

OPERATIONAL REPORT ON NIGHT OPERATIONS - 30th NOVEMBER/1st DECEMBER, 1942.Mine-laying (La Pallice).Local Advice Submitted to the Command.

0930 hours. The midnight frontal positions are estimated as follows: (1) north-east Scotland to north-east Ireland to south-east Ireland (2) south-east Ireland to south-west England to the Channel Islands to the Alps turn south-westwards and occluded eastwards. How bases south of the will experience fog in patches by midnight, probably becoming widespread over the eastern North Sea there will be much convection cloud, tops 15,000 will extend some distance along the western Baltic and to the south, deep inland good breaks should be found. Much medium cloud is expected over the Bay of Biscay, probably accompanied by low cloud. Along the west coast of France there will be much layer cloud, based at about 1,000 feet.

1250 hours. Bases of 4 Group should be fit for take-off, but will be later. Other Operational Groups will experience local fog or very poor visibility at dusk, becoming worse towards midnight, except in East Anglia. Snow may be expected. A good diversion is likely in south-west England. From the North Sea to Danzig there will be frequent wintry showers and heavy cloud, very low in the North Sea. Over the Bay of Biscay, 8-10ths cloud will be based at 2,000 feet, probably thicker in the north.

1545 hours. 4 Group will be fit till 0200 hours, but probably ^{not} later; visibility is expected in cloud at 1,000 feet. 1, 3 and 5 Groups will be smoky, developing in patches. 91 and 92 Groups are more promising, with visibility 100 yards.

- a) No. of aircraft despatched (Well.III's of 3 Group).....6
 b) reporting mines laid in primary area6

Weather Encountered.

Thin, low cloud prevailed over the target area. The moon was below the horizon but visibility was fairly clear.

6 Wellington III's of 3 Group were detailed to lay mines off La Pallice. They completed their task successfully and returned without incident. 12 mines were

2/6/ORS.
 1st Dec, 1942.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 2/3rd DECEMBER, 1942.Frankfurt: Leaflets.Summary:

1. Frankfurt The meteorological forecast of the risk of poor visibility at Frankfurt was fulfilled and the 79 aircraft of the reduced force of 112 despatched which claim to have bombed this target, had great difficulty in locating their position. A few aircraft may have attacked in the vicinity of the city but the main weight of the attack was widely dispersed. Small concentrations fell at Seckheim and Jugenheim about 24 miles south of the target, but no evidence is available of the damage caused. 6 bombers were lost.
2. Leaflets. In spite of heavy cloud over France, two Wellingtons were able to distribute their leaflets in the area allotted - Vichy. A third dropped its load near Fougères but the remaining sortie was forced to return early.

Meteorological Forecast.

3. 0920 hours At midnight a cold front will lie from 50°N 20°E to Stuttgart to S.W. England.

Some bases:- Fine, except for local fog late at night.

Germany:- North of 50°N, well broken convection cloud: South of 50°N, much layer cloud to the frontal belt, then rain or snow with solid cloud to 12,000 feet near the front.

N. Italy:- Probably fog.

France:- Well broken layer cloud.

4. 1300 hours Bases:- 1 and 5 Groups expect considerable visibility troubles later in the night; other groups anticipate no trouble except for local smoke.

Route:- The route to the Ruhr or Frankfurt is preferable to that to Hanover since convection cloud extending to 15-20,000 ft. with severe icing is probable over the eastern North Sea and N. Germany. Wind at 15,000 feet on this route, 50-60 m.p.h. from 300°.

Germany:- Hanover unlikely to have good clearances before midnight or even later. Less cloud is expected over the Ruhr and at Frankfurt cloud should tend to decrease during the night.

5. 1700 hours Bases:- Serious visibility troubles, especially towards dawn, except on the E. coast and in Yorkshire: 5 Group doubtful about take-off after dusk.

Route:- No difficulties anticipated.

Frankfurt:- Medium cloud during the first part of the night may clear completely later, but there is a risk of very poor visibility.

6. 2130 hours Bases:- 1 Group expect to have about 4 bases available for return: 2 and 3 Groups will have visibility of 1,000-1,500 yards: 4 Group will generally be fit for return: 5 Group conditions will be difficult for take-off and impossible for return.

FRANKFURT.

Plan of Attack.

7. Zero hour0415 hours
Period of Attack:-Pathfinder Force(33 a/c)...zero-1 to zero + 1
Main Force(1,3,4 & 5 Groups+
P.F.F. u/t)...zero+3 to zero+5

Routes briefed:- All Groups: base-Cayeux-Oppenheim - FRANKFURT
North of Wiesbaden - Cayeux - base.

(for routes taken see route map)

8. The aiming point selected was slightly south of the city centre and 250 yards north of the river. The Pathfinder Force consisted of three sub-sections, namely "finders", "illuminators" and "blob-fire markers", whose functions were defined as follows:-

(a) At zero - 1 the "finders" (42 a/c) were each to lay a long stick of flares (8-9 sec. intervals) across the target area in one of the five specified directions:

2	aircraft	from	50o05'N	08o36' E	to	50o12'N.	08o42'E.
2	"	"	50o04½'N	08o37'E	"	50o11'N.	08o44' E.
4	"	"	50o04'N	08o38' E	"	50o10'N.	08o45'E.
2	"	"	50o03½'N	08o39'E.	"	50o09'N.	08o46'E.
2	"	"	50o03'N	08o40' E.	"	50o08'N.	08o47'E.

9. Any of these aircraft which definitely located the aiming point would revert to the role of "illuminator".

10. (b) At zero hour the "illuminators" (4 a/c) were to release their flare-sticks (5-sec. intervals) to form a horse-shoe round the aiming point.

11. (c) At zero + 1 the "blob-fire markers" (17 a/c) were each to release their loads, consisting of 250 lb. incendiaries with a few 4000 lb incendiaries, in a single salvo on the aiming point.

12. No coloured flares were to be used.

13. The main force was then to attack the aiming point with loads consisting chiefly of 4 lb. incendiaries and H.E. bombs in the proportion of 2:1, the incendiaries to include up to 6% of the explosive type, if available. The above proportion was to be achieved either by allotting mixed loads to individual aircraft or by splitting the total incendiary load between certain aircraft and the total H.E. load between others. Incendiaries were to be dropped before zero + 10 minutes.

14. Aircraft of 4 Group were instructed to concentrate at Dungeness, time to be fixed by the Group Navigation Officer, and to cross the French Coast at a minimum height of 15,000 feet, thereafter cutting down engine revolutions to reduce exhaust glow. The bombing height was left to each Captain's discretion, but on the return journey height was to be lost gradually from near the enemy coast.

15. One Pathfinder aircraft was allotted the task of transmitting a radio commentary over the target area for the purpose of assisting crews of the Force to locate the position of the aiming point in relation to fires etc. After listening to this with the volume turned up on the approach to the all Main Force aircraft were to lower the volume, after obtaining sufficient information, to avoid interference with the inter-communication system.

16. Note! The planned composition of the attacking force was considerably reduced owing to uncertain weather conditions. 5 Group did not participate and other Groups sent smaller forces than those originally detailed.

Navigational Instructions.

17. Geo-target co-ordinates:- B = 5.30

Navigators were advised to keep north of the latitude line B = 5.50 while over enemy territory. 'J' beams were to be used as a guide if necessary.

Sorties

18.	(a)	No. of aircraft despatched.....	112
	(b)	" reporting attack on primary area	79 (70.5%)
	(c)	" " alternative area	9
	(d)	" abortive sorties (technical defect 11)	18
		{ weather	4
		{ navigational error ..	1
		{ late take-off	2
	(e)	" aircraft missing	6 (5.4%)

Weather Experienced

19. Home Bases:- Fog and mist became widespread by dawn in all areas except most of 4 Group and locally in 3 Group. The south coast and some Stations in 91 Group retained a visibility of more than 2,000 yards

20. Target:- 3-6/10ths thin layer cloud, based at 15,000 feet, prevailed over the target with no cloud below. Some reports were received of no cloud, but a thick industrial haze, with patches of fog, rendered visibility very poor. The moon was above the horizon and 31% of full.

Narrative of Attack.

21. The planned scale of attack had to be considerably reduced, since aircraft of 5 Group were unable to take off from their bases. Consequently only 112 aircraft of 1, 3 and 4 Groups and the Pathfinders set out for Frankfurt, where bombing conditions were made difficult by extreme darkness and poor visibility caused by thick ground haze. The Pathfinder flares proved of little use and the attack became very scattered. The photographic evidence suggests that the weather conditions were such that the planned approach to the target from the last turning point (Oppenheim) could not be adhered to, and that the P.P.F. aircraft had great difficulty in locating the target. Some seem to have spent up to half an hour in searching, by which time a small diversion had already begun at Seeheim 24 miles S. of the target. A number of decoy fires were reported. 6 of our aircraft failed to return.

22. Alternative Targets:- 9 aircraft, unable to locate the primary, reported attacks on alternative targets, namely Cochem (2), Trois, Hontheim, Wurms, Mainz (2), a built-up area at 50o12'N 08o16'E. and two villages in the area of Kaiserslautern. In addition, two Pathfinder aircraft, unable to identify Frankfurt by the light of their flares, respectively attacked Hochst and barges on the Rhine at 50oN 08oE.

Photographic Evidence.

23. Night Photographs:-

Photographs taken with bombing that have been plotted (see accompanying diagram):-

by ground detail	20	outside 5 miles.....	25
by fire tracks	5		

Unplotted photographs taken with bombing:-

that show ground detail	9
with no ground detail but with fire tracks that might be plotted	3

Evidence from the night photographs shows that the attack was scattered over the open country south and south east of Frankfurt, with a small concentration at Seeheim and Juchenheim about 24 miles south of the target. Nine only of the aircraft plotted there carried incendiaries and, as there is no photo-

graphic evidence of at least 16 incendiary sticks, it may be presumed that a minimum of 20 aircraft bombed the Seeheim-Jugenheim district. The majority of the incendiaries burnt out in open country, but groups of fires were established in the villages. The bombing in this district extended from soon after zero hour (04.14) throughout the attack up till 04.53. At 04.50 hours late in the sequence of events and a full half-hour after the planned period of attack for the P.F.P., two 4,000 lb. incendiary-gels fell near Seeheim - the contents forming a burning strip 80 or more yards wide. There is the possibility of the existence of a decoy, but there is little doubt that the concentration was a diversion caused by mistaken identification which became more effective when fires started in Jugenheim. Two only of the photographs examined show considerable cloud, and it seems that in the extreme darkness prevailing aircraft had great difficulty in locating their position - responding so long in searching for the target that the timing of the attack was upset.

24. Daylight Reconnaissance:- No. P.R.U. cover has been attempted to

Navigational Aids

25. Only 35 aircraft returned useful ranges, averaging 270 miles, with a maximum range of 322 miles. Much "grass" interference was experienced, together with unwanted signals over France. A few squadrons experimented with I.F.F. in the "jamming" position, but most navigators found that this caused excessive interference. "J" beams B were used to mark a southern limit to the route taken. The performance of the ground stations was satisfactory, with only slight interruptions, although at 0335 hours the "B" station was out of phase for a period of about 3 1/2 minutes.

Defences.

26. Flak and Searchlights:- Two to four cones of 15-30 searchlights were in operation to the north, northwest and west of the target. Considerable glare was caused by their exposure in the prevailing conditions. Reports regarding the heavy flak fire vary; the general view was that it was moderate, but some crews encountered accurate and intense fire when held in searchlight cones. Light flak fire was slight although some aircraft were as low as 8,000 ft; this was no doubt due to the poor visibility. Up to 16 balloons were reported at 10,000 feet on the western part of the town.

27. Night Fighters:-

Number of Interceptions	(a) attacks	4 (3.6%)
	(b) other interceptions	.24 (21.4%)
	Total	28 (25.0%)

Only 8 sorties by controlled night fighters were made, but in spite of this the number of interceptions reported was extraordinary high. This suggests that considerable numbers of free-lance fighters were operating. Tinsel was in use on this operation for the first time but no marked effect from it is apparent.

Casualties.

28.	(a)	No. of aircraft missing	6 (5.4%)
	(b)	No. of aircraft damaged:-	
		flak	13 (11.6%)
		fighter	2 (1.8%)
		not enemy action	2 (1.8%)
		Total damaged	15 (13.4%)

* 1 aircraft was damaged by flak, fighter and on landing.

29. By comparison with the two previous raids on Frankfurt, in August and September 1942, the missing and fighter damage rates are approximately the same as before, but the flak damage is increased. From our own observations it appears that 1 aircraft was shot down by a fighter which also fell in

Charleroi, and another possibly by fighter, near Dinant. One further aircraft cause unknown, 20 miles S.W. of Bonn. All these aircraft were in flames. In addition, two claims by our aircraft to have destroyed enemy fighters are confirmed. This may be assessed as 1 definitely and 1 possibly to fighters, and 4 to unknown causes.

LEAFLETS.

