a searchlight concentration near Duisburg.

Special Equipment.

19. OBOE. 14 OBOE Mosquitoes and 2 reserves were detailed to mark the target. The special equipment failed in 2 aircraft, including both reserves, but the remaining Mosquitoes completed the task. 3 OBOE channels were in operation; this was the first occasion on which all 3 were used for marking. As a result more aircraft were available, but owing to poor timing aircraft using different channels attacked almost simultaneously so that there were gaps in the marking. There were failures on the new channel.

20. H2S. H2S was carried as a navigational aid only. 37 of the 41 aircraft despatched reported attack, only 4 of these having unserviceable equipment. 2 aircraft returned early and 2 were missing. 2 bombers checked the position of the markers by H2S before attacking.

21. GEE. The Eastern Chain operated on the Wyoming frequency throughout, and on the Arizona frequency from 0000 to 0130 hours. 366 aircraft reported receipt to the target, and the average range was 350 miles, which equalled the distance between Essen and the Eastern A station. The usual interference on the Wyoming frequency was reported, but there was none on the Arizona frequency, which was used for the first time. No navigator whose set was working efficiently failed to get fixes over the target, or as far along the route as he required them. The main trouble experienced was changing frequency units in Halifaxes.

WINDOW Coverage.

22. WINDOW was dropped at the rate of one bundle per minute from 52°55'N. 03° to the target to 52°45'N. 03°28'E. This was the second occasion on which WINDOW was used. The reduction in losses, though appreciable, was not so great as in the raid on Hamburg on 24/25th July, but this was probably due to the longer passage over enemy territory, which enabled the defences to pick out stragglers. There was evidence that aircraft occupying relatively isolated positions of height and time when bombing were more prone to flak damage, and to encounters with enemy aircraft.

Enemy Defences.

23. Flak and Searchlights. Flak and searchlight activity differed little from usual, but there were no reports of very heavy flak in the Amsterdam/Rotterdam area and the numerous searchlights round Utrecht appeared to be indifferently controlled. At Essen flak, generally barrage fire, was slow to open up, increased in intensity in the early stages of the raid, and then deteriorated rapidly. Searchlights, although numerous, were less effective than usual and appeared to be somewhat disorganised. 44 aircraft were hit by flak, at least 27 over the target area.

TARGET	GROUP	TYPE	SORTIES	✓C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLAN	FIGHTER	NOT F/L	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E. Inc.
ESSEN	8 PFF.	Hoaq.IX	7	5	-	2	-	-	-	-	-	-	-	-	P. 10.5, 3, 919.7
		Hoaq.IV	9	6	-	3	-	-	-	-	-	-	-	-	A. 15.0; 14.7
		Hal.IIIV	2	2	-	-	-	-	-	-	1AC	-	-	-	M. 37.2; 29.9
		Hal.IA	7	6	-	-	-	1	-	1AC	-	-	-	-	Heavy Bombs
		Stir.I	4	4	-	-	-	-	-	-	-	-	1	-	8000lb, 4000lb
		Stir.III	1	1	-	-	-	-	-	-	-	-	-	-	P. 9 255
		Lanc.I	1	1	-	-	-	-	-	-	-	-	-	-	A. 2
		Lanc.III	18	17	-	-	-	1	-	-	-	-	-	1	M. 7
	8 MAIN FORCE	Hoaq.IV	3	3	-	-	-	-	-	-	-	-	-	-	-
		Hal.IIIV	3	2	-	-	-	-	1	-	-	-	-	-	-
		Hal.IA	11	10	1*	-	-	-	1	1	-	-	-	-	-
		Stir.I	3	3	-	-	-	-	-	1	-	-	-	-	-
	1	Lanc.I	4	3	-	-	-	1	-	-	-	-	-	-	-
		Lanc.III	14	12	-	-	-	2	-	-	-	-	-	-	-
	3	Lanc.I	21	18	1	-	2	-	-	-	1AC	-	-	1	-
		Well.X	88	80	2+2*	-	3	2	5	-	1X	-	-	6	-
	4	Stir.I	39	34	-	-	1	3	1	2+1C	1	-	-	2	-
		Stir.III	4	3	-	-	-	1	-	-	2C	-	-	-	-
	5	Lanc.II	92	75	3	-	-	8	6	10	1	1B+ 2AC+1	-	4	-
		Lanc.II	14	14	-	-	-	-	-	-	-	-	-	1	-
	6	Hal.IIIV	111	95	1	-	10	-	4	4	-	-	-	-	-
		Hal.IA	39	33	1	-	3	2	2	-	-	2E+1B +1C*	-	-	-
	7	Well.X	10	6	1	-	2	1	1	-	-	-	-	-	-
Lanc.I		31	26	-	-	5	-	4+1C	-	1B	-	-	5	-	
8	Lanc.III	103	89	-	-	12	2	9+1C	1AC*	2C+3	-	-	6	-	
	Hal.IIIV	41	36	-	-	1	1	1	-	1AC	-	-	3	-	
ESSEN TOTAL	Hal.IA	7	6	-	-	1	-	-	-	-	-	-	1	-	
	Well.X	18	14	-	-	3	1	1E	-	-	-	-	-	-	
ESSEN TOTAL			705	604	9+2*	8	61	23	1E+4C +3B	2+1C*	4E+2B +10AC +5	9	37		

* Also attacked Primary.

* Also hit by flak.

...../Contd:

005

ESSEN: COLOGNE: ELBERG: GELSENKIRCHEN: HANNOVER: LE PLATS: 25/26th. JULY, 1943.

TARGET	GROUP	TYPE	SORTIES	✓C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		PLAN	FIGHTER	NOT F/L	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E. Inc.
ESSEN TOTAL			705	604	9+2*	8	61	23	1E+4C +3B	2+1C*	4E+2B +10AC +5	9	37		
COLOGNE	8 PFF.	Hoaq.IV	3	3	-	-	-	-	-	-	-	-	-	P. 2.3 -	
ELBERG	8 PFF.	Hoaq.IV	6	6	-	-	-	-	-	-	-	-	-	P. 4.0 0.6	
GELSENKIRCHEN	8 PFF.	Hoaq.IV	3	1	-	-	2	-	-	-	-	-	-	P. 0.7 -	
BOMBING TOTAL			717	614	9+2*	8	63	23	1E+4C +3B	2+1C*	4E+2B +10AC +5	9	37		
HANNOVER FRISLUS	3	Stir.III	7	7	-	-	-	-	-	-	-	-	-	42 mines	
		Lanc.II	4	4	-	-	-	-	-	-	-	-	-	24 mines	
		Well.X	5	6	-	-	-	-	-	-	-	-	-	12 mines	
HANNOVER TOTAL			17	17	-	-	-	-	-	-	-	-	-	78 mines	
LE PLATS LE LUS	93	Well.III	2	2	-	-	-	-	-	-	-	-	-	-	
		Well.X	1	-	-	-	1	-	-	-	-	-	-	-	
LUSCH	93	Well.III	1	1	-	-	-	-	-	-	-	-	-	-	
		Well.X	2	2	-	-	-	-	-	-	-	-	-	-	
REINH	93	Well.Io.	1	1	-	-	-	-	-	-	-	-	-		
LE PLATS TOTAL			7	6	-	-	1	-	-	-	-	-	-	-	
TOTAL			741	637	9+2*	8	64	23	1E+4C +3B	2+1C*	4E+2B +10AC +5	9	37		

* Also attacked Primary.

* Also hit by flak.

RAID TRACK NOT AVAILABLE

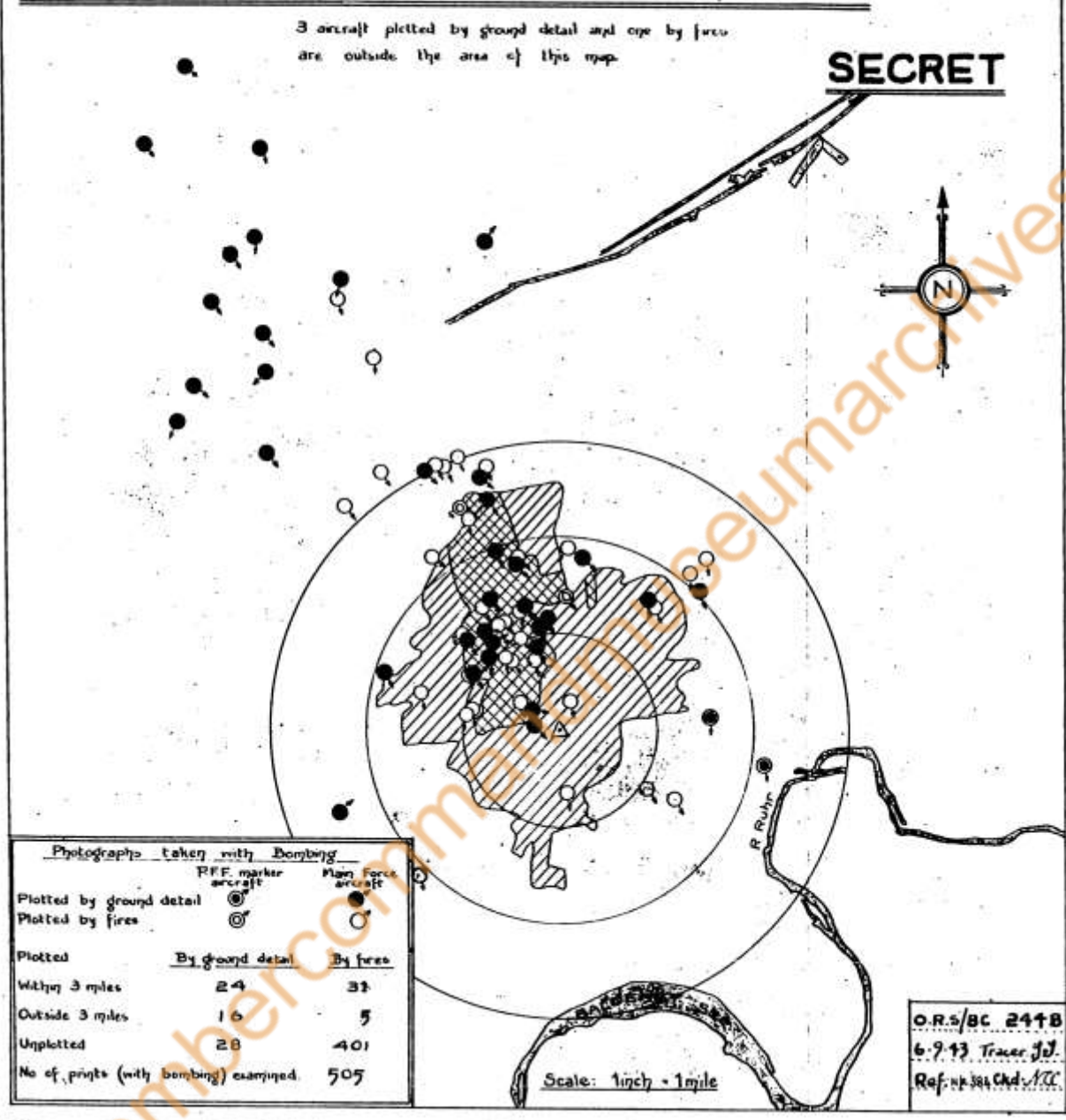
FINAL PLOT OF NIGHT PHOTOGRAPHS

407

TAKEN 25/26 JULY 1943. TARGET ESSEN

3 aircraft plotted by ground detail and one by fires are outside the area of this map.