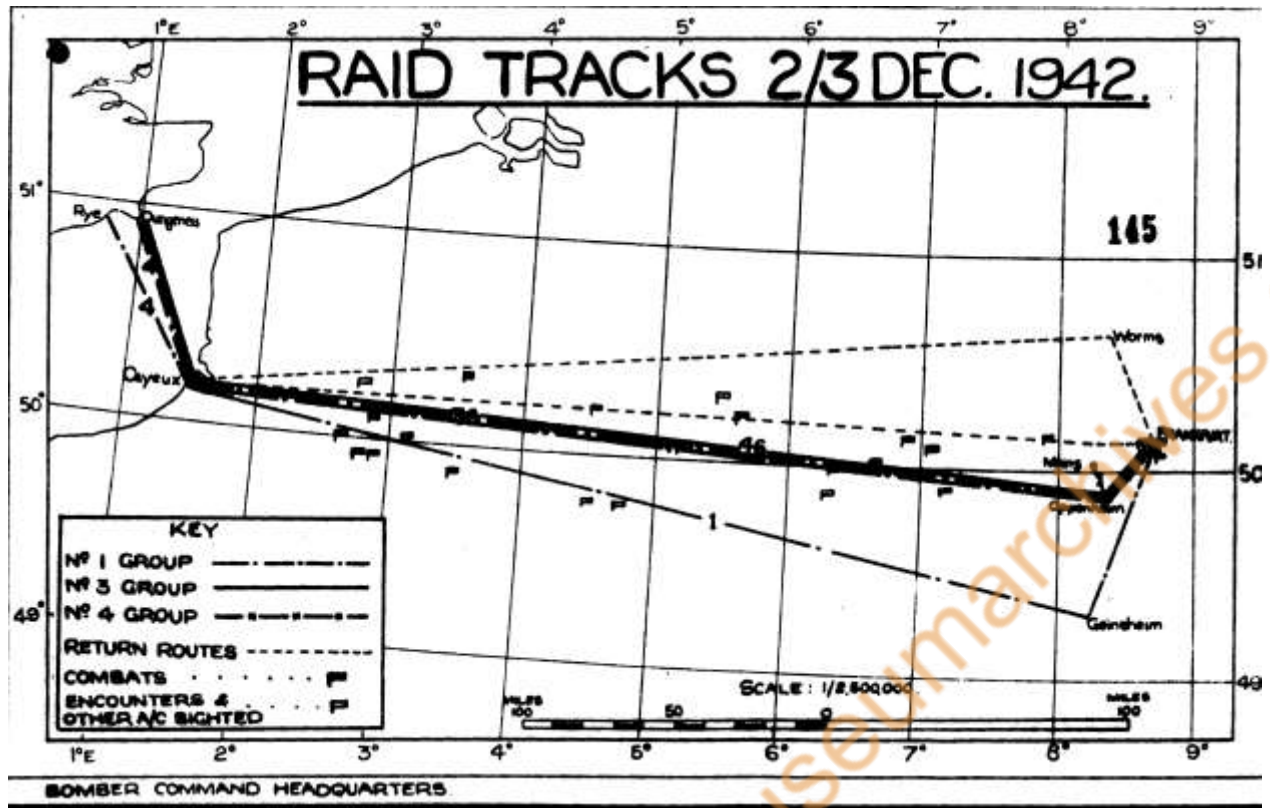
Four Wellington III's of 92 Group were detailed to drop leaflets in the Vichy area. The cloud was encountered over France, with tops to 14,000 feet, but two aircraft reached the primary. One pilot dropped his leaflets in the area of Fougères; remaining aircraft had to return early, on the pilot's hatch blowing open. No opposition was encountered and all aircraft returned safely.

26342/6 /ORS.
February, 1943.

ED

Target	Gr.	Type	Sorties	Aircraft reporting attack on		Abortive sorties		Missing	Damage			Interceptions	
				primary area	alternative area	over en. territ.	not over en. territ.		Flak	fighter	not en. action	attacked	not attacked
FRANKFURT	P.F.F.	Lancaster	7	5	1	-	1	-	1	-	-	-	1
	P.F.F.	Halifax	9	5	3	1	-	-	1	-	-	-	-
	P.F.F.	Stirling	7	5	2	-	-	-	3	-	-	-	1
	P.F.F.	Well.III	3	3	-	-	-	-	-	-	-	-	-
	P.F.F. (u/t)	Lancaster	3	2	-	1	-	-	-	-	1	-	-
	P.F.F. (u/t)	Halifax	1	-	-	1	-	-	-	-	-	-	-
	P.F.F. (u/t)	Stirling	2	2	-	-	-	-	1x	1x	1x	1	-
	P.F.F. (u/t)	Well.III	1	1	-	-	-	-	1	-	-	-	-
	P.F.F. (u/t)	Well.L23	1	-	-	-	1	-	-	-	-	-	-
	1	Lancaster	17	14	-	1	1	1	1AC	-	-	-	8
	3	Stirling	13	10	-	1	1	1	2	1B	-	2	1
	3	Well.III	10	8	-	-	1	1	1	-	-	-	2
	4	Halifax	38	24	3	-	8	3	1+1AC	-	-	1	11
	BOMBING TOTAL			112	79	9	5	13	6	11+2AC	1+1B	2	4
LEAFLETS													
Vichy	92	Well.III	4	2	1	-	1	-	-	-	-	-	-
TOTAL			116	81	10	5	14	6	11+2AC	1+1B	2	4	24

* This a/c sustained damage from both flak and fighter, as well as on landing.



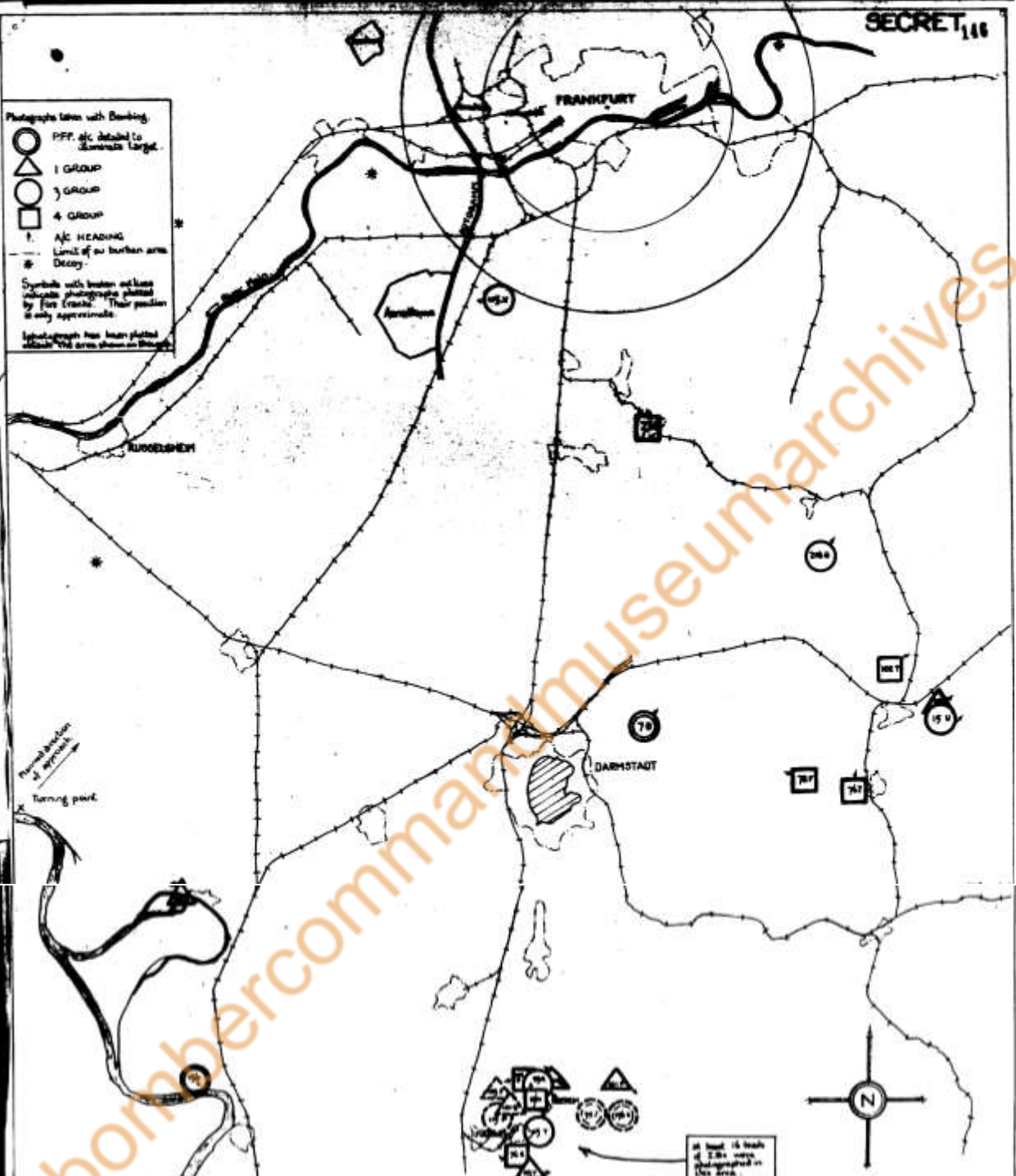
www.bombercommandmuseummarcivilles.ca

Photographs taken with Bomber

- PFF. a/c detailed to illuminate target.
- △ 1 GROUP
- 3 GROUP
- 4 GROUP
- ↑ A/C HEADING
- - - Limit of no burthen area
- * Deception

Symbols with broken outlines indicate photographs plotted by Fort Greck. Their position is only approximate.

Photographs from beam plotted directly. The area shown is shown.



ORS BC 176A
 Date 6 2 49 Year 530
 Ref. NR 211, OAG X.P. 12

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 23rd DECEMBER 1942 TARGET FRANKFURT

at least 15 hours
 of 2.5% were
 photographed in
 the area.



0 1 2 3 4 5 6
 MILES
 Scale 1/100,000

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 4/5TH DECEMBER, 1942.Minelaying (Frisians & Danzig Bay): Leaflets (Paris)Meteorological Forecast.

1. The midnight frontal positions are estimated as follows: (1) warm from Shetland to 55°N. 06°E., becoming cold to Copenhagen to the tip of a warm sector at 57°N. 16°E., then warm to 55°N. 23°E. (2) occluded from south-west England to Brest to north-east Spain; (3) feeble warm near the east coast of England. Over the plain of northern Germany there will be layer cloud with breaks. Comparatively little is expected over the Ruhr and central and southern Germany, but in these areas haze will develop into mist or fog. Fog is also likely over the Lombardy Plain. Much medium and low cloud will prevail over the west coast of France. Over Danzig Bay, and en route, there will be much strato-cumulus at 1,000 to 2,000 feet, with slight snow showers, but there is a risk of deteriorating conditions spreading southwards across the route. At home bases, 1 and 4 Groups expect to have stratus below 600 feet for an early take-off, persisting for most of the night. Other Operational Groups should be fit for take-off and east angles should remain available all night. The south and south-east should be safe for diversion.

MINELAYINGSorties.

2.	(a)	No. of aircraft despatched.....	29
	(b)	" " reporting mines laid in primary area.....	23
	(c)	" " " alternative area.....	2
	(d)	" abortive sorties (weather.....3); (technical defect....1)	4
	(e)	" aircraft missing.....	0

Weather Experienced.

3. Visibility was good over the Frisians, despite thick haze. The target area was free of cloud. 10/10ths was encountered over the Baltic, where visibility decreased at times to almost nil in rain and snow. There was no moon. Home bases south of the Wash enjoyed fair weather, although visibility was moderate early in the night. North of the Wash, mist and fog developed extensively, dispersing towards midnight, when a belt of low cloud and rain spread from the west, affecting all bases in this area by dawn.

Results.

4. 29 aircraft were despatched on a mining operation. 23 of these were detailed for the Frisians, and 22 report reaching their allotted area. 109 mines were laid. 6 other aircraft were detailed for the Bay of Danzig, but visibility was so bad over the Baltic that only one pilot reached his target, laying 3 mines off Gdynia. 2 aircraft each laid 3 mines off Bornholm, as an alternative area. No damage was sustained, except for one aircraft overshooting on landing, and all our aircraft returned safely.

LEAFLETS

5. Three Wellington Ic's of 91 Group, manned by pupil crews were detailed to drop leaflets in the Paris area. One of these had to turn back, owing to engine trouble, but the other two completed their task and returned safely.

30/S. 26342/5/ORS.
26th January, 1943.

EM/VP.

			5032 42						area	action	
			primary area	alternative area	over enemy coasts	not over enemy coasts					
<u>MINELAYING</u>											
Prison	3	Well. III	5	5	-	-	1	-	10	-	
Islands	3	Stirling	18	17	-	-	-	99	-	-	
Glynn	5	Leicester	3	1	1	-	1	3	-	-	
Donag	5	Leicester	3	-	1	-	2	-	1	-	
MINELAYING TOTAL			29	23	2	-	4	-	112	1	
<u>REAPLAYS</u>											
Point	91	Well. Io	3	2	-	-	1	-	-	1	
TOTAL			32	25	2	-	5	-	112	2	

* These 3 VC were not fitted with Gee

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - 5/6th DECEMBER 1942.

Leaflets.

Metecrological Advice Submitted to the Command.

At midnight an occluded front will lie from 57 $\frac{1}{2}$ ^oN. 00 $\frac{1}{2}$ ^oE. to 61^oN. 05^oE. to 64^oN. 12^oE. to Copenhagen, becoming warm to the Alps and cold to the Ruhr and Bordeaux. South of the cold front over Germany there will be much low cloud. No breaks can be expected over the Ruhr. Variable amounts of layer cloud will prevail over North Italy and over North France, cloud should be well broken. Paris should be clear of the front by midnight, after which very good breaks should be found; a late start is therefore advisable. The Prisians will be very showery, with cloud tops extending to 12-15000 feet; base 1,000 feet, icing index high. Bases will be free of trouble, apart from smoke in the lee of industrial areas late at night.

Statistics.

- (a) No. of aircraft despatched.....6
- (b) " reporting leaflets dropped over primary area6

Weather Experienced.

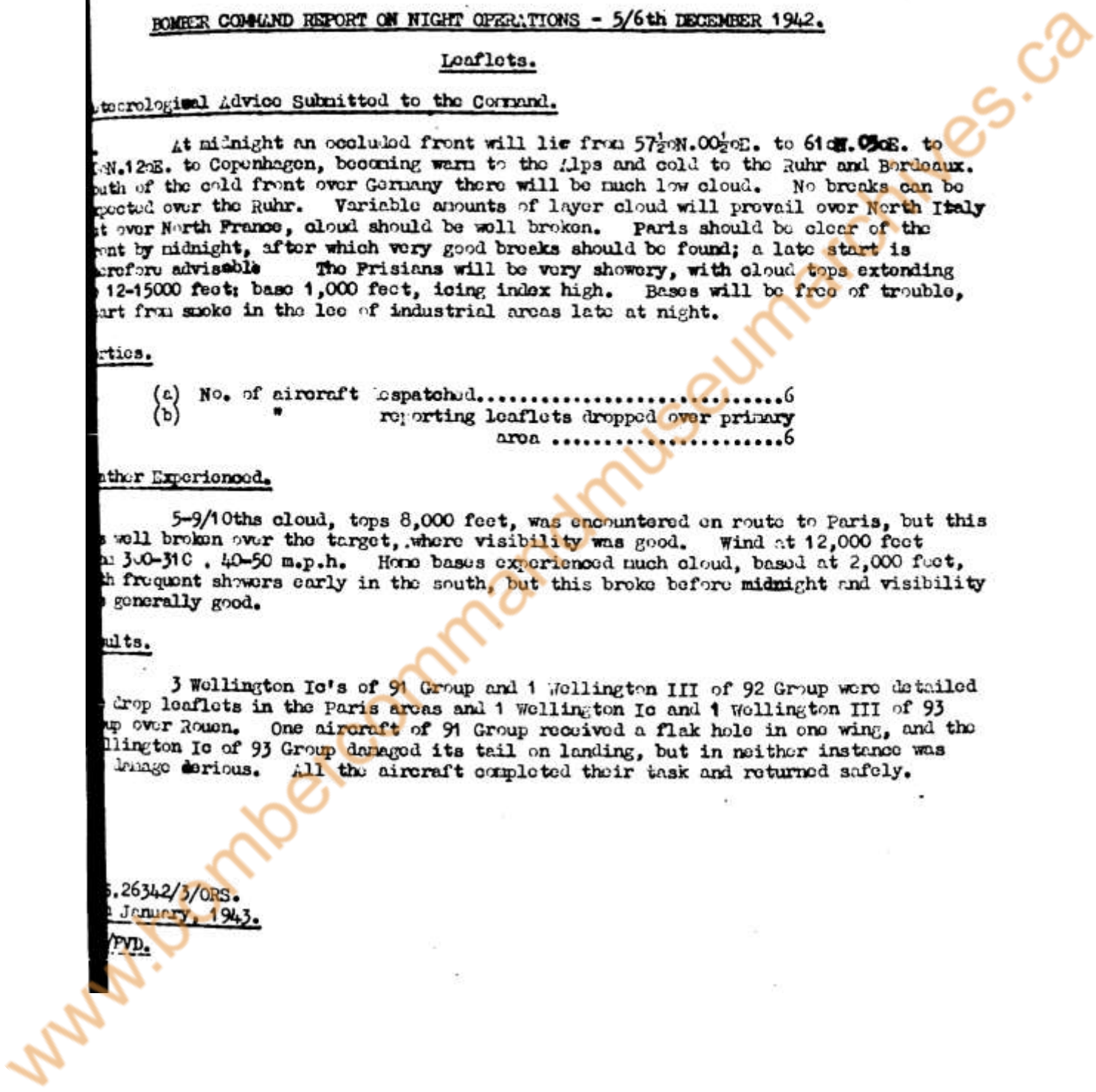
5-9/10ths cloud, tops 8,000 feet, was encountered on route to Paris, but this was well broken over the target, where visibility was good. Wind at 12,000 feet was 300-310 . 40-50 m.p.h. Home bases experienced much cloud, based at 2,000 feet, with frequent showers early in the south, but this broke before midnight and visibility was generally good.

Results.

3 Wellington Ic's of 91 Group and 1 Wellington III of 92 Group were detailed to drop leaflets in the Paris areas and 1 Wellington Ic and 1 Wellington III of 93 Group over Rouen. One aircraft of 91 Group received a flak hole in one wing, and the Wellington Ic of 93 Group damaged its tail on landing, but in neither instance was damage serious. All the aircraft completed their task and returned safely.

6.26342/3/ORS.
1 January, 1943.

FVD.



BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 6/7TH DECEMBER, 1942.MANNHEIM ; MINELAYINGSUMMARY

1. Mannheim Cloud over the target area was considerably more than the amount forecast and the town seems to have been completely obscured. 81% of a force of 272 aircraft report bombing the estimated position of the target. There is no photographic evidence of the results obtained. The German radio reported damage to residential districts of Karlsruhe and Iffshoim.

9 aircraft failed to return.

Minelaying All sorties returned safely from a mining operation in the Frisians area, where 49 mines were laid by 13 of the 14 aircraft detailed.

Meteorological Forecast

2. Bases- All bases in Operational Groups fit for take-off at dusk and should remain available for return, with cloud generally above 1,500 feet and occasional rain.

Route:- Much medium cloud, breaking over the target. Wind at 15,000 feet: 55 m.p.h. from 300°, backing to 250° on return.

Germany- Much medium cloud over the whole of Germany, with low strato-cumulus over the northern plain. Along the Upper Rhine valley there will be a few breaks in the medium cloud, with possibly no strato-cumulus and a good chance of little or no low cloud at Mannheim.

Mining Areas:- Low cloud, below 1,000 feet in patches, over the west coast of France. Much strato-cumulus cloud, base about 1500 feet, over the southern North Sea and the Baltic.

MANNHEIMPlan of Attack

3. Zero hour.....2000 hours
 Period of attack:- Pathfinder Force (25 a/c).....1958 to 2020 hours
 Main Force.....2003 to 2020 hours

Route briefed for all groups:- Base - Cayeux - MANNHEIM - turn left - Cayeux - base.

(for routes taken, see route map).

The Pathfinder Force was divided into "finders" (10 aircraft) and "illuminators" (15 aircraft). The former of these were each to lay a long stick of flares, commencing at zero - 2 and spaced at 8-9 second intervals, in three directions across the target, namely:-

3 aircraft from 49°31' N 08°21' E to 49°31' N 08°36' E
 4 aircraft from 49°29' N 08°21' E to 49°29' N 08°36' E
 3 aircraft from 49°27' N 08°21' E to 49°27' N 08°36' E

Any of these aircraft able definitely to locate the aiming point could revert to the role of "illuminators", whose instructions were to fly into or down wind releasing short sticks of flares, spaced at 4-second intervals, in two parallel straight lines, one on each side of the aiming point (the city centre). The exact positions of these lines, north and south of the city centre, were specified as:-

...../(1)

- (i) from a point 4300 yds, 315° from the aiming point to a position 4700 yards, 108° .
- (ii) from a point 4300 yards, 285° from the aiming point to a position 4700 yards, 135° .

The illumination begun by 5 aircraft at zero hour would then be continued by pairs of aircraft, releasing their flare-sticks simultaneously along these parallel lines at 3-minute intervals until zero + 15 minutes. The one marker flare (red emitting green stars) carried by each Pathfinder was to be released only if considered necessary to indicate to other Pathfinder aircraft that the target had been found.

An additional 7 Pathfinders were to attack the city centre along with the main force, consisting of aircraft from 1,3,4 and 5 Groups.

The actual timing of attack achieved is shown in Appendix I.

Specified Bomb Load:- about one-third of the total to consist of H.E., the remaining two-thirds of 4 lb. incendiaries, including 6% of the explosive type, if available.

No incendiaries to be dropped before zero + 10 minutes.

Navigational Instructions

4. "Gee" Target Co-ordinates:- B 8.40
C 35.35

It was hoped that improved range of reception of the "A" pulse would result from recent modifications to the Daventry transmitter. References to any observations in this respect were to be made on the R.D.F. report form.

Sorties

5. (a) Number of aircraft despatched.....272
(b) " reporting attack on primary area.....220 (80.9%)
(c) " " alternative..... 5
(d) " abortive sorties (technical defect.....30).....38
{ weather..... 3 }
{ late take-off..... 2 }
{ sickness of crew..... 1 }
{ crashed on take-off..... 1 }
{ recalled..... 1 }
(e) Number of aircraft missing..... 9(3.3%)

Weather Experienced.

6. Home Bases:- There was much mist at first in Lincolnshire and S. York but this cleared by 2200 hours. Patches of low stratus, below 1000 feet, spread from the Bristol Channel across to East Anglia by 2300 hours and there was general much cloud at 1500 feet with moderate visibility.

Route and Target:- 9/10ths layer cloud was encountered throughout, with top variously reported as extending to 6,000 and 10-12,000 feet. The photographs taken with bombing confirm that dense cloud (approximately 9-10/10ths with occasional breaks) with base below 7000 feet prevailed over the area attacked. Winds at 15,000 feet, 50-65 m.p.h. from $290-320^{\circ}$ at surface level; 10 m.p.h. from the west. There was no moon.

Narrative of attack.

7. The Pathfinders found Mannheim covered by 10/10ths cloud between 4,500 and 6,000 feet. Although all but one of the "illuminators" brought their flares being unable to identify the town, 209 aircraft of the Main Force bombed on the estimated position of the target, assisted by flak concentrations and the glow fires. Altogether 222.4 tons of H.E. and 34.1 tons of incendiary bombs were dropped by these aircraft. Some crews reported seeing fires in built-up areas, but the attack was probably not concentrated. The German News Agency asserted that damage was caused in the residential districts of Karlsruhe and Iffesheim.

■ For details of bombs dropped, see Appendix II

9 of our aircraft failed to return.

Alternative Targets attacked:- 5 aircraft reported making attacks on alternative targets, namely:-

(1) searchlights at Florenville (2) a flak concentration believed 10 miles E. of Mannheim (3) believed Karlsruhe, (4) a built-up area 15-25 miles S. of Mannheim (5) an unidentified area, protected by balloons, reached on E.T.A.

The tonnage of bombs dropped on alternative targets was 2.2 tons H.E. + 6.7 tons incendiaries.

Photographic Evidence.

8. Night Photographs:- Out of 220 aircraft reporting attack on Mannheim only two returned photographs taken with bombing which could be plotted; both are of Mulheim, 14½ miles west of the target. The four other photographs obtained showing ground detail are of open country. Examination of the total of 64 photographs taken with bombing shows that 54 recorded dense cloud.

Day Reconnaissance:- There has been no PRU cover to date.

Navigation Aids

9. Of 229 sorties made by Gee aircraft, 137 reported having obtained useful ranges, the average being 282 miles and the maximum 352 miles. The experiment of using trailing serials of variable length produced no noticeable improvement. Fairly bad interference (multiple pulses and sine wave) was experienced. A number of navigators suggested that the interference might be attributed to the Southern Chain, but most of them were able to read through it without difficulty. For the majority, the B-signal was the first to fade. The monitoring station experienced no difficulty which could be attributed to interference of the Southern Chain. The performance of the ground stations was satisfactory and the few interruptions of service were of short duration.

Defences.

10. Flak:- Owing to the cloudy conditions, little information of value was obtained as to the strength and disposition of the defences. Some crews encountered moderate and accurate "unseen" fire, including some salvos in the believed vicinity of the target. Light flak fire was slight, and searchlights failed to penetrate the clouds.

Night Fighters:- Although weather conditions en route were such as greatly to hamper fighter activities, Wireless Intelligence reported that approximately 28 sorties were flown by controlled night fighters.

The numbers of interceptions reported were:-

Attacks	1 (0.4%)	
Other Interceptions	9 (3.3%)	. . . Total 10 (3.7%).

Tinsel and Mendrel were used on this operation, the former only for the second time, and A.I.4 have reported that there was much interference on little Screw traffic. The times at which the first interceptions occurred suggest that the enemy early warning system was interfered with.

The bad weather, in conjunction with these countermeasures, resulted in fewer interceptions than are usually expected in this area. The one attack reported concerned a Halifax of 4 Group which was set about by three fighters simultaneously. The crew claims to have destroyed two of these, while the Halifax sustained only minor damage.

Casualties.

11. (a) Number of aircraft missing	9	(3.3%)
(b) Number of aircraft damaged:-		
flak	17	(6.2%)
fighter	1	(0.4%)
not enemy action	4	(1.5%)
(c) Total number of aircraft damaged	22	(8.1%)

the same target when it was attacked last May. This is undoubtedly explained by the comparative ineffectiveness of the night-fighter defences. Only two claims by the latter were overheard, one of which can possibly be identified with observations of an aircraft seen shot down S. of Sedan. One aircraft was shot down, possibly by flak, at Charleroi, one by fighters near Amiens and possibly a second at Mannheim. The cause of the loss of an aircraft seen falling near Cayeux cannot be determined.

Losses may, therefore, be ascribed as 1 possibly to flak, 1 almost certainly and 2 possibly to fighters, and 5 to causes unknown.

MINELAYING.

12. 4 Wellington IVs of 1 Group and 10 Lancasters of 5 Group were despatched on mining operation in the Frisians area. Cloud was based above 2,000 feet and although there was no moon, visibility was good. 13 aircraft reached the target area and 4 mines were laid. The one abortive sortie was due to engine trouble. Two Lancasters sustained slight damage from flak, but no casualties were sustained and all our aircraft returned safely.

BQ/S.26342/1/ORS.
7th February, 1943.

APPENDIX I.

Timing of Attack

13. Pathfinder Force.

No. of aircraft attacking	10 - 0" early	2
" " " "	within planned period	7
" " " "	0 - 20" late	2
		<u>11</u>

Main Force.

No. of aircraft attacking	within planned period	129
" " " "	0 - 20" late	72
" " " "	more than 20" late	8
		<u>209</u>

APPENDIX II.

Weight of Bombs Dropped.

14. By aircraft reporting attack on primary area:-

<u>H.E. 222.1 tons</u>	<u>Incidaries 34.1 tons.</u>
Including (63 x 5,000 lb.)	
(10 x 2,000 lb.)	
(5 x 1,900 lb.)	
(107 x 1,000 lb.)	