SECRET



Photographs taken with bombing		
	R.F.F. marker aircraft	Main force aircraft
Plotted by ground detail	⊙	●
Plotted by fires	⊙	○
Plotted	By ground detail	By fires
Within 3 miles	24	31
Outside 3 miles	16	5
Unplotted	28	40
No. of prints (with bombing) examined	505	

Scale: 1 inch = 1 mile

O.R.S./BC 247B
6-9-43 Tracer J.S.
Ref. No. 384 Chd. V.C.C.

www.bombercommand.com www.bombingarchives.ca

BOBBER COLLAND REPORT ON NIGHT OPERATIONS, 26/27th JULY, 1943.Hamburg : Leaflets.SUMMARY.Hamburg.

1. 6 P.F.F. Mosquitoes were sent on a harassing raid against Hamburg. 4 attacked the city, where fires were still soon to be burning from the night of the 24th. The other two bombed Harburg and Westerhever. All returned undamaged.

Leaflets

2. 2 aircraft, out of a force of 3 despatched from Training Groups, dispersed leaflets over Chateaudun and Blois. The third returned early for technical reasons. No casualties were sustained.

Meteorological Forecast.

3. Bases:- Front at midnight from 60°N. 02°E. to Lincolnshire to Portland Bill, then south-westwards. Belt of low cloud, base 1-2,000', in several layers possibly with thunderstorms or slight rain. W. of front, cloud will break and lift. E. of front, broken medium and strato-cumulus. 3 and 8 Group fit for dusk take-off and for return.

Germany:- Small amounts of residual thundery cloud along N.W. coast, persisting inland with good clearances. Hamburg: probably no cloud, but thick haze.

France: Dispersing thunder cloud.

Sorties.

		<u>Hamburg</u>	<u>Leaflets</u>
4.	(a) No. of aircraft despatched.....	6	3
	(b) " " " reaching primary area.....	4	2
	(c) " " " alternative area....	2	0
	(d) " " abortive sorties (tech. defect).....	0	1
	(e) " " aircraft missing.....	0	0

Weather Experienced.

5. Hamburg:- 0-2/10ths cloud. Some haze. No moon.

France:- 7-10/10ths cloud, average tops 10,000'. Thick haze.

Enemy Defences

6. No opposition from fighters or ground defences was reported.

Casualties.

7. All our aircraft returned undamaged.

MM/JT/PVD.

BC/S.26342/4/ORS3.

25th September, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES NOT OVER Enemy TERRITORY.	MISSING	DAMAGE	INTER- CEPTIONS	RESULTS	
				PRIMARY AREA	ALTERNATIVE AREA					Tons of Bomb	
HALBURG	B P.F.F.	Mosquito IV	6	4	2	-	-	-	-	H.E.	Inc.
LEAFLETS										3.1	-
CHATELAIN	92	WELLINGTON III	1	1	-	-	-	-	-	1.6	-
BLOIS	92	WELLINGTON III	1	1	-	-	-	-	-		
TOURS	92	WELLINGTON III	1	-	-	1	-	-	-		
LEAFLET TOTAL			3	2	-	1	-	-	-		
TOTAL			9	6	2	1	-	-	-		

www.bombercommandmuseumarchives.ca

BOEBER COLLIERY REPORT ON NIGHT OPERATIONS 27/28th JULY, 1943.

HAMBURG : DUISBURG : MINELAYING : LEAFLETS.

SUMMARY

HAMBURG

787 aircraft were despatched to Hamburg, to follow up the remarkable attack delivered three nights earlier. Weather conditions were again good over the city, which was clearly visible despite a smoke haze rising to 20,000 ft. Another exceptionally concentrated attack was delivered, causing enormous damage. This time the districts of St. Georg, Billwarder Ausschlag and Grasbrock suffered most heavily. WINDON was used, and the loss of 17 aircraft out of a force of this size was again well below average. 4 enemy fighters were destroyed.

Duisburg.

3 Mosquitoes were sent on a harassing raid against Duisburg. 2 attacked the town, but the third did not return.

Minelaying

5 Wellingtons laid 9 mines in the Elbe estuary. A sixth returned early.

Leaflets

9 Wellingtons and Whitleys, out of a force of 11, dispersed leaflets over the districts of Orleans and Dreux. All returned safely.

Weather Forecast.

Midnight frontal positions:- (1) cold from 50°N. 07°E. to 55°N. 04°E. to the Bristol Channel, becoming (2) warm to Shannon.

Bases:- Cloud in several thin layers near the front, probably dissolving. Bases fit at dusk, with broken strato-cumulus above 2,000 ft and moderate to good visibility. Most Groups fit for return; 1 Group doubtful. Divisions to the west of the main Groups and E. Scotland.

Germany:- N.W. Coast: small amounts of thin medium cloud. Inland to 50°N. individual convection cloud, dispersing after midnight. Hamburg: probably cloudless, but from cirrus above 25,000 ft. Hazy. Route: thin and well-spaced layers of cumulus cloud between 12,000 and 20,000 ft dispersing towards German coast.

N.W. France:- Broken layer cloud at low and medium levels.

HAMBURG.

Route of Attack

Route: 5430N/0700E - 5407N/1025E - 5342N/1025E - TARGET - 5320N/0930E - 5420N/0700E.

Method.

- (a) T.I. yellow route markers 5418N/0840E by 9 of the blind markers, backed-up by 4 of the recontrons and 14 of the backers-up.
- (b) T.I. yellow route markers 5352N/1025E by 6 of the blind-markers, backed up by 2 of the recontrons and 6 of the backers-up.
- (c) 25 Blind-markers to mark target, by H2S only, with T.I. yellow.
- (d) 49 Backers-up to aim green T.I. at centre of yellow T.I. concentration with an overshoot of 2 secs.

- (e) 11 Recentrers spread evenly after Z+15 to drop green T.I. on H2S, otherwise to act as backers-up.
- (f) Main Force a/c to aim at the centre of the concentration of all T.I.s. visible (yellow and green).
- (g) T.I. yellow route markers 5340N/0837E by 5 of the blind-markers backed up by two of the recenterers and 13 of the backers-up.

8. Timing. - Zero Hour: 0100 hours. Period of Attack: 0057 - 0145 hours.

Blind Markers 25 a/c at (Z-3)

Backers-up.

Recenterers.

Main Force

			Approx. No.
(Z+2) + (Z+3) : 6 a/c (3 per min)	1 a/c at:-	1st wave (Z+2) - (Z+9)	105
(Z+4) - (Z+7) : 8 a/c (2 per min.)	(Z+15)		
	(Z+18)	2nd wave (Z+9) - (Z+16)	105
(Z+8) - (Z+11) : 34 a/c	(Z+20)		
	(Z+23)	3rd wave (Z+16) - (Z+24)	113
(alternately at 1 per min. and	(Z+25)		
2 per min., except at times of	(Z+28)	4th wave (Z+24) - (Z+31)	111
recenterers).	(Z+30)		
(Z+42) 1 a/c	(Z+33)	5th wave (Z+31) - (Z+38)	111
	(Z+35)		
	(Z+38)	6th wave (Z+38) - (Z+45)	108
	(Z+40)		653

9. Bomb Loads.

Blind Markers

4 Lanc:- 2 T.I. yellow LB + 1 T.I. yellow) + 1 x 4000 H.C. + 3 x 1000 H.C.
8 Lanc:- 3 T.I. yellow LB + 1 T.I. yellow	
3 Lanc:- 2 T.I. yellow LB + 2 T.I. yellow	
8 Hal:- 3 T.I. yellow LB + 1 T.I. yellow) + 6 x 500 H.C. + 1 x 1000 G.P. (LD)
2 Hal:- 2 T.I. yellow LB + 2 T.I. yellow	

Recenterers and Backers-up

20 Lanc:- 1 x 4000 H.C. + 3 x 1000 G.P. (LD)	) + 1 T.I. yellow LB + 2 T.I. green LB + 3 T.I. green
15 Hal:- 6 x 500 H.C. + 1 x 1000 G.P. (LD)	
6 Stir:- 5 x 500 H.C.	
19 Lanc:- 1 x 4000 H.C. + 3 x 1000 G.P. (LD)	) - 2 T.I. green LB + 3 T.I. green.

10. Tactics.

WINDOY was to be used. Dropping rate: one bundle per minute.
Zone of dropping - 5427N/0735E back to 5415N/0715E.

Sorties

11. (a) No. of aircraft despatched.....	787
(b) " " reporting attack on primary area.....	722 (91.7)
(c) " " " " alternative area.....	4 (0.5)
(d) " " abortive sorties (technical defect)	
(or manipulative error....41)	
(hit by flk..... 1).....	44 (5.5)
(sickness of crew..... 1)	
(collided with British a/c. 1)	
(e) " " aircraft missing.....	17 (2.2)

° also attacked primary.