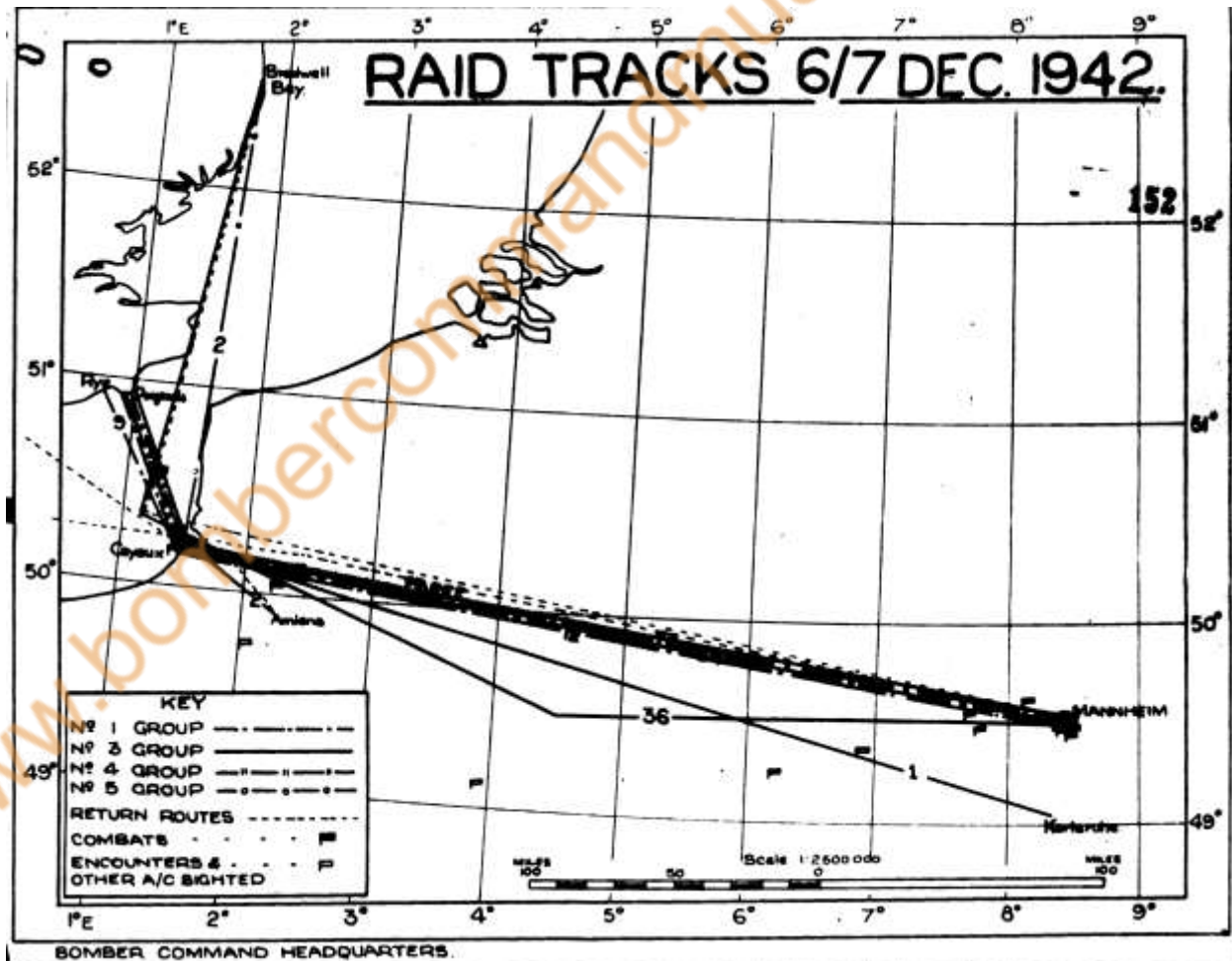
By aircraft reporting attack on alternative area

<u>H.E. 2.2 tons.</u>	<u>Incidaries 6.7 tons.</u>
-----------------------	-----------------------------

No. of aircraft carrying flares only	1
" " " " flares + H.E.	1
" " " " H.E. only	1
" " " " 4lb. incendiaries only.	1
" " " " H.E. + 4lb. incendiaries	1

Target	Gr.	Type	Sorties	Aircraft reporting attack on		Abortive sorties		Missing	Mines laid in primary area	Losses		Interceptions		
				primary area	alternative area	over en. territ.	not over territ.			Flak	fighter	not on. action	attacked	not attacked
BOMBING	P.F.F.	Well.III	6	5	-	1	-	-	-	-	-	-	-	
	P.F.F.	Halifax	7	4	1	1	1	-	-	-	-	-	1	
	P.F.F.	Stirling	4	2	1	1	-	-	-	-	-	-	-	
	P.F.F. (u/t)	Well.III	4	4	-	-	-	-	-	-	-	-	-	
	P.F.F. (u/t)	Halifax	4	2	-	1	-	1	-	-	-	-	-	
	P.F.F. (u/t)	Stirling	6	6	-	-	-	-	-	-	-	-	-	
	1	Well.III	7	5	-	-	2	-	-	-	-	-	-	
	1	Well.IV	15*	11	-	-	3	1	-	2E	-	1B	-	
	1	Lancaster	27	23	-	-	2	1	-	-	-	-	2	
	3	Well.III	6	4	-	-	-	2	-	-	-	-	-	
	3	Stirling	38	31	1	2	4	1	-	5+1E	-	-	1	
	4	Well.III	19	10	-	-	6	1	-	-	-	-	-	
	4	Halifax	55	46	1	1	4	3	-	4+1A0 +1E	1	1E	3	
	5	Lancaster	74	67	1	-	6	-	-	3	-	1+1E	1	
	BOMBING TOTAL			272	220	5	10	28	9	-	12+ 1A0 +4E	1	1+1E +2E	1
MINELAYING														
Prisian islands	1	Well.IV	4*	3	-	-	1	-	6	-	-	-	-	
	5	Lancaster	10	10	-	-	-	-	43	2	-	-	-	
MINELAYING TOTAL			14	13	-	-	1	-	49	2	-	-	-	
TOTAL			286	233	5	10	29	9	49	14+ 1A0 +4E	1	1+1E +2E	1	9

* these 19 a/c were not fitted with Gee.



BOMB PLOT NOT AVAILABLE

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 7/8TH DECEMBER, 1942.Mine-laying (Frisians and Bay of Biscay)Meteorological Advice Submitted to the Command.

1. The midnight frontal positions are estimated as follows: (1) cold from 59°N. 15°E. to north Denmark to Yorkshire to south-west England (2) warm from 59°N. 15°E. to Stettin to Leipzig (3) occluded from 59°N. 15°E. north-westwards. Operational Groups generally expect cloud to be based at about 1,000 feet, but lower locally. Visibility is likely to be moderate, and 4 and 5 Groups may have landing difficulties after midnight. Much low cloud will prevail over Germany, and although good breaks are expected in the Rhine valley, there is likely to be haze in this area. Fog is expected at Milan and Turin, and cloud conditions at Genoa are doubtful. For mining, the Frisians and Heligoland will have cloud based at 1,000 feet, with patches at 600 feet. Little cloud is likely south of La Pallice, but visibility will be moderate; from Lorient to Brest, cloud will generally be based at 1,500 feet.

Sorties

2.	(a)	No. of sorties despatched.....	36
	(b)	" reporting mines laid in primary area.....	33
	(c)	" abortive sorties (technical defect.....2) (weather.....1)	3
	(d)	" aircraft missing.....	0

Weather Experienced

3. A cold front moved rapidly across England during the night, resulting in a short spell of rain, followed by clearing conditions. Ahead of the front, there was much cloud, based at 1,000 feet. Except in rain, visibility was good. En route to the Frisians and over the target area, very variable cloud was encountered. Some reports give no cloud, others 10, 10ths strato-cumulus, based at 1,500-2,500 feet, with patches below 1,000 feet. Much strato-cumulus prevailed towards the French coast, but this broke to small amounts over mining areas. Visibility over all targets was moderate to good. There was no moon.

Results

4. 14 aircraft were despatched on a mining operation to the Frisians and 22 to targets in the Bay of Biscay. All except 3 report reaching their allotted areas, and 122 mines were laid, 76 of these off the Frisians. Some flak was encountered with searchlights at Terschelling and also from various points on the west coast of France, notably in the Bayonne area, where one aircraft sustained minor damage. All our aircraft returned safely.

BC/S. 26342/3/ORS.
24th January, 1943.

MLM/VP.

Mine laying (7/8th December, 1942.)

101

Target	Gp.	Type	Sorties	A/C reporting mines laid in primary area	Abortive sorties (not over enemy coasts)	Missing	Mines laid in primary area	Damage (flak)	Int. explosions (not attached)
FRISIAN ISLANDS	1	Lancaster	4	4	-	-	20	-	2
	1	Well. III	1	1	-	-	2	-	-
	3	Stirling	9	9	-	-	54	-	1
BREST	4	Well. III	7	6	1	-	12	-	-
LA PALICE	3	Well. III	6	5	1	-	10	-	-
N. YONNE	5	Lancaster	5	4	1	-	12	1	1
ST. JEAN DE LUZ	5	Lancaster	4	4	-	-	12	-	-
T O T A L			36	33	3	-	122	1	4

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 8/9th DECEMBER, 1942.

Copy

TURIN : Minelaying.

S U M M A R Y.

1. Turin. Another concentrated and successful attack was made on Turin. 89% of the force despatched (133 aircraft) report having reached the target, where weak defences and clear skies enabled the pilots to bomb with deliberation. Serious damage was again caused to industrial, municipal and residential property at very low cost to our forces. Only one Lancaster failed to return.

2. Minelaying. Extensive sea-mining in the southern North Sea and western Baltic was entrusted to 80 aircraft of 1, 3 and 4 Groups. Of these, 60 report reaching their allotted areas and 218 mines were laid, including 81 in the Kattegat and 54 off the Frisians. Opposition was met from both fleck and fighters and five aircraft failed to return.

Meteorological Forecast.

3. at midnight a cold front will lie from 56o 20'E to 48oN 05'E, then warm to S.W. Ireland.

Bases:- Fit for an early start, but medium and low cloud will increase in the west and southwest, and fog will develop in the east. Operational Groups, especially 1,4 and 5, expect low cloud at 600-1,000 ft. with slight rain or drizzle, during the passage of the warm front between 2000 and 2100 hours. The south coast will be unfit for diversion.

Visibility generally moderate, apart from precipitation.

Routes to N. Italy:- No difficulties should be encountered. Winds on the northern leg 55 m.p.h. from 280o, possibly backing and increasing on return: on the southern leg, winds mainly light and westerly.

N. Germany:- Layer cloud, with a few breaks near the coast and good breaks inland until the frontal belt is reached.

N. Italy:- Fog patches, with small amounts of cloud: at Genoa visibility will be moderate.

Frisians & W. Baltic:- Whole area should be fit for early mining.

TURIN.

Plan of Attack.

4.	Zero hour	2100 hours.
	Period of attack:- Pathfinder Force (27 a/c)	zero-2 to zero+18 mins.
	Main Force (5 Group + P.F.F. u/t)	zero+3 to zero+20 mins.

Routes Briefed:- Base - Cayeux - Amnacy - TURIN - same return.

(for routes taken, see route map).

5. The Pathfinders were divided into "finders" and "illuminators"; the former of which (10 a/c) were each to release a long stick of flares (8 sec. intervals) across the target area as follows:-

- 2 aircraft from 45o09'N 07o39'E. to 45o04'N 07o49'E.
- 3 " " 45o07'N 07o37'E. to 45o02½'N 07o47'E.
- 2 " " 45o06'N 07o35'E to 45o01'N 07o45'E.
- 2 " " 45o04'N 07o33'E to 44o59'N 07o43'E.

These flares were to be dropped on D.R., careful attention being paid to timing.

After positively identifying the aiming point, the "illuminators" were then to release their flares in an arc E. and S. of the city centre, from a position 2,700 yards in a direction 90° through a position 2,700 yards bearing 135° to a point 2,700 yards bearing 180° from the aiming point. This illumination was intended to begin at zero hour and continue at 2-minute intervals for 18 minutes.

6. If, however, it were obvious by 2110 hours (10 minutes after zero hour) that the aiming point had not been found, then the "illuminators" were to revert to the task of "finders", releasing their flares in long sticks to enable some landmark to be identified. Both classes of Pathfinders were to release their photo-flash at the same moment as their first flare. One marker flare (green with red stars) carried by each Pathfinder was to be dropped over the target only if considered necessary to inform others that it had been found with complete certainty.

7. The Main Force was planned to consist of 8 untrained Pathfinders carrying H.E. and approximately 100 Lancasters of 5 Group, five of which were to carry 12,000 lb. H.C. bomb. Two-fifths of the remaining Lancasters were to carry a mixed load of 12,000 lb. H.C. plus 4 lb. incendiaries, and three-fifths a load of 4 lb. incendiaries, all incendiary loads to include one container of the explosive type, fitted with a 2 or 4 minute delay fuse, if available.

8. 5 Group aircraft were not to carry flares. Crews were to be briefed that the primary object of the attack was the destruction of the aiming point and its immediate vicinity.

Navigation Instructions.

9. The wind velocity on the first part of the route was expected to be high, becoming lower and veering on approaching the target. Navigators were therefore advised to make the maximum use of Gee to keep a constant check on these variations in wind velocity and direction.

Sorties

D.	(a)	No. of aircraft despatched	133
	(b)	" " reporting attack on primary area	118 (88.7%)
	(c)	" " abortive sorties (technical defect 13) (sickness of crew 1)	14 (10.5%)
	(d)	" " aircraft missing	1 (0.8%)

Weather Experienced.

11. Bases:- Much cloud, with extensive patches below 1,000 ft., accompanied by drizzle, south of 52°N at first, but above 1,000 feet over most aerodromes by return.

Route to Turin:- 7-10/10ths cloud, tops 4,000 ft. with 8-10/10ths medium cloud above as far as 49°N. Medium cloud cleared completely from this point to the target. Wind at 15,000 ft:- 260-280°/45-50 m.p.h., decreasing southwards.

Turin:- Cloudless, moderate visibility, some haze. Winds at 15,000 ft. 040/10 m.p.h. Surface winds very light easterly. No moon.

Narrative of Attack.

12. 35 Pathfinders and 98 Lancasters of 5 Group were despatched to attack Turin. Conditions were as forecast; there was no cloud but visibility was only moderate owing to haze, and the Pathfinders did well to find the target and illuminate it on time. 118 aircraft report attacking the primary, and numerous fires were started round the aiming-point. Several crews observed bursts from 8,000 lb. bombs. As usual, the defences of the city were very weak, and pilots were able to bomb with deliberation. One aircraft failed to return.

No attacks on alternative targets were reported.

Photographic Evidence.

13. Night photographs taken with bombing:-

(a)	Plotted by ground detail (within 3 miles)	24
	(between 3 and 5 miles)	4
	(outside 5 miles)	3
		31

Results.

20. 80 aircraft of 1,3 and 4 Groups were despatched to lay mines in the southern North Sea and the western Baltic. 60 report reaching their allotted areas and 218 mines were laid including 81 in the Kattegat and 54 off the Frisians. Five aircraft failed to return.

21. There were several observations of aircraft seen shot down in Northern Denmark and the Southern Baltic, but insufficient evidence to show the cause in most cases. However, flak was responsible for one aircraft, which was seen to fall in flames 20 miles N. of Ringjobing, and a second loss at Kertemunde may possibly have been due to the same cause. Five cases of flak damage were reported on return.

22. Approximately 15 sorties were flown by controlled fighters, mainly over S. Denmark, N. Germany and Holland, and 5 interceptions, including 4 attacks, were made. These resulted in considerable damage to two bombers.

23. The causes of the night's minelaying losses may therefore be assessed as 1 aircraft lost to flak, 1 possibly to flak and 3 to unknown causes.