Weather Experienced

2. Bases:- Fit all night, with small amounts of layer cloud and moderate visibility. Fog and low stratus affected S.W. of 91 Group by 0300 and covered west of 91 and 92 Groups by dawn.

Route:- Much layer cloud in W. North Sea, increasing to 10/10ths in frontal belt about 05°E, mainly in layers to above 20,000 ft., with occasional solid patches of cumulo-nimbus. Some reports of slight static and rimo. Z. of 8°E., variable patches of layer cloud, dispersing towards German coast. Contrails between 15,000 ft., and 20,000 ft. in frontal zone.

Hamburg:- Small amounts of thin cloud, with much smoke haze to 20,000 ft. Moon. Wind at 20,000 ft.: 240°/15 m.p.h.

Night Photographic Evidence.

No. of photographs examined.....	622
No. of photographs (plotted within 3 miles.....)	33
showing ground detail (plotted outside 3 miles.....)	47
(unplotted.....)	18
No. of photographs showing fire tracks only	
(plotted within 3 miles.....)	238
(plotted outside 3 miles.....)	194
(unplotted.....)	92
No. of aircraft reporting attack.....	722
" " " estimated from photographic evidence, to have bombed within 3 miles of the aiming point.....	325

Narrative of Attack

1. Between Zero - 5 and Zero, 15 salvos of Yellow T.I. were dropped by the Wind Markers which, except for two or three strays, were exceptionally well concentrated in the Billwarder district from 1½ to 3 miles E.S.E. of the aiming point. The Main Force were early on the target; by Zero + 2, 87 aircraft had landed, and a good concentration was building up around the Yellow T.Is., with a little scattered bombing to the north and south.

2. The preliminary marking finished at Zero + 6, after which almost all the bombing was aimed at the Green T.Is dropped by the Backers-up. By Zero + 12, large fires were burning in the Billwarder - Ausschlag district, and the secondary carpet had spread as far westward as the central city area and as far north as the suburb of Hamm, on the eastern outskirts of the city, and St. Georg and Uhlenhorst adjoining the eastern side of the Ausson Alster. As the raid progressed, the bombing drifted further eastwards and, by Zero + 20, the main area of bombing was centred 3½ miles due east of the aiming point. There was little evidence of creep-back, although a few isolated sticks of incendiaries fell between 10 and 15 miles south of the target.

Reconnaissance

1. Reconnaissance photographs covered nearly the whole city of Hamburg. More than half the total area was obscured by cloud, smoke or shadow, but it was evident that enormous damage had been caused, especially in the districts of St. Georg, Billwarder Ausschlag and Grasbrook. In St. Georg, particularly, scarcely a building escaped unscathed, and in both that district and Billwarder Ausschlag damage to commercial and industrial property was on a phenomenal scale. The following works are known to have been hit: Ebene Asphaltwerke A.G. (priority 1+), Germania Ossag Mineraloelwerke A.G. (priority 1), H. Sieg, Altona (metal and aluminium castings), Sub-station Electricitatzwerke, Hamburg Amerika Linie (equipment stores), Norddeutsche Oelmuhlenwerke A.G., Hansa Motorenfabrik, Norddeutsche Grossbohrzinkerei and Verzinnererei, Ivon Hansen (textiles), the railway power station, Hermann Michaelson (iron and steel castings), the town gasworks and

two tram depots.

17. Damage to municipal and residential property was even more severe, notably to the main railway station, Holsten Str. railway station, the navigation school, the provincial appeal court, the institute of tropical hygiene and the goods station at Altona.

18. No account has hore been taken of damage caused in previous raids by the R.A.F. and U.S.A.A.F.

Alternative Targets

19. 4 aircraft resorted to alternative targets, in the areas of Kiel, Rendsburg, Neumunster and St. Peter's Head (in N.W. Germany). 2 aircraft which attacked the primary target also dropped bombs 5 miles N.W. of Hamburg and 10 miles E. of Wesermünde respectively.

Special Equipment

20. H2S:- 70 Y-aircraft were despatched; 25 blind-markers, 11 recontrors and 34 Main Force aircraft, using H2S for purely navigational purposes. 21 of the blind-markers reported attack, but 6 of those dropped no T.I. 9 aircraft markers blind on H2S, and 4 others bombed on H2S with a visual check. The Blind-markers were well timed and finely concentrated 1/2 to 3 miles E.S.E. of the aiming-point. All but one of the 11 recontrors attacked. 7 dropped markers on H2S, either blind or with a visual check. The other three found their equipment unserviceable. 28 Main Force aircraft reached the target with their sets in order. One Y-aircraft was lost.

21. GEE:- The Eastern Chain operated on the Wyoming frequency throughout, and on the Arizona frequency from 0000 to 0200 hours. 266 aircraft received GEE fixes over the target and the average range was 463 mil.s. The jamming on the Wyoming frequency was unchanged, and there were many reports of morse interference, similar to the effects of TINSEL, on the Arizona frequency. All signals were strong, C being the weakest.

Defences

22. Flak and Searchlights. The general opinion of crews indicated that enemy ground defences at Hamburg had been increased since the previous attack. The usual decrease in intensity during the attack was reported but the number of aircraft damaged by flak was fairly constant throughout the raid. Much of the flak was considered to be of barrage form. Some reported instances of aircraft held in searchlight cones but not engaged by flak suggest searchlight cooperation with fighters. As on the previous WINDOW raids, searchlights appear to have experienced considerable difficulty. On the way in the bombers found the Neumunster-Kiel area well defended, and on the return the defences at Bremerhaven were active. 29 aircraft were damaged by flak.

23. Fighters. The R/T traffic intercepted on this night was, from some areas of a different nature from that which is usually heard. Instead of the usual brief instructions as to course and height, ground stations were heard to give something of a running commentary regarding the course and height of British aircraft, and information about their being held in searchlights. The conclusion to be drawn is that the enemy had decided to use a system of much looser control of his fighters when interference from WINDOW made it necessary. In the traffic heard there were several direct references to the fighters flying without ground control.

24. Some remarks indicate that the enemy was placing considerable reliance on the use of A.I. It would appear therefore that WINDOW was not having as serious an effect on the enemy A.I. as had been hoped. The number of night fighters heard by wireless intelligence on this night was 80, in the traffic of 26 of which British aircraft were mentioned. The total number is somewhat less than on the first Hamburg night but the number in whose traffic British aircraft were mentioned is about the same.

25. Crows reported 82 interceptions (10.4% of sorties) of which 15 developed into attacks (1.9% of sorties) and in a further 29 cases the bomber opened fire. 3 interceptions on the outward journey, 2 of them attacks, occurred outside the WINDOW area. Fighters were very active over the Rendsburg and Spieka areas. It may be significant that markers were dropped near Spieka on the homeward route. 4 interceptions occurred at the turning point on the way home near Wenzendorf and 7 over the North Sea.

26. The aircraft bombing in the last part of the attack experienced a larger proportion of the total encounters, although less aircraft bombed in this period. There were few encounters in the target area in the earlier part of the attack and only one aircraft, a Wellington, had an encounter during the period when the Stirlings bombed. Interceptions en route were most frequent among the aircraft of the later waves but this was not so marked as it was over Hamburg, nor was the reduction of fighter activity during the Stirling wave so noticeable.

Casualties

27.	No. of aircraft missing.....	17 (2.2%)
	" " " " damaged by (a) flak.....	38 (4.8%)
	(b) fighters.....	4 (0.5%)
	(c) incendiary bombs..	2 (0.3%)
	(d) other causes.....	5 (0.5%)
		49 (6.2%)

Analysis of the reports of crows relating to aircraft shot down indicates that 40 aircraft were seen hold by searchlights before being destroyed. Of these it is likely that 6 were shot down by flak and 3 by fighters. Outward losses due to flak probably occurred at St. Peter, Rendsburg, Hoido and over the Floner Lake while fighters were seen to destroy one at St. Peter, one at Tanning and one at Neumunster, where another aircraft was also seen shot down, but the cause is not known. In the target area flak probably accounted for 3 and fighters for 2 aircraft. 2 homebound bombers were seen shot down by fighters at Wesermunde and over the North Sea, where another aircraft was seen to fall in flames. The observations of crows suggest that enemy fighters were destroyed at Rendsburg, Neumunster and Hamburg. 2 enemy aircraft were claimed destroyed, one at Rendsburg and one at Hoido, and 5 were claimed as damaged at Rendsburg, near Neumunster, south west of Hamburg, off Cuxhaven and out to sea some 60 miles off Bremerhaven. It seems probable therefore that 4 were destroyed and a further 3 damaged.

28. One aircraft engaged by an enemy fighter 20 miles west of Wenzendorf while outbound made a forced landing in England.

DUISBURG.

29. 3 P.P.P. Mosquitoes were detailed on a harassing raid against Duisburg. 2 bombed the primary, and returned undamaged. The third was missing without trace.

MINELAYING

30. 5 Wellingtons, out of a force of 6 despatched by 6 Group, laid 9 mines in the Elbe Estuary. All returned undamaged.

Leaflets.

31. 9 Wellingtons and Witleys, out of a force of 11 despatched by 93 Group, dispersed leaflets over Paris, Orleans and Dreux. Accurate flak was encountered from several points, and 3 aircraft were hit; but none was lost and no casualties were sustained.

MIR/PVB.
DC/S. 26342/3/ORS.
11th October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISS. INC.	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA	ALT. AREA	OVER EN. TERRIT.	NOT OVER EN. TERR.		PLAK	FIGHTER	NOT E/A	ATTACKED	NOT ATTACHED	
HAMBURG	8 P.P.F.	STIR. I.	4	4	-	-	-	-	-	-	-	-	(P) 110.9 1243.1	
		STIR. III	2	2	-	-	-	-	-	-	-	1	(A) 10.3 5.9	
		HAL. II & V	2	2	-	-	-	-	-	-	-	-	-	(B) 29.9 31.2
		LANC. I _a	23	20	-	3	-	-	-	-	-	-	1	
	8 MAIN FORCE	LANC. I	5	5	-	-	-	-	-	-	-	-	-	
		LANC. III	46	43	-	1	2	1 AC	-	-	-	3	-	
		STIR. I.	3	3	-	-	-	-	-	-	-	-	-	
		HAL. II & V	4	4	-	-	-	-	-	-	-	-	-	
	1	LANC. I _a	6	6	1 ^o	-	-	-	1	-	-	-	-	Heavy Bombs
		LANC. I.	2	2	-	-	-	-	-	-	-	-	-	8,000 4,000
		LANC. III	10	10	1 ^o	-	-	-	1	-	-	-	-	(P) 7 323
	3	LANC. I _a	23	20	1	-	2	-	1	-	-	-	4	(A) - 4
LANC. III		95	88	1	-	3	3	2	1 AC	1 AC	1	10	(B) - 11	
WELL. X.		41	39	1	-	1	-	-	-	-	1	3		
4	STIR. I	5	3	-	-	2	-	-	-	-	-	-		
	STIR. III	102	95	1	1	4	1	2E + 4	1 AC	1 AC	1	2		
5	LANC. II	17	15	-	-	2	-	-	-	-	1	3		
	HAL. II & V	110	102	-	-	5	3	3	1E+1 AC	1	6	4		
6	HAL. I _a	39	36	-	-	3	-	3	-	-	-	6		
	WELL. X.	15	15	-	-	-	-	-	-	-	-	1		
7	LANC. I	36	30	-	-	2	4	2	-	-	2	4		
	LANC. III	19	11	-	-	6	2	5	1 AC	4D	2	13		
8	HAL. II & V	50	45	-	1	3	1	-	-	2 AC	1	9		
	HAL. I _a	10	10	-	-	-	-	-	-	-	-	2		
9	WELL. X	18	12	-	-	5	1	-	-	-	-	1		
	TOTAL	797	722	4+2 ^o	2	42	17	2E+1AC+26	1E+4AC	2E+1AC+1	15	67		

^o Also Attacked Primary.

HAMBURG DUISBURG BIELEFELD Loadlots 27/28th July, 1943.														
TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISS. INC.	DAMAGE			INTERCEPTIONS		RESULTS
				PRIM. AREA	ALT. AREA	OVER EN. TERRIT.	NOT OVER EN. TERR.		PLAK	FIGHTER	NOT E/A	ATTACKED	NOT ATTACHED	
HAMBURG TOTAL			767	722	4 + 2 ^o	2	42	17	2E + 1AC + 26	1E + 4 AC	2E + 1AC + 1	15	67	
DUISBURG	8 P.P.F.	LOS IV	3	2	-	-	-	1	-	-	-	-	-	
B-O-M-B-I-N-G T-O-T-A-L			790	724	4 + 2 ^o	2	42	18	2E + 1AC + 26	1E + 4 AC	2E + 1AC + 1	15	67	
BIELFELD	6	WELL. X.	6	5	-	-	1	-	-	-	-	-	-	9 mins
BRUXELLES	93	WHITLEY V.	2	2	-	-	-	-	1AC	-	-	-	-	
BRISANS	93	WELL. X.	4	4	-	-	-	-	-	-	-	-	-	
PARIS	93	WELL. I _a	5	3	-	-	2	-	2	-	-	-	-	
L-E-A-P-L-E-T T-O-T-A-L			11	9	-	-	2	-	1AC+2	-	-	-	-	
TOTAL			807	738	4+2 ^o	2	45	18	2E+3AC+28	1E+4AC	2E+1AC+1	15	67	

^o Also Attacked Primary.

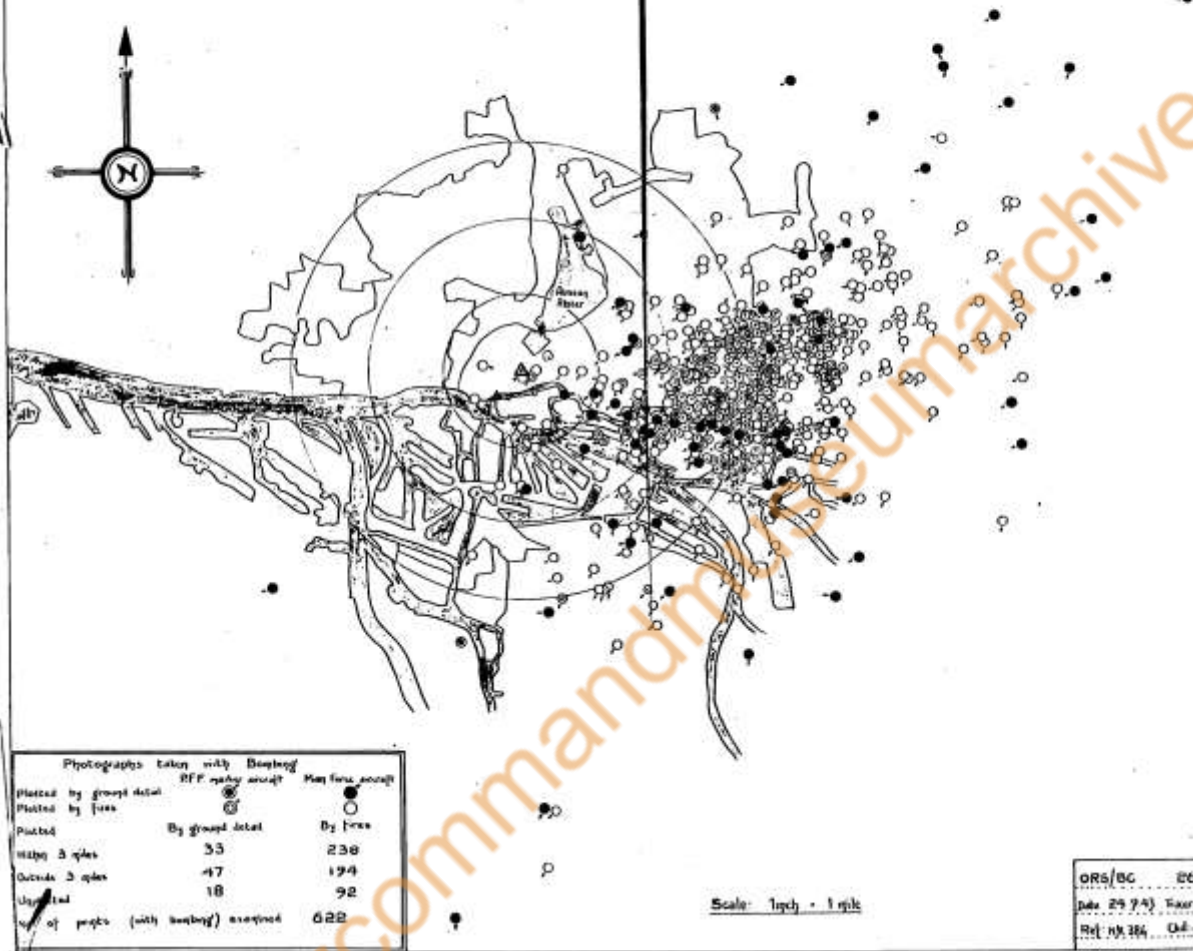
RAID TRACK NOT AVAILABLE

FINAL PLOT OF NIGHT
TAKEN 27/28 JULY 1943

PHOTOGRAPHS
TARGET: HAMBURG.

414

SECRET



Photographs taken with Douglas		
	BFP night scout	May fire scout
Plotted by group detail	⊙	●
Plotted by fire	⊖	○
Plotted	By group detail	By fire
Inside 3 miles	53	238
Outside 3 miles	47	194
Unplotted	18	92
Total		622
No. of prints (with bombing) examined		

Scale: 1 inch = 1 mile

ORS/BC 261B
Date 29.7.43 Page 30
Ref. HK 184 O.E. 1

www.bombercommand.com

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 28/29th. JULY, 1943.Dusseldorf: Hamburg: Minelaying: Leaflets.SUMMARYDusseldorf: Hamburg

1. 7 Mosquitoes of P.P.F. carried out harassing raids on the towns of Dusseldorf and Hamburg, where fires were still burning from previous attacks. All returned undamaged.

Minelaying

2. 16 Stirlings and Lancasters, out of a force of 17, laid 94 mines off the Frisian Islands. One was damaged by light flak from a convoy, but all returned to base.

Leaflets

3. 3 Wellingtons, out of a force of 4, dispersed leaflets over Cherbourg, Granville and St. Malo without loss.

Weather Forecast

4. Midnight frontal positions:- (1) cold from 57°N. 15°E to 54°N. 05°E., becoming (2) warm from 54°N. 05°E to 54½°N. 00½°W. (3) occluded from 59°N. 00° to 54½°N. 00½°W., becoming (4) cold to Bristol Channel to 49°N. 10°W. etc.

Bases:- Local thunderstorms along cold front. Cloud will break and lift to the N.W., but may persist to the S.E. Fog will form towards dawn in S.W., with stratus. 8 and 3 Groups: fit until 0400, with visibility 2 miles, then local fog.

Germany:- Residual convection cloud inland, dispersing to small amounts after midnight. Hamburg: half-covered with medium cloud. Ruhr: clear skies.

France:- As Germany.

Frisians:- Well broken high and medium cloud, visibility probably 1-2 miles, but risk of fog patches.

SortiesBombingMinelayingLeaflets

5.	(a)	No. of aircraft despatched.....	7	.....	17	.....	4
	(b)	" " " marking primary area.....	7	.....	16	.....	3
	(c)	" " abortive sorties (technical defect).....	0	.....	1	.....	1
	(d)	" " aircraft missing.....	0	.....	0	.....	0
	(e)	No. of mines laid.....		.....	94	.....

Weather Experienced

6. Dusseldorf:- No cloud. Much haze. Good visibility.

Hamburg:- No cloud, apart from 3/10ths. cirrus at 24,000'. Haze and smoke. Good visibility.

Frisians:- No cloud. Thick haze. Variable visibility - good to poor.

N.W. France:- 3-4/10ths. stratus. Hazy.

No moon during operations.

.... / Enemy Defences

Enemy Defences

7. Controlled fighters were active in N.W. Germany and Holland but only one was sighted by our bombers, a Ju.88 over Terschelling. At both Hamburg and Dusseldorf, moderate heavy flak was accurately predicted at heights above 25,000'. Aircraft were held in searchlight cones at both targets, one for 4 minutes over Dusseldorf at 29,000'. Minelayers encountered flak from the usual points on the Frisian Islands, and one sustained minor damage from a convoy of 20 ships in enemy waters.