BC/S.26342/ 2 /ORS.
2nd February, 1943.
MLM/IV.

www.bombercommandmuseumarchive.ca

APPENDIX I.Timing of attack on Turin.Pathfinder Force.

No. of aircraft attacking within planned period	21
" " " " late (2")	$\frac{1}{22}$

Main Force.

No. of aircraft attacking early (3").....	1
" " " " within planned period	64
" " " " 0-20" late	$\frac{31}{96}$

APPENDIX II.Weight of Bombs Dropped.

(by aircraft reporting attack on primary area).

H.E. 121.1 tons.Incendiaries 150.9 tons.

including (4 x 8,000 lb.)
 (46x 4,000 lb.)
 (2 x 1,900 lb.)
 (43x 1,000 lb.)

No. of aircraft carrying flares only	6
" " " " flares + H.E.	16
" " " " H.E. only	12
" " " " 4 lb. incendiaries only	46
" " " " H.E. + 4 lb. incendiaries	$\frac{38}{118}$

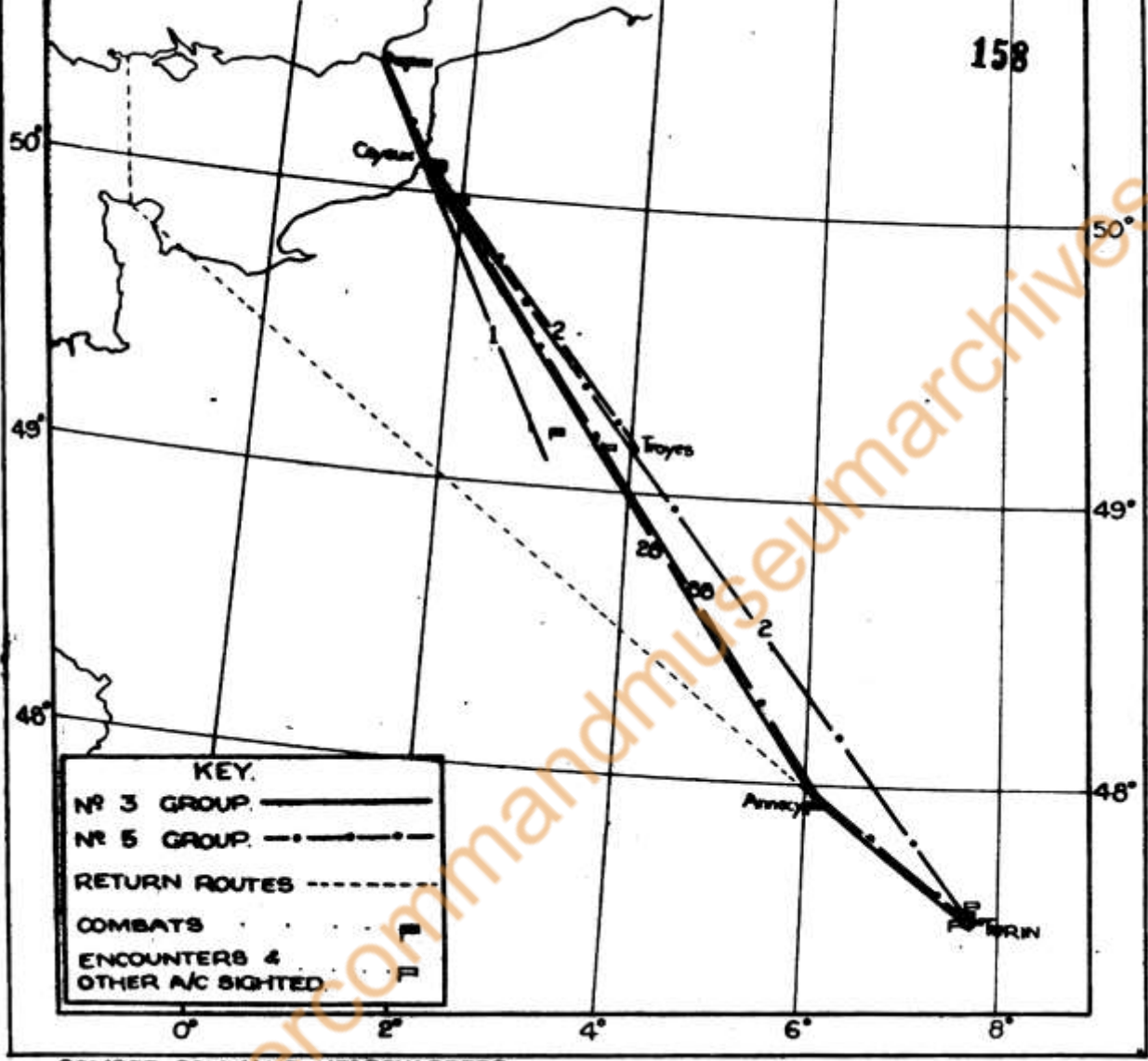
Target	Group	Type	Sorties	aircraft reporting attack on		Aerthetic Sorties		Missing	Mines laid in primary area	Damage			Interceptions	
				primary area	alternative area	over enemy territory	not over enemy territory			flak	fligh- tor	not E/A	attack- ed	not att- acked
Yurin	P.F.P.	Stir.	5	4	-	1	-	-	-	-	-	-	-	1
	P.F.P.	Hal.	8	7	-	1	-	-	-	-	-	-	-	-
	P.F.P.	Well.III	7	6	-	1	-	-	-	-	-	-	-	-
	P.F.P.	Lanc.	7	5	-	1	1	-	-	-	-	-	-	-
	P.F.P.	Lanc.	98	88	-	2	7	1	4	-	1AC + 1E	-	-	3
	P.F.P. (u/t)	Stir.	2	2	-	-	-	-	-	-	-	-	-	-
	P.F.P. (u/t)	Hal.	1	1	-	-	-	-	-	-	-	-	-	-
	P.F.P. (u/t)	Well.III	2	2	-	-	-	-	-	-	-	-	-	-
	P.F.P. (u/t)	Lanc.	3	3	-	-	-	-	-	-	-	-	-	-
	BOMBING	TOTAL		133	118	-	5	9	1	4	-	1AC + 1E	-	-

...../Mineslaying (Contd:)

Target	Group	Type	Sorties	primary area	alternative area	over enemy territory	not over enemy territory	Missing	Mines laid in primary area	flak	fligh- tor	not E/A	attack- ed	not att- acked
<u>Mineslaying</u>														
Frisian Isles	4	Hal	20	19	-	-	-	-	54	1AC	-	1E	1	-
Elbe estuary	4	Well.III	3	2	-	-	1	-	4	-	-	-	-	-
Heligoland Bight	4	Hal.	2	2	-	-	-	-	4	1	-	-	-	-
	4	Well.III	4	2	-	-	2	-	4	-	-	-	-	-
Kattegat	1	Lanc.	10	7	-	-	3	-	41	-	1	-	1	-
	3	Stir.	13	11	1	1	-	-	40	-	-	-	1	-
Copenhagen	1	Lanc.	1	1	-	-	-	-	5	-	-	-	-	-
The Sound	1	Lanc.	5	4	1	-	-	-	20	1AC	-	-	-	-
Great Belt	1	Lanc.	4	4	-	-	-	-	24	-	-	-	-	-
Fehmarn Channel	3	Stir.	4	1	1	1	-	1	3	-	-	-	-	1
Golet Channel	3	Stir.	7	5	-	-	1	1	15	1 + 1AC	-	-	1	-
									1AC	-	-	-	-	-
Langenlandt Belt	1	Lanc.	2	-	-	-	1	1	-	-	-	-	-	-
Kiel Harbour	1	Well.III	3	2	-	-	1	-	4	-	-	-	-	1
Hornsea	3	Stir.	2	-	-	-	1	1	-	-	-	1E	-	-
MINESLAYING TOTAL			80	60	3	2	10	5	218	2+3 AC	1+1 AC	2E	4	2
TOTAL			213	178	3	7	19	6	218	6+3 AC	1+1 AC	1AC + 3E	4	6

RAID TRACKS 8/9 DEC. 1942.

158

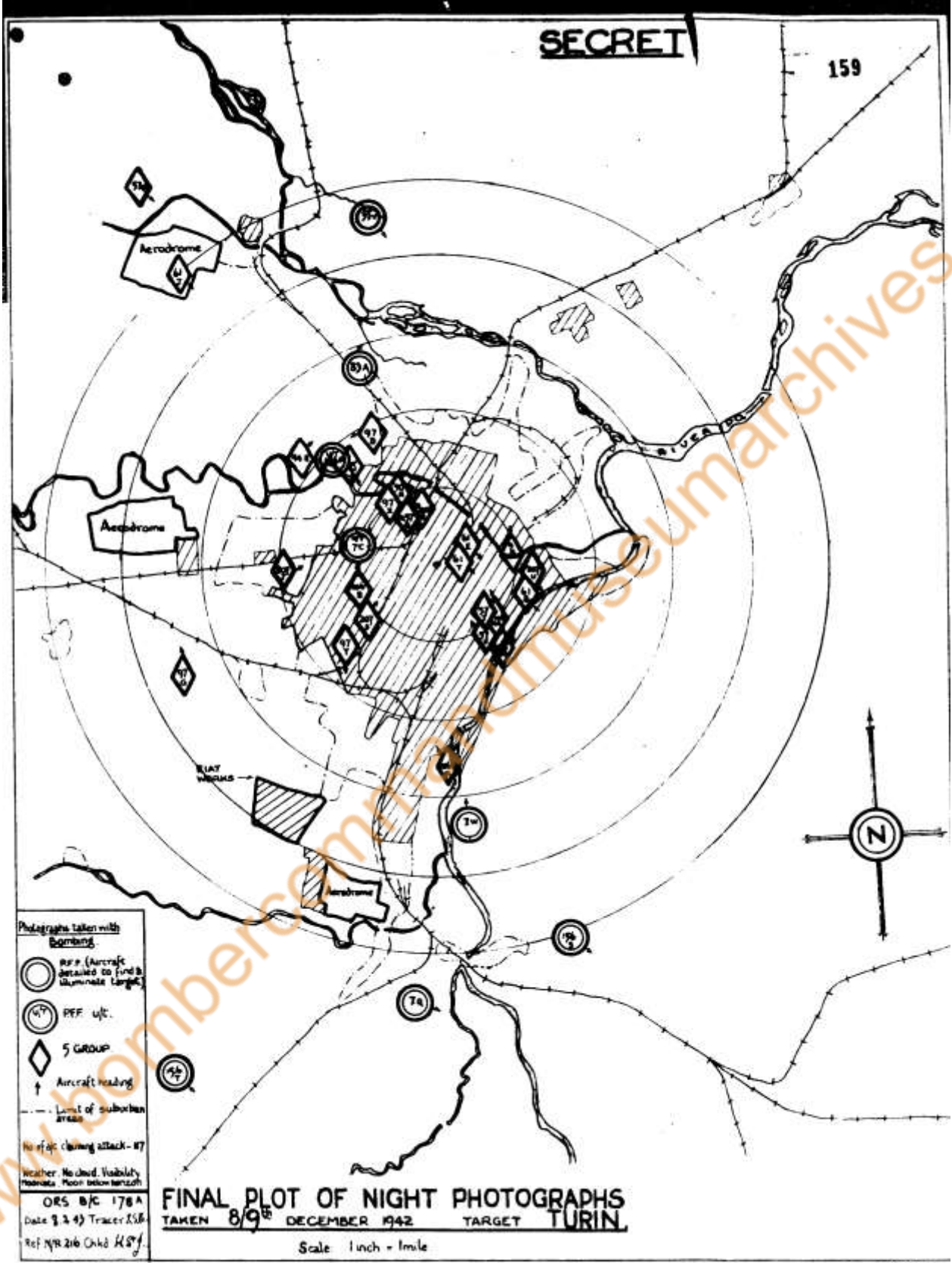


BOMBER COMMAND HEADQUARTERS

www.bombercommandmuseumarchives.ca

SECRET

159



Photographs taken with
Bombing.

○ REF. (Aircraft
detained to find &
illuminate target)

○ REF. alt.

◇ 5 GROUP

↑ Aircraft heading

--- Limit of suburban
areas

No of aircraft attacking - 87

Weather: No cloud, Visibility
Medium (Floor below horizon)

ORS 8/C 178A

Date 8.9.42 Tracer 158

Ref NFR 216 OHO H.S.F.

**FINAL PLOT OF NIGHT PHOTOGRAPHS
TAKEN 8/9th DECEMBER 1942 TARGET TURIN**

Scale 1 inch = 1 mile

www.bombing.com/forums/summaryarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 9/10TH DECEMBER, 1942.TURIN - Minelaying - LeafletsSUMMARYTurin

1. Turin was raided in darkness for the second night in succession. Thick haze caused some trouble in the initial stage of the attack, but continuous illumination was nevertheless established, which enabled 196 (86.5%) aircraft of a force of 227 to bomb the built-up area of the town. There is little doubt that the attack was a success. A daylight reconnaissance, covering the effects of this raid and that of the previous night, shows extensive new damage, officially described by the Italian authorities as enormous.

Three aircraft failed to return.

Minelaying

2. Two Stirlings laid 12 mines off the Frisian Islands, both completing their task without incident.

Leaflets

3. 11 of the 12 aircraft detailed to drop leaflets over France completed their task and returned safely, but one Whitley of 91 Group failed to return from Orleans.

Meteorological Forecast:

4. Midnight front:- warm from 62°N 06°E to 55°N 14°E to Nurnberg.
 Home Bases:- Much cloud, base 1000-2000 feet. Visibility moderate to good.
 Germany:- Much layer cloud with few breaks in N. behind cold front. Good breaks in South.
 Lombardy Plain:- Little or no cloud, local smoke and fog. Alps clear.
 Route:- Much strato-cumulus, tops about 4,000 feet, some good breaks. Wind at 15,000 feet, 230°/15 m.p.h.
 Mining areas:- N.W. France, much layer cloud. Frisians, much strato-cumulus, base 1-2,000 feet.

TURINPlan of Attack

5. Zero hour.....2115
Period of Attack:-
 Pathfinder Force.....2113 to 2131 hours.
 Main Force.....2118 to 2145 hours.
 Routes Briefed:- All Groups base - Cayeux - Amnecy - Turin - same return.