Casualties

8. Apart from one instance of minor damage from light flak, all our aircraft returned undamaged.

HLH/JT.
BC/S. 26342/1/ORS3.
28th. September, 1943.

DUSSELDORF: HAMBURG: Minelaying: Leaflets: 28/29th. July, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		ABORTIVE SORTIES		MISSED	DAMAGE			OTHER OPTIONS		RESULTS		
				PRIDE AREA	REL.	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER E/.	NOT E/.	ATTEMPT- ED	NOT ATTEMPT- ED	Tons of Bombs	H. E. Inc.	
DUSSELDORF	8 PFF	Moag. IV	3	2	-	-	-	-	-	-	-	-	-	-	P. 2.3	
HAMBURG	8 PFF	Moag. IV	4	4	-	-	-	-	-	-	-	-	-	-	P. 3.1	
DOMBING TOTAL			7	7	-	-	-	-	-	-	-	-	-	-		
MINELAYING FRISLANDS			3	3	-	-	1	-	1	-	-	-	-	-	16 mines	
				12	-	-	-	-	-	-	-	-	-	-	66 mines	
				2	-	-	-	-	-	-	-	-	-	-	12 mines	
MINELAYING TOTAL			17	16	-	-	1	-	1	-	-	-	-	-	94 mines	
LEAFLET BOARDS			92	1	-	-	1	-	-	-	-	-	-	-		
GR. WILHELM			92	1	-	-	-	-	-	-	-	-	-	-		
ST. MALO			92	1	-	-	-	-	-	-	-	-	-	-		
CHERBOURG			92	1	-	-	1	-	-	-	-	-	-	-		
LEAFLET TOTAL			4	3	-	-	1	-	-	-	-	-	-	-		
TOTAL			28	26	-	-	2	-	1	-	-	-	-	-		

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 29/30th. JULY, 1943.

HAMBURG: DUSSELDORF: MINELAYING: LEAFLETS:

SUMMARY

HAMBURG

1. The third of the great July attacks on Hamburg was delivered by 699 aircraft, out of a total force of 777. The target was again clear of cloud, although obscured by smoke from the many fires still burning. Bombing was more scattered than in previous attacks, but a great weight fell in the built-up area, causing extensive devastation in the N.E. districts, which had formerly escaped serious damage. 27 bombers were lost - a higher figure than the corresponding ones for earlier WINDOW raids, but still remarkably moderate for so important a target. 3 fighters are known to have been destroyed, and 2 others were seen to crash in flames.

Dusseldorf

2. 4 P.F.F. Mosquitoes carried out an uneventful harassing raid on Dusseldorf.

Minelaying

3. 4 Wellingtons, out of a force of 6, laid mines in the Elbe estuary at the beginning of the main attack on Hamburg.

Leaflets

4. 12 aircraft dispersed propaganda leaflets without loss, 9 over Italy and 3 over France.

Weather Forecast

5. Feeble cold front at midnight from 58°N. 12°E to 55°N. 11°E. to 50°N. 00°W to 48°N. 05°W.

Bases:- Mainly fit all night, with visibility above 2,000 yards, except very near the coast and in smoky localities. Local thunderstorms in evening. Fog patches towards dawn in E.

Germany:- Little cloud inland. Industrial haze. Hamburg and Ruhr: small amounts of cloud, apart from cirrus above 25,000'. Little or no surface wind.

France:- Little cloud. Fog patches over W. coast.

N. Italy:- Little cloud. Visibility 2-4 miles.

HAMBURG

Plan of Attack

Route:- 5430N/0700E - 5403N/0944E - TARGET - Turn right - 5323N/0938E - 5420N/0700E.

Method:- Ground Marking.

(a) Route markers T.I. rod, augmented by one flare red, as an additional distinction, were to be dropped at 5415N/0850E by 7 of the blind markers, backed up by 13 of the backcore-up.

...../(b) 25 blind markers

- (b) 25 blind markers were to mark the aiming point with T.I. yellow.
- (c) 49 backers-up were to maintain the marking with green T.I.
 (i) Early arrivals to aim at the centre of the yellow T.I. with 4 sec. overshoot.
 (ii) Later arrivals to aim at the centre of the green T.I. with 2 sec. overshoot.
- (d) 12 recentrers to aim at T.I. green on H2S if serviceable.
- (e) Main Force to aim at centre of all green and yellow T.I.
- (f) Route markers T.I. red and one flare red were to be dropped at 5340N/0848E on the route home.

8. Timing Zero hour 0045 hours. Period of Attack 0042 - 0132 hours.

Blind Markers 25 a/c at (Z - 3)

<u>Backers up</u>	<u>Recentrers</u>	<u>Main Force</u>	<u>Approx. No. A/C.</u>
<u>A/C per min. interval</u>			
(Z+1).....6	(Z+12)-(Z+40)	1st.wave (Z+2)-(Z+9)	110
(Z+2).....3	1 a/c per min.	2nd.wave (Z+9)-(Z+17)	117
(Z+3), (Z+4).....2,2	at intervals of	3rd.wave (Z+17)-(Z+25)	115
(Z+5), (Z+6).....1,1	backers-up.	4th.wave (Z+25)-(Z+32)	104
(Z+7).....2		5th.wave (Z+32)-(Z+40)	110
(Z+8), (Z+10).....1,1		6th.wave (Z+40)-(Z+47)	108
(Z+11).....2			
(Z+13), (Z+14).....1,1	12 a/c		664 a/c.
(Z+16), (Z+19).....1,0,2,1.			
(Z+21), (Z+24)....."	<u>Non-marking P.P.F.</u>		
(Z+25), (Z+29)....."	23 a/c at Z+3		
(Z+31), (Z+34)....."	3 a/c at Z+20		
(Z+36), (Z+39)....."	26 a/c.		
(Z+41), (Z+45).....1			
	49 a/c.		

9. Markers Carried

Blind Markers

- 13 Lanc. + 2 Hal. : 1 T.I. red LB + 2 T.I. yellow LB + 3 T.I. yellow + 1 flare red steady.
- 4 Lanc. + 6 Hal. : 2 T.I. yellow LB + 3 T.I. yellow.

Recentrers and Backers-up

- 24 Lanc.+ 10 Hal. : 2 T.I. green + 3 T.I. green LB.
- 2 Lanc. : 2 T.I. yellow LB + 3 T.I. yellow
- 17 Lanc.+ 5 Hal. : 1 T.I. red LB + 1 flare red steady + 2 T.I. green LB + 3 T.I. green.
- 2 Lamp.+ 6 Stir. : 1 T.I. red LB + 2 T.I. green LB + 3 T.I. green.

All to carry H.E. in addition.

10. Tactics

(a) WINDOW To be dropped at the rate of one bundle per minute from 5427N/0735E to Target and back to 5410N/0730E.

(b) "Spooft" Markers 4 Mosquitoes were to drop T.I. yellow at 5333N/0733E for a period of approx. 20 mins. to attract enemy fighters. Crews to be warned to avoid this position.

(c) Wind 8 of the Blind markers were to report by W/T, as early as possible the wind found, between last GEE fix and first fix by H2S. This information was to be

...../retransmitted to the

transmitted to the Main Force, at one of the following times: (Z-10), (Z), (Z+10), (Z+20).

(d) Ground Defences Non-marker P.F.F. carrying 500 MG bombs were to use some of these to discourage the defences on the way in.

Sorties

(a)	No. of aircraft despatched.....	777
(b)	" " " reporting attack on primary area.....	699 (90.0%)
(c)	" " " " alternative area.....	4 (0.5%)
(d)	" " abortive sorties (technical defect of	
	manipulative error.....	39
	(sickness of crew.....	3
	(pilot's error.....	2
	(bombs hung up.....	2
	(hit by flak.....	1
(e)	" " aircraft missing.....	27 (3.5%)
	+ also attacked primary.	

Weather Experienced

Bases:- Clear till 0400, with moderate visibility; then a few mist and fog patches.

Route:- Variable amounts of cloud, 10/10ths. at times, tops 3-5,000'. Very little cloud beyond Danish coast. Hazy.

Winds: at 8-10,000', 260°/15 - 20 m.p.h.
at 17-19,000', 270-290°/30 m.p.h.
at 22,000', 270°/40 m.p.h.

Hamburg:- No cloud. Hazy. Visibility good, but hampered by smoke. No moon. Wind: at 19,000' : 250-270°/25 m.p.h. Surface wind: very light, probably S.W. by E.

Night Photographic Statistics

No. of photographs examined.....	619
" " " showing ground detail,..	{plotted within 3 mls....37
	{ " outside 3 mls....77 }143
	{ unplotted.....29
" " " fire-tracks only.	{plotted within 3 mls...170
	{ " outside 3 mls...247 }476
	{ unplotted..... 59
" " aircraft reporting attack.....	699
" " " estimated to have bombed within 3 miles of aiming-point.....	238

Narrative of Attack

The attack was opened by the blind-markers, 16 of which dropped their yellow T.I. between zero-8 and zero + 1. Although the timing was good, the standard of accuracy was low and the yellows were scattered over a wide area on the eastern side of Hamburg, with the mean point of impact (M.P.I.) about 2-3 miles due west of the aiming-point. The backers-up commenced their attack at zero - 2, most of the early ones over-shooting the M.P.I. of the yellows as instructed, and dropping their greens 3-3½ miles E.S.E. of the aiming-point. The main force bombing was at first principally concentrated in an area 3 miles E.N.E. of the aiming-point, slightly short of the main concentration of markers. There was also scattered bombing in the districts lying immediately to the east of the Aussen Alster, but very little S. of the Elbe, or on the western side of the city.

There is little evidence to show where those backers-up and recontrors which backed after zero + 7 dropped their T.I., but they seem to have been successful in preventing any extensive backward drift of the attack. The bombing remained centred/about 3 miles E.N.E.,

about 3 miles E.N.E., although tending to spread over a larger area. By seven o'clock an area of 24 square miles was covered with incendiaries.

Day Reconnaissance

16. A reconnaissance sortie flown 2 days after the attack found the town covered with smoke that no useful information could be obtained, except that a now and very extensive area of devastation was apparent in the N.E. of the town. Photographs taken on the subsequent afternoon showed many fires still burning, the smoke had sufficiently dispersed for the town to be clearly seen for the first time since the attack of 27/28th. July. It is not everywhere possible to distinguish the results of the various attacks, but that now under review appears to have fallen most heavily on the N.E. and S.E. The districts of Wandbeck, Hammerbrook, Hamm, Horn and Borgfeld were devastated, while those of Bernbeck, Steilshoop, Uhlenhorst and Winterhude had been very severely affected. No fresh instances of damage to high priority industrial plants could be identified but many subsidiary factories had suffered, including Hamburger Gaswerke, Hamburg Margarine Werke, Julius Tester (chemical cleaners), Heidenrich und Harbeck (machine tools), Triton Belco A.G. (sanitary engineers), Von Hacht (boat fitting), Triton und Calmon Gummiwerke A.G. (rubber), Hans Havenschild (chemicals) and Kampnagel A.G. (engineering). 2 railway stations, much railway property (including rolling stock) and 2 tram depots were damaged. 2 road bridges had been destroyed at Wandbeck and many public buildings had been hit.

Special Equipment

17. H2S 67 Y-aircraft were despatched - 25 blind-markers, 11 reconcentrators and 31 main force aircraft, using H2S for navigational purposes only. 22 of the blind-markers reported attack; 19 dropped markers, 17 of these on H2S. The accuracy was poor and the markers were scattered over a wide area on the E. side of Hamburg. All the 11 reconcentrators reached the target, and 9 released T.I., but only 6 of these did so on H2S. 21 of the 31 main force Y-aircraft reported target sets as having been serviceable through only the journey; 2 attacked blindly on H2S and 2 others used it to check their positions at bombing. 4 Y-aircraft were lost.

18. GEE The Eastern Chain operated on the Wyoming frequency throughout, as on the Arizona frequency from 2345 to 0145 hours. GEE was received over the target by 374 aircraft, and the average range was 463 miles. The interference was the same as on the previous night for both frequencies. The results were even better than on 27/28th. July, and all signals were strong, especially B,

Alternative Targets

19. 4 aircraft attacked alternative targets, in the areas of Hemmingstedt (Wosselburen and Neumanster). A fifth, which went on to attack the primary, jettisoned 2 H.E. bombs near Wenzendorf after being hit by flak.

Defences

20. Flak and Searchlights Flak was more intense over Hamburg than on 27/28th. July, starting strongly in co-operation with searchlights but then easing off noticeably. It was mostly fired in barrage, but sometimes predicted and sometimes against illuminated targets. The number of searchlights had been greatly increased, both en route and in the target area; an outer belt stretched in a semi-circle round the town from N.E. to S.W., and inside this, other searchlights apparently acted as fighter guides, sometimes exposing horizontal lines for track indicating or possibly to silhouette attacking bombers.

21. On the outward route, the strongest defences were centred at Neumanster, with lighter support to the S. of Kiel. Hombound bombers encountered intense fire in the Spicka-Nordholz-Midlum area. The guns of Bremerhaven, Wenzendorf and Cuxhaven were also active.

22. 23 aircraft were damaged by flak, 15 of these in the target area.

Fighters 94 interceptions by enemy fighters were reported, including attacks. Roughly half of the total number occurred on the homeward route, a quarter on the outward journey and one quarter in the target area. Most of the fighters operated in a height band from 17-20,000', in which 70% of the interceptions occurred. This is explained by the new technique of limited ground control which the enemy had been forced to adopt. Fighters were given general instructions regarding the course and height of British aircraft, rather than specific details to enable them to intercept particular aircraft. Some were seen to have landed, refuelled and taken off again - an unusual procedure, but one which would be encouraged in a free-lance system. 6 aircraft were damaged by fighter attack. 3 fighters were claimed as destroyed, and 2 others were probably shot down, one crashing off Høligoland, together with the bomber it was attacking, and another off St. Peter's Point.

Casualties

No. of aircraft missing.....	27 (3.5%)
" " " damaged (flak.....23)	
{ fighter..... 6	}..... 43
{ British incendiaries..... 6	
{ other causes..... 8	

Crews' observations suggest that 7 aircraft were shot down by flak - 6 over Hamburg and one over Bremerwerde. All had previously been coded by searchlights. 11 were probably destroyed by fighters - 3 outbound over the sea (including one off Høligoland), 4 over Hamburg, one 15 miles W. of Hamburg, one over Spieka, one off Cuxhaven and one at the mouth of the Elbe. Another was seen to go down at Cuxhaven, but the cause is not known.

The loss percentage (3.5%) though higher than on previous WINDOW raids, compares favourably with the 6.1% average for raids against Hamburg in the previous year. Damage due to flak and fighters remains at just over one-third of the previous average. Interceptions were more numerous than in previous WINDOW raids (10.0% against 8.7%), probably because of the activity of freelance fighters, but attacks fell from 2.6% to 2.0%.

One Stirling and one Lancaster crashed while taking off, and were destroyed. The body of one of the crew of a Halifax, previously reported as missing, was picked up in the North Sea by Air/Sea Rescue. The cause of this loss is unknown.

DUSSELDORF

4 P.F.F. Mosquitoes carried out a harassing raid on Dusseldorf. The target was clear of cloud, and all crews saw their bombs fall in the built up area. All returned undamaged.

MINELAYING

6 Wellingtons of 4 Group were detailed to lay mines in the Elbe Estuary at the start of the main attack on Hamburg. Haze prevented 2 aircraft from identifying their target, but the remaining 4 each laid 2 mines in the correct area. All returned undamaged.

LEAFLETS

9 Lancasters of 5 Group were sent to disperse leaflets over Milan, Turin, Genoa and Bologna. There was a thick haze over the Lombardy Plain, but all the aircraft identified their targets except one detailed for Bologna, which dropped its load over Milan. 3 Wellingtons of 92 Group also scattered leaflets over the coastal towns of Tournai, Douai and Rennes. None of our leaflet aircraft sustained damage or casualties.

W/ST.
 26342/3/ORS3,
 22 October, 1943.

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS		
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT F/A	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E.	Inc.
HAMBURG	8 PFF	Mosq. IV	40	20	1	-	1	-	-	-	-	-	-	-	P. 1082.1	1220.4
		Stir. I	6	5	-	-	1	2	-	-	-	-	-	-	L. 6.3	7.5
		Stir. III	1	1	-	-	-	-	-	-	-	-	-	-	M. 42.2	37.8
		Hal. IIAV	3	3	-	-	-	-	-	-	-	-	-	-	Heavy Bombs	
		Hal. LA	17	17	-	-	1	1	2	1	-	1	2	-	5000lb.	4000lb.
		Lanc. I	5	5	-	-	-	-	1	1	1	1	2	-	P. 8	311
	Lanc. III	51	46	-	-	-	2	3	4	1	1	1	2	M. -	11	
	8 MAIN FORCE	Stir. I	2	2	-	-	-	-	-	-	-	-	-	-	-	-
		Hal. IIAV	4	4	-	-	-	-	-	-	-	-	-	-	-	-
		Hal. LA	9	7	-	-	1	1	-	-	-	-	-	-	-	-
	1	Lanc. I	3	3	-	-	-	-	-	-	-	-	-	-	-	-
		Lanc. III	7	6	1+	-	-	1	-	-	-	-	-	-	-	-
		Well. X	22	19	-	-	2	1	-	-	-	-	-	2	-	-
	3	Lanc. I	89	83	1	-	4	1	1	1	1	1	2	6	-	-
		Well. X	37	37	-	-	1	1	1	-	1	2	5	-	-	-
		Stir. I	8	5	-	-	3	-	-	-	-	1B	-	-	-	-
	4	Stir. III	102	91	1	-	7	3	4	1	1B+4	5	13	-	-	-
		Lanc. II	15	13	1	-	1	-	-	-	-	-	-	-	-	-
		Hal. IIAV	108	94	-	-	7	7	1	1	1B	2	2	2	-	-
	5	Hal. LA	41	37	1	-	2	-	3	-	-	-	2	6	-	-
Well. X		8	8	-	-	-	-	-	-	-	-	-	-	-	-	
Lanc. I		33	28	-	-	4	1	-	-	2	2	6	-	-	-	
6	Lanc. III	115	108	-	-	1	2	4	2	1	1B	2	12	-	-	
	Hal. IIAV	52	50	-	-	2	-	1	-	1	2	13	-	-	-	
	Hal. LA	8	6	-	-	1	1	-	-	-	-	3	-	-	-	
HAMBURG TOTAL			777	699	4+1+	2	45	27	11C+22	31C+3	3B+1B 11C+9	22	72			

o Detailed to drop decoy markers off route.

* Also dropped H.E. on Hamburg.

+ Also attacked primary.

...../Contd:

HAMBURG: DUSSELDORF: MINGL. YING: Leaflets: 29/30th. JULY, 1943. (Contd.)