6. The Pathfinder Force, planned to consist of 22 aircraft, was sub-divided into "Finders" and "Illuminators". The "Finders" (8 aircraft) were each to release a long stick of flares (8 second intervals between each flare) two minutes before zero hour, in four directions across the target area, as follows:-

...../over

1 aircraft from 45°09'N. 07°39'E. to 45°04'N. 07°49'E.
 3 aircraft from 45°07'N. 07°37'E. to 45°02'N. 07°47'E.
 3 aircraft from 45°06'N. 07°35'E. to 45°00'N. 07°45'E.
 1 aircraft from 45°04'N. 07°33'E. to 44°58'N. 07°43'E.

7. Illumination of the aiming-point (the main railway station) was to begin at zero hour and to continue at 2-minute intervals for 16 minutes (until 2131 hours). Each of the 14 aircraft detailed for this task was to release its flares in a horseshoe curve around the south-east of the aiming-point, this arc running from a point 1300 yards due east of the north tip of the main railway station through points situated 2000 yards at 140° and 3000 yards at 180° to a final position 3900 yards at 200°, from the reference point. Flare-fuses were to be set without regard to the height of the target (approximately 1,000 feet) to ensure igniting at a low level without causing a reflected flare from the heavy smoke-haze which was expected. All Pathfinders were to carry one marker flare (red, emitting green stars), to be dropped over the target only if considered necessary to inform other P.F.F. crews that the target had been found with complete certainty.

8. The Main Force was planned to include aircraft of 1,3,4, and 5 Groups, plus approximately 9 untrained Pathfinders. In each Group approximately two-thirds of the bomb-load was to be composed of 4 lb. incendiaries (with 6% of the explosive type if available), the remaining one-third consisting of H.E. bombs, including 2 x 8000 lb. H.C. carried by two Lancasters of 5 Group. Aircraft of 1 Group were recommended to fly high on the outward route and low on the return journey, in view of the high wind speeds expected.

Navigational Instructions

9. Crews were instructed that the southern chain would operate from 1500 to 2359 hours and the eastern chain from 2359 until after the end of the operation, the change-over from southern to eastern chain occupying about 1 minute, during which the pulses would move around the screen.

Sorties

10.	(a)	No. of aircraft despatched.....	227
	(b)	No. of aircraft reporting attack on primary area.....	196(86.5%)
	(c)	No. of abortive sorties	{ technical defect.....25
			{ sickness of crew..... 1
			{ late.....1).....
	(d)	No. of aircraft missing.....	27(11.9%)
	(e)	Result not known (a/c crashed on return).....	3(1.3%)
			1(0.3%)

Weather Experienced

11. Turin:- No cloud but thick haze. Visibility poor.

Route to Turin:- 10/10ths layer cloud, base 2,000 feet, tops 4,500 feet over England, breaking to small amounts over the Channel. Little or no cloud over France, increasing towards the Alps, then clearing to nil over the Lombardy Plain.

There was no moon.

Narrative of Attack

12. 227 aircraft of 1,3,4,5, and P.F.F. Groups took off to attack Turin for the second successive night. Little cloud was encountered en route, and the sky was clear over the target, but a thick haze obscured ground features. Only three of the 20 Pathfinders arrived at the detailed time, and consequently the attack opened poorly. Luckily the continuity of the illumination was not seriously disturbed, and later aircraft were easily able to identify the built-up area of the town. In all, 196 aircraft report having bombed the target, and there seems little doubt that the attack was a success. Three particularly large fires were seen in the centre of the town, which from all accounts received the main weight of the attack, and one pilot detailed to make a late reconnaissance of the target reported 30 major fires in the built-up area. The Italian communique admitted that damage was "enormous". Three aircraft failed to return.

No alternative targets were attacked.

...../Photographic

Photographic Evidence

13. Night Photographs taken with Bombing:-

- (a) Plotted by ground detail { within 3 miles.....22 }
 { between 3 and 5 miles.....11 }
 { outside 5 miles.....6 }.....39
- (b) Unplotted { with ground detail.....11 }
 { without ground detail, but with fire }
 tracks that might be plotted.....76).....87

The evidence from night photographs suggests that the main weight of the attack fell on the western part of the city. Numerous sticks of incendiaries and several H.E. incidents are recorded, together with a considerable amount of smoke, which at times obscured ground detail. Some flares were photographed slightly west of the target in the earlier stages, and there is evidence that others were dropped shortly before 2209 hours, 38 mins after the end of the P.F.P. planned period of attack. These photographs show considerably less cloud than was experienced on previous attacks on this target. The smoke was dispersed by a fresh or strong wind, varying from north to north-east.

14. Day Reconnaissance:-

The P.R.U. cover was obtained on 11.12.42 and includes the effects of the previous raid on the night of 9/10th December, when 133 aircraft reported attacking the target. Some 25 industrial plants are shown to have been damaged, including six more of the Fiat plants, producing machine tools, arms, aero-engines, Diesel engines, lorries and steel respectively. The State Arsenal in Piazza Borgo Doro was partially gutted, and Military Barracks in various parts of the town were hit. A number of large public buildings were destroyed or damaged, including the Municipal Offices, and 40 acres of residential property were devastated, principally by H.E.

Navigational Aids

15. Signals were appreciably weaker than on the previous nights, the average range being 376 miles, and the maximum 490 miles. The latter was obtained with a fixed aerial; trailing aeriels were generally ineffective. Unwanted signals appeared over the Channel and there were other apparent signs of jamming. The Eastern Chain was in operation from 2359 hours to assist in homing and was pronounced very successful.

Defences

16. Flak:- No change of importance was noticed in the strength or accuracy of the defences compared with previous nights. Most of the searchlights dowsed as the attack developed. The light A.A. barrage was more sustained than on previous occasions, but failed to constitute an effective deterrent; the guns appeared to be situated round the perimeter of the target area and also up the valley of the river Dora Riparia. Between Paris and Chalons-sur-Marne, approximately 12 different aircraft were seen burning on the ground. This figure bears no relation to our losses on this night, and presumably constitutes an ingenious subterfuge on the part of the enemy, aimed at giving aircrews the impression that high casualties were being sustained.

Night Fighters:-

17. Number of interceptions reported....(a) attacks.....1
 (b) other interceptions 6 Total
 7(3.1%)

In spite of darkness, some fighter opposition was attempted over France, mainly on the outward journey, from German-controlled fighters. These were heard to make 6 sorties and 4 attempted interceptions. The seven interceptions reported by returning bombers all took place over France, mostly in the Paris area. The only attack was made on a Lancaster, which shot down the Me. 109 concerned in flames, without itself being damaged.

18. Tinsel and Mandrel were in use, but the amount of opposition on this route was insufficient to enable their effects to be judged.

Casualties

19. Three aircraft failed to return. Observations of our crews tend to confirm the claims of German sources that their defences in occupied territory were responsible for these. All the aircraft were lost on the outward route: two were probably shot down by fighters south of Troyes and south-east of Paris, and the third may have been destroyed by flak south-west of Dijon. No serious damage was sustained from flak over the target, and the only fighter attack caused no damage. Two Lancasters of 5 Group were damaged beyond repair on landing.

MINELAYING

20. Two Stirlings of 3 Group were detailed to lay mines off the Frisians. Both completed their task without incident. 12 mines were laid.

LEAFLETS

21. 12 aircraft were detailed to drop leaflets over France. 11 completed their task and returned safely, but one Whitley of 91 Group failed to return from Orleans. The cause of loss is unknown.

BC/S. 26342/6 /ORS.
6th February, 1943.

MM/VF.

APPENDIX I

Timing of Attack

Pathfinder Force

No. of aircraft attacking early(6').....	1
" " " within planned period.....	12
" " " 0-30' late.....	4
	<u>17</u>

Main Force

No. of aircraft attacking within planned period.....	124
" " " " 0-30' late.....	51
" " " " more than 30' late.....	4
	<u>179</u>

APPENDIX II

Weight of Bombs Dropped

(by aircraft reporting attack on primary area)

H.E: 144.6 tons
including 1 x 8,000 lb: 47 x 4,000 lb
2 x 2,000 lb: 2 x 1,900 lb:
87 x 1,000 lb.

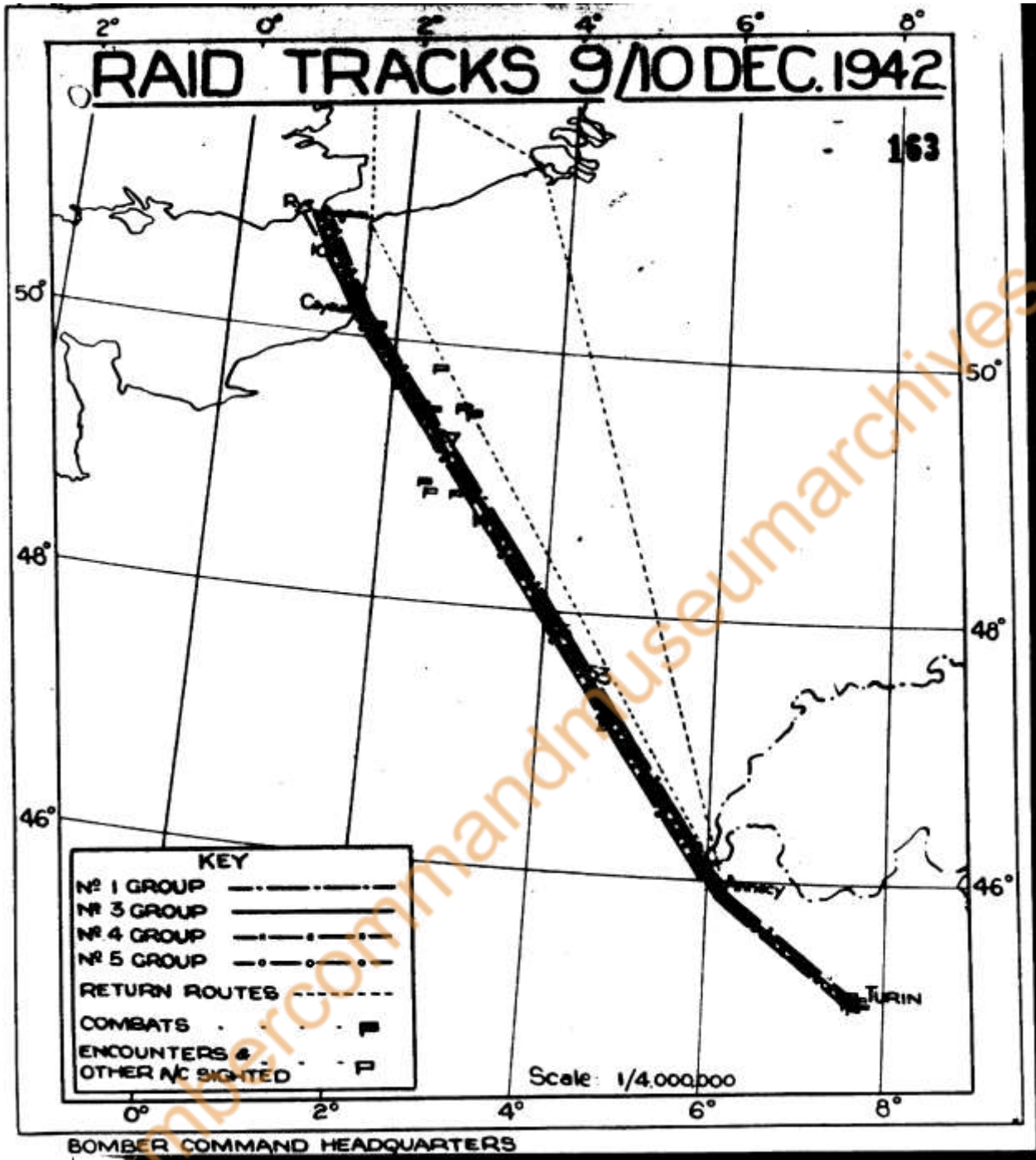
Incendiaries: 251.9 tons

Target	Group	Type	Sorties	Aircraft reporting attacks on		Abortive Sorties		Missing	Result not known	Damage			Interceptions	
				primary area	alternative area	over en. territ.	not over en. territ.			Flak	Fighter	not en. action	attacked	not attacked
CURIN	P.F.F.	Stirling	5	5	-	-	-	-	-	-	-	-	-	-
	P.F.F.	Lancaster	4	3	-	-	1	-	-	-	-	-	-	-
	P.F.F.	Well.III	4	4	-	-	-	-	-	-	-	-	-	-
	P.F.F.	Halifax	7	5	-	-	2	-	-	-	-	-	-	-
	1	Well.III	2	1	-	-	-	1	-	-	1B	-	-	1B
	1	Well.IV	11*	11	-	-	-	-	-	-	-	-	-	-
	1	Lancaster	26	24	-	-	2	-	-	-	-	-	-	3
	3	Well.III	7	5	-	-	1	1	-	-	-	-	-	-
	3	Stirling	20	18	-	-	2	-	-	-	-	-	-	1
	4	Well.III	14	12	-	-	2	-	-	-	-	-	-	-
	4	Halifax	39	33	-	-	4	-	2	-	1AC	-	-	-
	5	Lancaster	82	69	-	-	11	1	1	6	2+2E	1	2	
	P.F.F.(w/t)	Lancaster	3	3	-	-	-	-	-	-	-	-	-	-
	P.F.F.(w/t)	Well.III	2	2	-	-	-	-	-	-	-	-	-	-
	P.F.F.(w/t)	Halifax	1	1	-	-	-	-	-	-	-	-	-	-
COMBING TOTAL			227	196	-	2	25	3	1	8	-	2+1AC +1B+2E	1	6
RELAYING														
Malvin Isles	3	Stirling	2*	2	-	-	-	-	-	-	-	-	-	-
W/FLTS														
Wilson	91	Witley	5*	4	-	-	-	1	-	-	-	-	-	-
Ellis	93	Well.III	7	7	-	-	-	-	-	-	-	1B	-	-
T O T A L			241	209	-	2	25	4	1	8	-	2+1AC +2B+2E	1	6