TARGET	GROUP	TYPE	SORTIES	A/C REPORTING ATTACK ON		AGGRESSIVE SORTIES		MISSING	DAMAGE			INTERCEPTIONS		RESULTS	
				PRIM. AREA	ALT. AREA	OVER ENEMY TERR.	NOT OVER ENEMY TERR.		FLAK	FIGHTER	NOT F/A	ATTACKED	NOT ATTACKED	Tons of Bombs	H.E.	Inc.
HAMBURG TOTAL			777	699	4+2*	2	45	27	11C+22	31C+3	3B+1B 11C+9	22	72		
DUSSELDORF	8 PFF	Mosq. IV	4	4	-	-	-	-	-	-	-	-	-	P. 3.1 H.E.	
BOMBING TOTAL			781	703	4+2*	2	45	27	11C+22	31C+3	3B+1B 11C+9	22	72		
MINGL. YING	4	Well. X	6	4	-	-	2	-	-	-	-	-	-	8 mines	
BRAPLATS	5	Lanc. I	1	1	-	-	-	-	-	-	-	-	-	-	
MILAN	5	Lanc. III	2	2	-	-	-	-	-	-	-	-	-	-	
TURIN	5	Lanc. I	1	1	-	-	-	-	-	-	-	-	-	-	
GENOA	5	Lanc. III	1	1	-	-	-	-	-	-	-	-	-	-	
BOLOGNA	5	Lanc. I	1	1	-	-	-	-	-	-	-	-	-	-	
BOLOGNA	5	Lanc. III	2	1	1	-	-	-	-	-	-	-	-	-	
TOTAL ITALY			9	8	1	-	-	-	-	-	-	-	-	-	
TOURNAI	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	
DOUAI	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	
RENNES	92	Well. III	1	1	-	-	-	-	-	-	-	-	-	-	
TOTAL FRANCE			3	3	-	-	-	-	-	-	-	-	-	-	
TOTAL			12	11	1	-	-	-	-	-	-	-	-	-	
TOTAL			799	718	5+2*	2	47	27	11C+22	31C+3	3B+1B 11C+9	22	72		

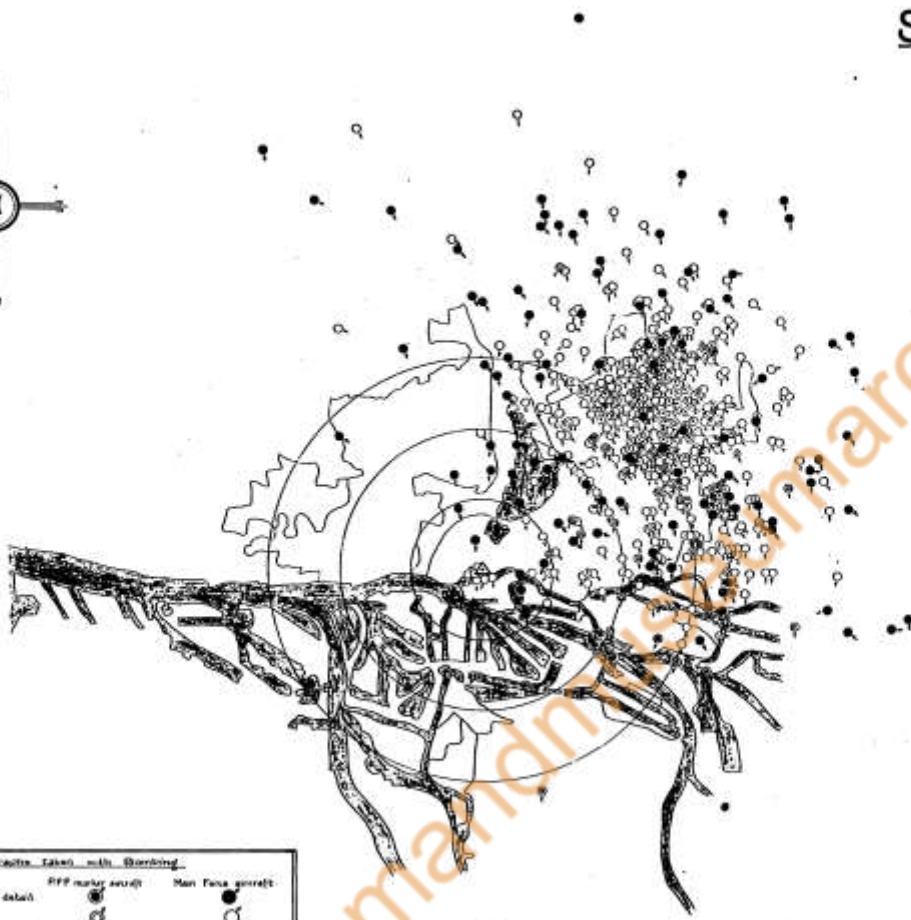
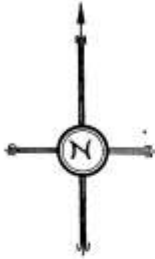
RAID TRACK NOT AVAILABLE

www.bombingmuseumarchives.ca

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 29/30 JULY 1943. TARGET: HAMBURG

421

SECRET



Photographs taken with stereos

Plotted by ground detail	FFP marker aircraft	Men Fovea correct
Plotted by fire	♂	♀
Plotted	By ground detail	By fire
Within 3 miles	37	170
Outside 3 miles	77	247
Unplotted	29	59
No. of prints (with bombing) examined	679	

Scale: 1 inch = 1 mile

ORC/DC 264-B
 Date: 30-43 File: 37
 Ref: NARA: CM: 16

www.bombercommand.com archives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 30/31st. JULY, 1943.REMSCHIED: MinelayingSUMMARYREMSCHIED

A force of 264 heavy bombers and 9 OBOE Mosquitoes carried out a successful groundmarking attack on Remscheid. Damage was severe throughout the town, and in the central town area near the railway station the devastation was so complete that roads and the foundations of buildings were almost indistinguishable. 15 aircraft failed to return.

Minelaying

7 Stirlings and one Lancaster of 3 Group laid a total of 35 mines off the Prussian Islands, all returning undamaged.

Meteorological Forecast

Centre of anticyclone will be over the North Sea.

Home bases: fit for take-off, with small amounts of cloud and moderate to good visibility. Nearly half 4 Group bases will be fit till 0400 hours, and most of the other operational stations may be fit all night, with a little patchy stratus forming in 1, 3 and 8 Groups. Low stratus, base below 1,000 feet, may flow in from the North Sea and make most of the operational stations unfit before 0400 hours. Training Groups will be available as diversions to 0400 hours and probably later. South Coast and S.W. England probably fit, but risk of thundery rain in S.W.

Germany: fine, apart from patches of medium cloud, particularly in S. Germany.

N. Italy: small amounts of cloud, hazy over targets.

	<u>750mb.</u>	<u>500mb.</u>	<u>300mb.</u>
H. bases (take-off):	220°/25m.p.h.	230°/30m.p.h.	240°/35m.p.h.
" (return):	200°/35m.p.h.	220°/45m.p.h.	230°/45m.p.h.
S. " :	230°/15m.p.h.	260°/20m.p.h.	260°/30m.p.h.
Coast to Den Helder:	260°/10m.p.h.	260°/25m.p.h.	270°/35m.p.h.
Den Helder to Ruhr :	290°/15m.p.h.	280°/15m.p.h.	270°/20m.p.h.
Ruhr :	310°/10m.p.h.	290°/10m.p.h.	270°/15m.p.h.
Coast to Alps :	300°/10m.p.h.	300°/15m.p.h.	300°/20m.p.h.
Alps to Milan :	010°/10-15m.p.h.	330°/20m.p.h.	340°/30m.p.h.

REMSCHIEDPlan of Attack

6 Mosquitoes equipped with OBOE were to mark the aiming-point with red T.I's. 13 backers-up were to maintain the marking with green T.I's aiming at the red T.I's, or to overshoot the estimated centre of all green T.I's by 2 seconds. The main force were to aim at red T.I's or the estimated centre of all green T.I's. The Mosquitoes were to carry 4 red T.I's (2 long burning) and the backers-up (5 Halifaxes and 9 Lancasters) 5 green T.I's (2 long burning) + H.E. The direction of approach was to be 119°. WINDOW was to be dropped at rate "C" from 50°59'N. /03°02'E.

03°02'E. to Romscheid to 51°46'N. 02°51'E. "Spoof" markers were to be released at 51°00'N. 05°00'E. by the Mosquitoes to attract the enemy fighters.

5. Timing. Zero hour - 0100 hours. Period of attack - 0056 - 0118

<u>Mosquitoes</u>	<u>Backers-up</u>	<u>Main Force</u>
(Z - 4), (Z), (Z + 4),	(Z + 1) - (Z + 17)	1st wave: (Z) - (Z + 6)
(Z + 8), (Z + 12)	1 per minute except at times of Mosquito attacks	2nd wave: (Z + 6) - (Z + 12)
(Z + 16)		3rd wave: (Z + 12) - (Z + 18)

6. Route. East Coast - 51°40'N. 02°00'E - Furnes - 50°30'N 05°15'E - 50°35'N 07°35'E - 51°00'N. 07°40'E - TARGET - 51°02'N 06°30'E - 51°50'N 02°30'E - East Coast.

Sorties

7.	No. of aircraft despatched.....	273
	" " " reporting attack on primary area.....	228 (83.5%)
	" " " " " alternative area.....	4 (1.5%)
	" " abortive sorties (technical and manipulative defects 25). 26 (9.5%)	
	(reserve aircraft, not required.. 1)	
	" " aircraft missing.....	15 (5.5%)

Weather Experienced

8. Home Bases: fit all night.

Route and target: fine, with only odd patches of high cirrus. Visibility moderate, with patches of sea fog, mainly near the English coast. Haze over target. No moon.

Night Photographic Evidence

9.	No. of photographs with bombing examined.....	195
	" " " showing ground detail (plotted within 3m... 74)	
	(" " outside 3m... 10) ..	84
	(" " unplotted..... 7)	
	" " " " " fire tracks (plotted within 3m... 93)	
	(" " outside 3m... 11) ..	104
	(" " unplotted..... 11)	
	" " aircraft estimated from the photographic evidence to have bombed within 3 miles of the aiming point.....	191

Narrative of Attack

10. The marking by the Mosquitoes was continuous throughout the attack, the timing being almost exactly as planned. One aircraft released 2 red T. Is 5 to 10 miles S.W. of the target, and owing to a slight error by a ground station another dropped its load about 1/2 miles N.E. of the aiming point. However, neither of these appears to have attracted much bombing. The backing-up was also continuous, and well concentrated. The main force bombed mainly within the 3 mile circle, causing fire and destruction throughout the whole town. The whole attack lasted 10 minutes longer than was planned.

Daylight Reconnaissance.

11. The whole of the town of Romscheid and most of the surrounding districts were covered on photographs taken on the 1st August. Great damage was caused throughout the town, and that part of the town centre near the main station was almost completely destroyed. The built-up area in the centre of the town was 90% demolished or gutted; in many cases whole blocks were obliterated, leaving /..... the streets

streets barely discernable in the general havoc. This was mainly due to uncontrollable fires which were seen sweeping this area the day after the attack.