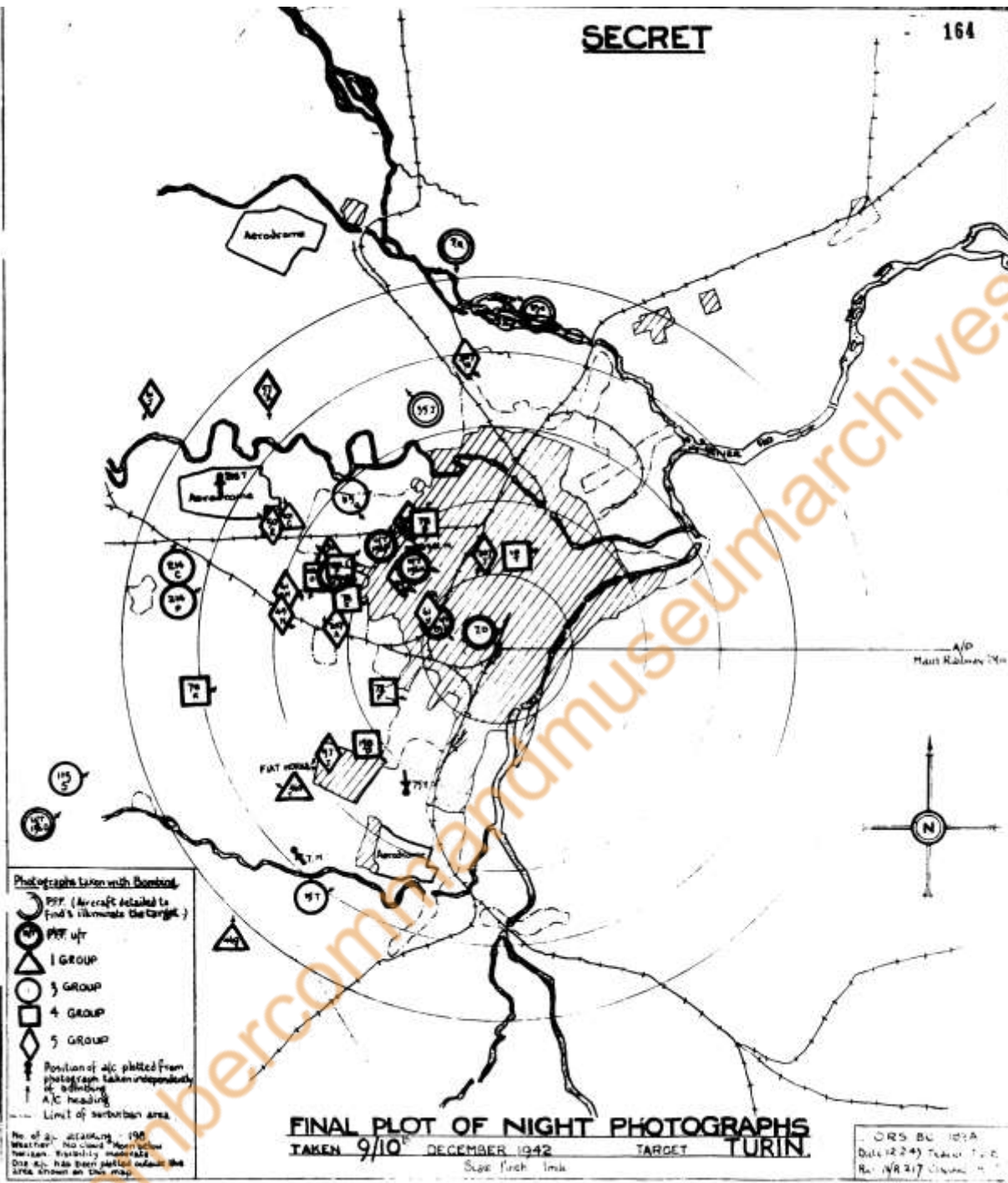
* These W/U were not fitted with Gee

* 12 mines were laid.

www.bombercommandmuseumarchives.ca



www.bombardiercommandmuseumarchives.ca



www.bombingmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, - 11/12th DECEMBER, 1942.TURIN: Minelaying: LeafletsSummary

1. Turin 82 aircraft set out to attack Turin, but the majority had to turn back owing to bad weather over France. 28 reported attacking the target, but visibility was so poor that accurate pinpointing was impossible, and most aircraft bombed built-up areas. One pilot claims to have hit a factory north of the Fiat works with a 4,000 lb. bomb. 3 aircraft did not return.

Minelaying 21 out of 26 aircraft laid mines in the Bay of Biscay and off the Frisians. All returned safely and without damage.

Leaflets Four out of five aircraft dropped leaflets in the Rouen area. All returned safely.

Meteorological Forecast

2. 0930 hours Midnight frontal positions:- (1) cold from 60°N 06°E to 55°N 10°E to Frankfurt to Lyons (2) cold from north-east Scotland to Amsterdam to 47½°N 05°E to Bordeaux.

Home Bases: Cloud breaking and clearing. Moderate visibility.

France:- Convection cloud with showers in N.W. Ireland and over Low Countries, cloud breaking and clearing behind the cold front. Much medium and broken low cloud between the two fronts.

Italy:- Broken medium cloud over Lombardy Plain. Little or no low cloud at Milan and Turin. Some low cloud at Genoa.

1255 hours Home bases:- All probably fit for early take-off, except locally in 1 and 4 Groups, and for return apart from local smoke.

Turin:- Medium cloud only, amount uncertain, possibly 10/10ths. Visibility poor, but no worse than of late.

Route to Turin:- Frontal conditions doubtful, may be no trouble at 15,000 feet; risk of solid cloud at times. Peaks of western Alps covered by cloud. Average wind at 15,000 feet, S.W. 55 m.p.h.

Mining areas:- West coast of France suitable, with some showers; cloud base not generally below 1,500 feet. Frisians will have best conditions in second half of night, after passage of cold front.

1610 hours Home Bases:- All fit for take-off, except very locally in 4 Group. Many aerodromes should be fit up to 0200 hours at least, especially in East Anglia and Yorkshire. Visibility troubles elsewhere.

Turin:- Very uncertain, probably poor visibility under medium cloud, with risk of thick fog persisting.

1630 hours (Pamps report) Turin:- Little hope of less than 10/10ths medium cloud tonight.

...../TURIN

Weather Experienced

Home Bases:- Mainly cloudy to overcast, with breaks, especially in the north. Periodic outbreaks of rain, bringing cloud base below 1,000 feet in many districts. Fairly widespread fog and mist developed north of the Wash during the night.

French coast to Alps:- Cloud increasing and thickening from French coast to N. of Alps - 8-10/10ths, tops above 15,000 feet. Static, heavy clear icing.

Winds:- 13,000 feet - 150/60 m.p.h.

15,000 " - 220/34 m.p.h.

210/50 m.p.h.

19,000 " - 210/65 m.p.h.

Turin:- Broken layers of cloud. Very variable thin strato-cumulus, tops 6-9,000 feet. 6/10ths medium cloud, 8-9/10ths high cloud, base 18,000 feet. Moon 21% of full, setting shortly before zero hour.

Narrative of Attack

1. 82 aircraft set out to attack Turin, but bad weather prevented the success of previous raids from being repeated. Thick cloud, with tops above 25,000 feet, was encountered over France; a number of aircraft were driven back by icing, and only 6 report attacking the target. Pinpointing was out of the question. One Lancaster spotted a factory through the gap in the cloud and claimed a direct hit with a 1,000 lb bomb, but most pilots bombed built-up areas in the estimated area of the refinery. 3 aircraft failed to return.

Two further sorties report reaching the target area and bombing alternative targets:- (1) Castellamonte, 20 miles from Turin; (2) an unidentified target in Italy, where the bombs were seen to burst near searchlights and some fires. Four of the abortive sorties jettisoned their loads over enemy territory.

Photographic Evidence

1. 10 aircraft returned photographs taken with bombing. Two were plotted near the target, recording H.E. and incendiary incidents, and thus some aircraft, at least, attacked the target. The remaining eight photographs show open country, in several cases obscured by dense cloud.

Navigational Aids

2. Average Gee Range: 323 miles. Maximum range: 422 miles. These figures are considerably less than usual for Italian raids. The Eastern Chain operated effectively from 2345 hours to facilitate homing.

Defences

3. Flak:- No fresh information was obtained regarding the defences of Turin. Heavy flak was active on the French coast in the Boulogne-Calais area, and also south of the Alps, where one aircraft was seriously damaged.

Fighters:- A few controlled night fighters operated near Paris and in E. France, but only 3 aircraft returning from Italy had been intercepted. No attacks were reported and no combats or claims to success were overheard by Wireless Intelligence.

Casualties

.. No. of aircraft missing.	3 (3.7%)
" " " damaged (a) flak	3 (3.7%)
" " " (b) not enemy action.	3 (3.7%)

There were only two observations on this night of aircraft seen destroyed. One was of an aircraft shot down at 0005 hours on the homeward journey, near Boulogne, possibly by flak, but there is no confirmation of this. The other was of a loss to flak at Turin at 2100 hours, which is possibly confirmed by an Italian claim. The cause of losses may therefore be assessed as 1 aircraft probably lost to flak and to causes unknown.

...../In addition two

In addition two Halifaxes were totally destroyed on return. One was unable to maintain height on three engines and came down in the sea off Filey Bay, all the crew being saved: the other crashed in Yorkshire and was burnt out, with all the crew killed. The cause was not known.

MINELAYING

15. Nine aircraft were detailed on a mining operation to the Frisians and 17 to the Bay of Biscay. 21 reached their targets and laid 42 mines. No damage was sustained and all our aircraft returned safely. Four sorties were abortive on account of weather conditions and one on account of a technical defect.

LEAFLETS

16. Four Well.III's of 92 Group were detailed to drop leaflets in the Rouen area. One had to return early owing to a technical defect, but the other three completed their task without incident. No damage was sustained.

MLM/EMD/JT
BC/S.26342/2 /ORS
15th February, 1943

APPENDIX I

Timing of Attack

17. Pathfinder Force:

No. of aircraft attacking early (5")	1
" " " " within planned period	3
	<u>4</u>

Main Force

No. of aircraft attacking 20-0" early	2
" " " " within planned period	9
" " " " 0-30" late	12
'Time unknown (a/c crashed on return)	1
	<u>24</u>

APPENDIX II

Weight of Bombs Dropped

(a) By aircraft reporting attack on primary:-

H.E.: 24.1 tons Incendiaries: 7.0 tons
(including 7 x 4,000 lb and 22 x 1,000 lb).

No. of aircraft carrying flares only	1
" " " " flares + H.E.	3
" " " " H.E. only	3
" " " " 4 lb. incendiaries only	4
" " " " H.E. + 4lb. incendiaries	17
	<u>28</u>

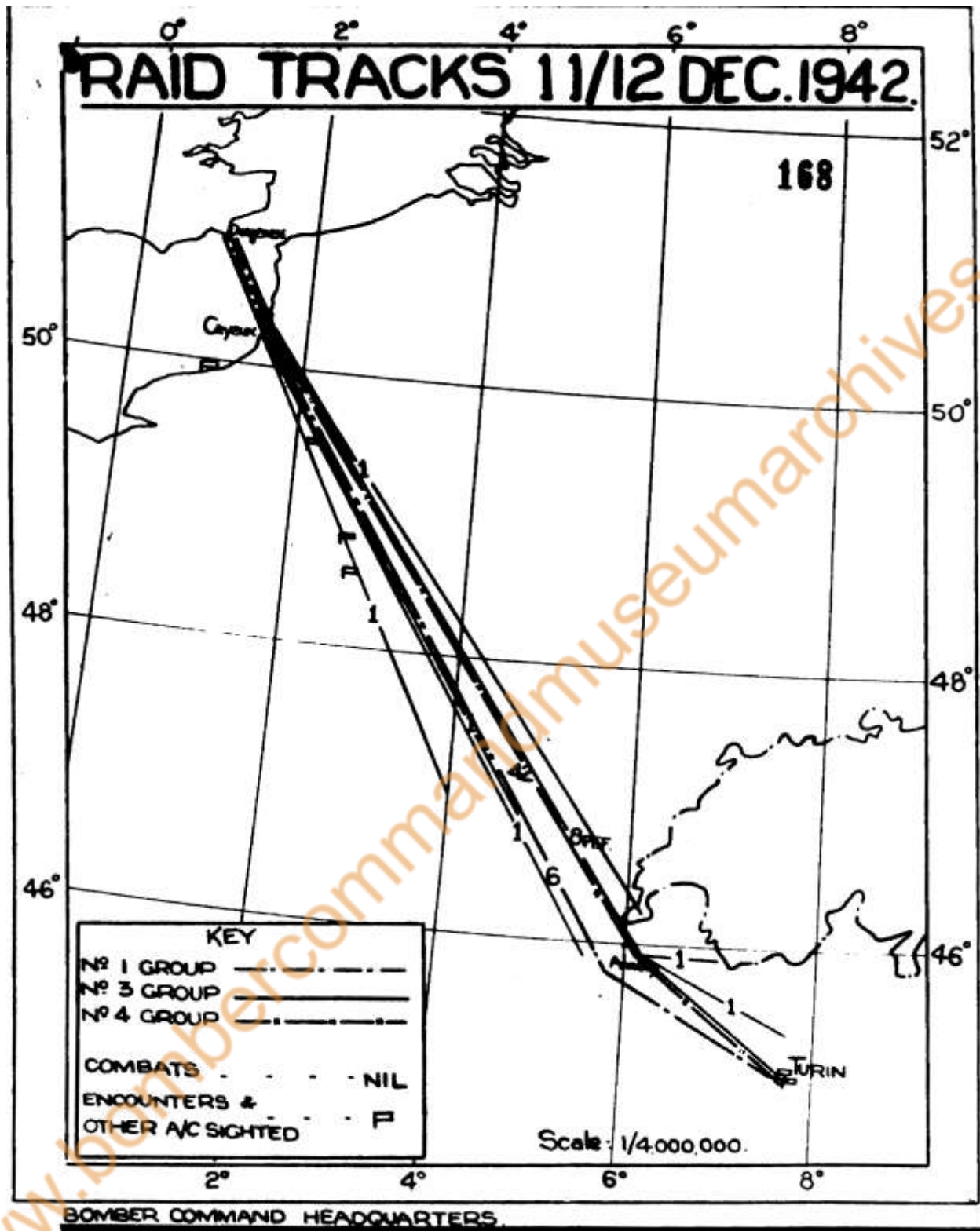
(b) By aircraft reporting attack on alternative targets:-

H.E. 4.0 tons. Incendiaries: Nil.