Industrial damage included the important Bergische Stahl-Industrie, all main workshops of which were damaged, the engineering works of Alexandravorwerk almost completely devastated, and another engineering works, a small forge and a brick kiln were also damaged. In addition 49 other smaller factories were affected; these are believed to include manufacturers of machine-tools and precision-tools, textile mills, foundries, and chemical, shoe and hardware factories.

The main railway station and the goods depot were almost completely destroyed and nearby tracks were disrupted and rolling stock damaged to such an extent that the time of photography the station was probably impassable. About 94% of the fully built-up area, and over 80% of the loss fully built-up areas were destroyed or damaged. About 7,200 housing units were rendered uninhabitable.

Alternative Targets

3 aircraft attacked alternative targets in the areas of Brussels, Bergues, Ypres, and another attacked a flak-ship off the coast between Dunkirk and Ostend. Another aircraft, which also bombed Romschoid, dropped part of its load on Grovenbroich.

Special Equipment

OBCE 6 OBCE Mosquitoes and 3 reserves set out to mark the target. 3 aircraft returned early owing to an unserviceable Air Speed Indicator, and 2 reserves were called in, so that in all 7 OBCE aircraft dropped markers. The marking was good, and almost continuous marking was achieved throughout the planned period. However, there appears to have been an error in setting up the release point for the first aircraft on Channel III, causing an overshoot of about one mile. Also 2 red T. Is fell from one aircraft when the bomb-doors were opened 5-10 miles S.W. of the target. Fortunately neither of these sets of inaccurately placed markers attracted many of the main force.

H2S 8 Y-type aircraft were despatched, the equipment being used only as a navigational aid. One aircraft returned early, and 2 of the 7 aircraft which were attacked reported that the set was unserviceable. None used H2S to check its position when bombing.

GEE The Eastern Chain operated on the Wyoming frequency throughout, and the Arizona frequency from 0020 to 0200 hours. 175 aircraft received GEE signals over the target, and the average range was equal to the distance of the target from the Eastern GEE station, 370 miles. Interference on the Arizona frequency was negligible and on the Wyoming frequency weaker than usual. Signals on both frequencies were strong.

DW Coverage

The planned period of bombing (18 minutes) was exceeded by 10 minutes, and Stirlings bombing over a period of 20 minutes. In consequence they received comparatively little protection from the WINDOW dropped by higher flying aircraft, which took about 10 minutes to reach the level of the Stirlings. This probably had considerable bearing on the high losses of the Stirlings (9.2%), compared with 3.8% for other types.

Defences

Flak and Searchlights On the outward route heavy and light flak was in operation at several places in Belgium, especially at Antwerp. The target defences appeared to be weak and ineffective, only a few searchlights and slight heavy and light flak being in operation. The most severe opposition came from Dusseldorf

/.....and Cologne

and Cologne on the return; the earlier aircraft reported moderate inaccurate predicted flak, which changed to barrage up to 20,000 ft. Heavy flak also cooperated with numerous searchlights, which exposed singly, or in cones of 20 or 30 beams. 6 aircraft were damaged by flak, 2 being Stirlings and 4 Lancasters. The Halifaxes were flying in the heaviest concentration of WINDOW which may account for the absence of damage to those aircraft.

20 Fighters. Intercepted wireless traffic revealed 11 or 12 fighters operating on the same frequency in the target area. The terms and call-signs used indicate that these were day-fighters; they also appeared to be cooperating searchlights when landing. There was little evidence that the system of freelance fighters, with a running commentary by the ground-control on the general direction and height of the bombers, was in general use, although a few references to height and direction were overheard. 130 fighters were heard operating, but only 45 of these mentioned British aircraft. The bombers reported 20 interceptions, including 4 attacks and 8 other combats, 11 interceptions occurring before the bombers reached Romschoid. The only interception in the target area developed into an attack.

Casualties.

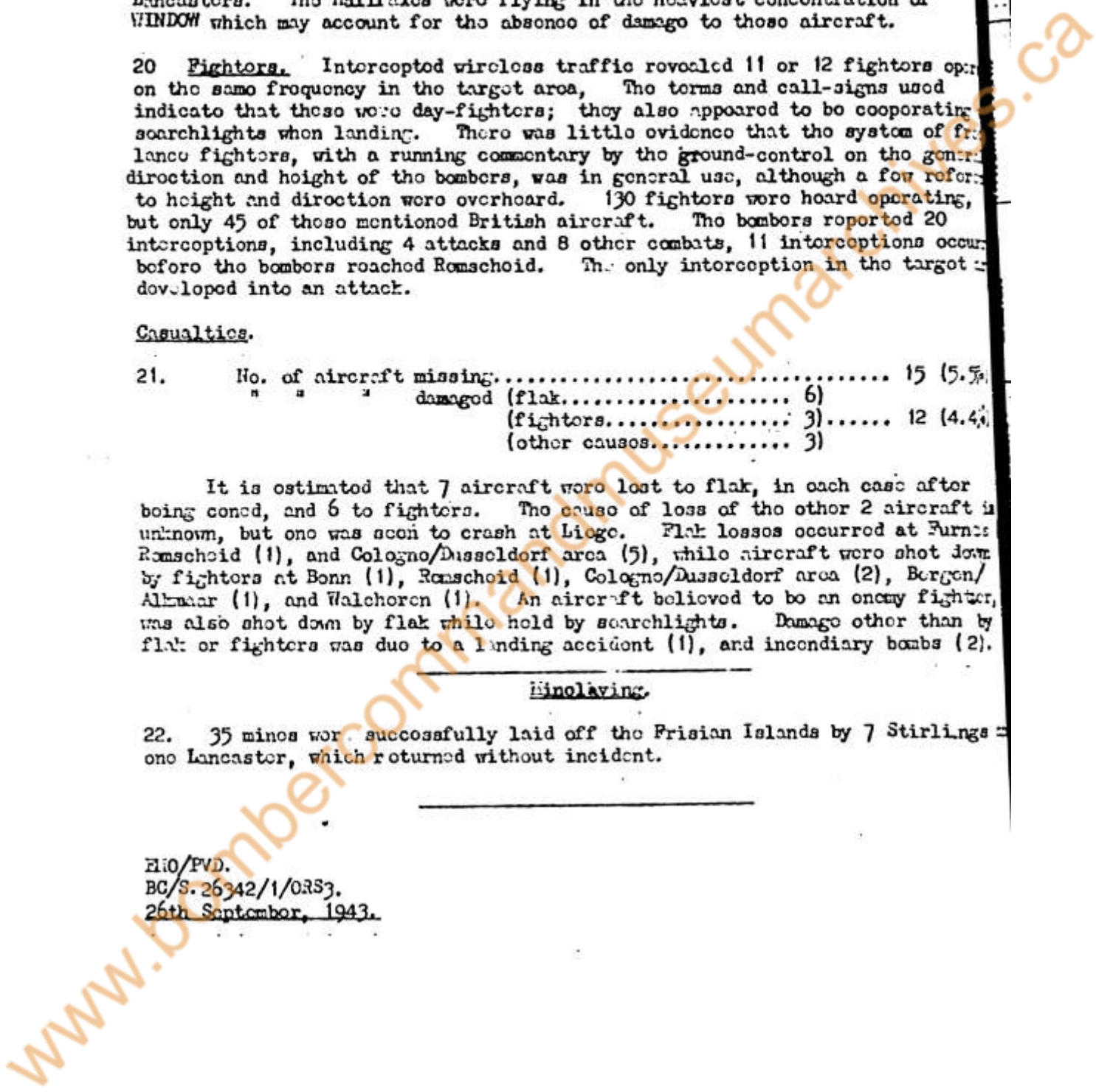
21.	No. of aircraft missing.....	15 (5.5%)
	" " " " damaged (flak.....)	6
	(fighters.....)	3)..... 12 (4.4%)
	(other causes.....)	3

It is estimated that 7 aircraft were lost to flak, in each case after being coned, and 6 to fighters. The cause of loss of the other 2 aircraft is unknown, but one was seen to crash at Liege. Flak losses occurred at Furnes/Romschoid (1), and Cologne/Dusseldorf area (5), while aircraft were shot down by fighters at Bonn (1), Romschoid (1), Cologne/Dusseldorf area (2), Bergen/Albaar (1), and Walchoren (1). An aircraft believed to be an enemy fighter, was also shot down by flak while held by searchlights. Damage other than by flak or fighters was due to a landing accident (1), and incendiary bombs (2).

Minelaying.

22. 35 mines were successfully laid off the Frisian Islands by 7 Stirlings and one Lancaster, which returned without incident.

EMO/PVD.
BC/S. 26342/1/ORS3.
26th September, 1943.



REMSCHIED	P.P.V.	WOS. IX	ATTACK ON			OVER-EN. TERRIT.	NOT OVER EN. TERRITORY.	FLAK TER.	PICH. E/A	NOT ACKED	NOT ATTACKED	Tons of Bombs		
			PRIM. AREA	ALT. AREA								N.E.	W.	
	8	HAL. Ia	9	7		1						(P)	287.2	447.5
		HAL. Ia	5	4	1							(A)	8.5	6.1
		LANC. III	8	8				1		1		(B)	8.0	35.7
	8	MAIN FORCE	LANC. III	5	4	1							Heavy Bombs	
			LANC. I.	9	8		1				2		8000 lb.	4000 lb.
	1		LANC. III	21	16	1		4			1	(P)	1	70
	3		SPR. I.	4	3			1		1B		(A)	-	2
			SPR. III	43	64	1+10	1	9	8	2	1 AC	(B)	-	2
			HAL. II & V	32	27			2						
	4		HAL. Ia	25	22			3						
			LANC. I.	10	8			1						2
	5		LANC. III	29	27			1	2	E+1		1		2
			HAL. II & V	28	26			2						3
	6		HAL. Ia	5	4			1						1
REMSCHIED TOTAL			273	228	4 + 10	3	23	15	5	E+2	1B+1 AC+1	4	16	
REMSCHIED PRISONS			3	3										29 mins
MINELAYING TOTAL			8	8										55 mins
TOTAL			281	236	4 + 10	3	23	15	5	E+2	1B+1 AC+1	4	16	

RAID TRACK NOT AVAILABLE