Target	Group	Type	Sorties	Aircraft reporting attack on		Abortive Sorties		Missing	Lines laid in primary area	Damage			Interceptions	
				primary area	alternative area	over en. territ.	not over en. territ.			Flak	fighter	not D/A	attacked	not attacked
TURIN	P.F.F.	Stirling	5	1	-	3	-	1	-	-	-	-	-	-
	P.F.F.	Well.III	6	1	-	-	5	-	-	-	-	-	-	-
	P.F.F.	Halifax	4	-	1	3	-	-	-	-	-	-	-	-
	P.F.F.	Lancaster	3	2	-	1	-	-	1	-	-	-	-	-
	1	Lancaster	14	6	-	6	2	-	-	-	1B	-	-	-
	4	Halifax	42	15	-	12	13	2	-	1+1E	-	2E	-	2
	P.F.F.(w/t)	Stirling	3	-	-	3	-	-	-	-	-	-	-	-
	P.F.F.(w/t)	Halifax	2	1	-	1	-	-	-	-	-	-	-	-
	P.F.F.(w/t)	Lancaster	3	2	1	-	-	-	-	-	-	-	-	-
BOMBING TOTAL			82	28	2	29	20	3		2+1E	-	1B+2E	-	3
NINE LAZING														
Prison Camp	4	Well.III	9	6	-	3	-	-	12	-	-	-	-	-
Lorient	1	Well.IV	5*	5	-	-	-	-	10	-	-	-	-	16*
St. Nazaire	1	Well.IV	6*	4	-	2	-	-	8	-	-	-	-	-
La Pallice	3	Well.III	6	6	-	-	-	-	12	-	-	-	-	1
NINE LAZING TOTAL			26	21	-	5	-	-	42	-	-	-	-	1
LE FLATS														
Zouen	92	Well.III	4	3	-	1	-	-	-	-	-	-	-	1
TOTAL			112	52	2	35	20	3	42	2+1E	-	1B+2E	-	5

* These 11 a/c were not fitted with Gee.

www.bombercommandmuseumarchives.ca



BOMB PLOT NOT AVAILABLE

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 12/13th DECEMBER, 1942.Minelaying (Frisians).Meteorological Advice Submitted to the Command.

1. The estimated frontal positions at midnight are as follows:-
 (1) cold from 60°N. 22½°E. to 50°N. 18°E. to Trieste to 43°N. 10°E.
 (2) occluded from 54°N. 10°W. to Dublin, becoming warm to Cherbourg to south of the Bay of Biscay. Home bases will enjoy fair weather early in the night, with medium cloud, but later, rain will spread from the west, affecting Operational Groups by midnight. Cloud base should, however, remain above 1,000 feet till 0200-0300 hours in south-east England and East Anglia. Much convection cloud with showers is expected over the North Sea; inland over Germany there will be broken layer cloud, with moderate visibility. Conditions over North Italy are doubtful, owing to a development over the Gulf of Genoa; if this moves eastwards, there is an even chance of cloud being well broken over the Plain of Lombardy by about 2100 hours. No difficulties should be encountered en route, apart from a possible outbreak of rain over high ground to the north of the Alps. The Frisians should be fit for minelaying after 1900-2000 hours. Further east, considerable cloud will prevail at 1,000-1,500 feet, with patches below and intermittent rain.

Sorties.

2. (a) No. of aircraft despatched..... 15
 (b) " " " reporting mines laid in primary area14
 (c) " " abortive sorties (technical defect).... 1
 (d) " " aircraft missing 0

Weather Experienced.

3. Home bases experienced much low cloud with rain during the first half of the night. This cleared temporarily after midnight, but later a further deterioration spread from the west. 8-10/10ths cloud was encountered en route to the Frisians, based at 1,500 feet, but this cleared to nil over the target area, where visibility was good. The moon was above the horizon and 31% of full.

Results.

4. 9 Wellington IV's of 1 Group and 6 Wellington III's of 3 Group were despatched on a mining operation in the Frisians area. Except for one Wellington IV which had to return early owing to a technical defect, all the aircraft reached the target area and returned safely after completing their task. 28 mines were laid. Light flak and machine-gun fire were experienced from several of the Frisian Islands, and one Wellington III sustained minor damage. A Wellington IV was approached by an enemy aircraft north of Schiermonnikoog, but took successful evasive action.

C/S. 26342/3/ORS.
 14th January, 1943.

M/PVD.

MOST SECRET.

NIGHT RAID REPORT NO. 220.

COPY NO. 16

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 13/14th DECEMBER, 1942

Minelaying (Lorient and St. Nazaire).

Meteorological Forecast.

1. Home bases in Operational Groups should remain fit all night, with at worst 10/10ths cloud above 1,000 feet during rainy periods. At midnight, an occluded front will lie from Hamburg to Passau to Mannheim, clearing later over the Ruhr to well broken medium and convection cloud. Further south there will be much medium and low cloud with rain, breaking over Italy. The Bay of Biscay may be fit for mining, although the situation is difficult to predict owing to lack of information; frontal conditions are expected, with 10/10ths strato-cumulus at 1,000 feet and moderate visibility. Much low cloud with rain will prevail over Heligoland and the western Baltic.

Sorties.

2.	(a)	No. of aircraft despatched (Wellington IV's of 1 Group) ..	6
	(b)	" " " reporting mines laid in primary area ...	2
	(c)	" " abortive sorties (technical defect.....1)	}..... 4
		(weather.....2)	
		(sickness of crew.....1)	
	(d)	" " aircraft missing	0

Weather Experienced.

3. 10/10ths cloud was encountered over the Bay of Biscay, with base varying from 500 to 2,000 feet. Visibility was generally poor. The moon was above the horizon and 42% of full.

Results.

4. 3 Wellington IV's of 1 Group were despatched on a minelaying operation to Lorient and 3 to St. Nazaire. Conditions were very bad but 2 aircraft succeeded in reaching their objectives. 2 mines were laid in each area. All our aircraft returned safely, and no damage was sustained.

BC/S. 26342/2/ORS.
24th January, 1943.

MLM/PVD.

MOST SECRET.

NIGHT RAID REPORT NO. 222.

COPY NO. 16

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 15/16th DECEMBER 1942.

Mine-laying (Lorient & St. Nazaire).

Metereological Forecast.

At midnight a cold front will lie from Shetland to the Frisians to 50°N. to the Western Alps. Much layer cloud will prevail over the Plain of Lombardy. It may have 5/10ths. strato-cumulus and well broken medium cloud, but there is a threat of 10/10ths. low cloud from the cold front, with freezing level 1,500 ft. In the Hamburg-Kiel area there is less threat of low cloud but more of medium cloud. The Ruhr may be possible late in the night, but cannot be guaranteed owing to the slow movement of the front. Heligoland should be fit for mining before the front arrives, and the Frisians after it has passed through. Over north-west France, operations will be based at 1,500 feet, with some breaks and heavy showers. At home bases, operations in 4 Group, visibility will be 2-3 miles for an early take-off. A rain area in the West will affect western bases at midnight and East Anglia at 0200 hours with 10/10ths. at 1,000 feet over an area which cannot be specified; but these conditions should only last for about an hour.

Statistics.

(a)	No. of aircraft despatched (Wellington III's of 3 Group).....	5
(b)	" " " reporting mines laid in primary area	5

Weather Experienced,

Very variable amounts of cloud were encountered off north-west France, only 4-8/10ths. at 1,500-2,500 feet, but occasionally 10/10ths. at 1,000 feet or below with showers. Visibility was generally good. The moon was above the horizon and half full. At home bases, a belt of low cloud and rain spread across the south and east coasts during the first part of the night. Later, conditions improved and visibility became moderate to good.

Results.

3 Wellington's of 3 Group were despatched on a mine-laying operation to St. Nazaire and 2 to Lorient. All reached their targets and returned safely. 5 mines were laid off St. Nazaire and 4 off Lorient, one hanging up over the former area. No damage was reported and no damage or casualties were sustained.

S. 26342/2/ORS.
16th January, 1943.

W.P.D.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 16/17th DECEMBER, 1942.SUMMARY.

Diepholz. Eight Stirlings of 3 Group were despatched to attack Diepholz alone. Three attacked the primary and three alternative targets in any. To date there is no evidence as to the success of the operation. Aircraft failed to return.

Mine-laying. 20 aircraft were detailed to lay mines in the Bay of Biscay. Reached their targets and 44 mines were laid. No aircraft was lost, but crashed while taking off and was destroyed.

Meteorological Forecast.

0930 hours Midnight frontal positions:- (1) occluded from Shetlands to Ruhr to W. Alps; (2) quasi-stationary from Oslo to Denmark, then southwards; (3) cold from Sweden southwards.

Bases:- West of front (1) broken convection cloud with squally showers. Other fronts may travel from west to east.

Germany:- East of front (1) much cloud everywhere. Gales with low cloud rain over North Sea.

Barry Plain:- Much cloud. Western Alps covered.

1250 hours.

Bases:- Clearance from west; most stations in Operational Groups should be fit by 1900 hours with broken cloud at 1,500 feet or higher, and all bases by 2200 hours.

to W. France:- Squally showers, particularly in W. Channel. Cloud base 1,000 feet but lower in showers. Front should clear in S.W. France about midnight, when conditions will become similar to those further north.

Germany:- Fairly solid cloud from English coast to beyond Hamburg, possibly with good breaks in low cloud early over Ruhr and Emden. Cloud base very low, below 1,000 feet, and freezing level will drop from 5,000 feet over bases to 500 feet over Hamburg area.

1615 hours.

Bases:- Clearance from west should reach 4, 91 and 92 Groups about 2000 hours, and East Anglia should be completely cleared by 2400 or 0100 hours. Much cloud at 1,000 feet east of front; west of front, broken skies with cloud below 1,500 feet. Local rain later, particularly in S.W.

at France:- As this morning. Front should pass La Pallice at about midnight and clear soon afterwards.

DIEPHOLZ.

(a)	No. of aircraft despatched	8
(b)	" " reporting attack on primary area	3
(c)	" " alternative area	3
(d)	" abortive sorties (hit by flak)	1
(e)	" aircraft missing	1

Weather Experienced.

7. Home Bases:- Slight rain with patches of low cloud in Eastern England after dusk. Low stratus increased during the night south-east of a line Number. Bristol with local rain in S. and S.W. Moderate visibility.

8. Route:- Thick frontal cloud to Dutch coast, base 1,200 feet, moderate rise in cloud at 8,000-10,000 feet; then clear. Wind at 8-10,000 feet, 190-200/30 m.p.h.

9. Diepholz Area:- Well broken medium cloud. Good visibility. Moon 73% full. Wind at 1,000 feet, 180-190/40-45 m.p.h. Surface wind, S.S.E./10 mph.

Results.

10. Eight Stirlings of 3 Group were despatched on a cloud cover operation in the Diepholz area. Three reported attacking the primary, but no results could be observed. Three pilots attacked alternative targets, viz: (1) Damme (2) Military camp at Dalum (3) Furstenau. One aircraft was hit by flak and had to jettison its load east of Callantsog; the remaining aircraft failed to return. The cause of loss is unknown. One aircraft claims to have shot down in flames one of three Me.109's which attacked it. In all, four of the returning Stirlings were damaged, 2 by flak and 2 by fighters.

MINELAYING.

- | | | | |
|-----|-----|---|----|
| 11. | (a) | No. of aircraft despatched | 20 |
| | (b) | " reporting mines laid in primary area | 11 |
| | (c) | " abortive sorties (weather..... 5) | |
| | | (technical defect 3) | |
| | | (cause unknown (crashed on)..... 9) | |
| | | (take-off 1) | |
| | (d) | " aircraft missing | 0 |

Weather Experienced.

12. Route to West France:- Well broken cumulus and strato-cumulus over Channel, becoming 9-10/10ths towards target, with light clear ice at 6000 feet and static. Wind at 2,000 feet, 210/30 m.p.h.

13. Bay of Biscay:- Rainstorms and 10/10ths cloud, base 600-1,000 feet. Visibility poor.

Results.

14. 20 aircraft were detailed to lay mines off the west coast of France. 11 report reaching their allotted areas and 44 mines were laid, 40 of these off the mouth of the Gironde. No aircraft was missing, but one Stirling of 3 Group crashed while taking off and all the crew were killed. The cause of the accident is unknown. No other damage was sustained.

EC/S.26342/6 /ORS.
7th February, 1943.
MLM/VE.

Target	Group	Type	Sorties	Aircraft report attack on		Subsive sorties		Missile	Missile in primary area	Damage		Interceptions		
				primary area	altern-ative area	over en. territ.	not over en. territ.			flak	fighter	not R/W	att-acked	not att-acked
<u>MINELAYING</u>														
Brent	4	Well.III	5	2	-	-	3	-	4	-	-	-	-	-
Lorient	4	Well.III	4	-	-	-	4	-	-	-	-	-	-	-
Gironde	1	Lancaster	2	-	-	-	-	-	12	-	-	-	-	-
Estuary	3	Stirling	9	7	-	1	1	-	28	-	-	1E	-	-
<u>MINELAYING TOTAL</u>			20	11	-	1	8	-	44	-	-	1E	-	-
DIKWOLZ. w/c	3	Stirling	8	3	3	1	-	1	-	2.0	1+ 1.0	-	2	-
<u>T O T A L</u>			28	14	3	2	8	1	44	2.0	1+ 1.0	1E	2	-

www.bombercommandmuseumarchives.ca

BOEMER COMMAND REPORT ON NIGHT OPERATIONS 17/18th DECEMBER, 1942.

Fallersleben, etc; Minelaying; Leaflets.

SUMMARY.

Fallersleben: 22 aircraft of 3 Group set out to attack the Opel works at Fallersleben, but encountered dense layer cloud over the target area. Five aircraft attacked the primary and six others bombed railways and small towns in enemy territory. Results could not be observed, but the photographic evidence suggests that at least three aircraft bombed in the near vicinity of the target. Eight aircraft did not return.

Nienburg, etc: 28 Lancasters of 5 Group were despatched against Nienburg, Witau and other small German towns which were to be attacked from the lowest possible level. Nine aircraft located their targets and nine others bombed alternative targets. Results were mostly unobserved and there is no independent evidence of the damage caused. Nine aircraft did not return.

Minelaying: 50 aircraft of 1,3,4, and 5 Groups were detailed to lay mines in enemy waters from the Western Baltic to the Bay of Biscay. 2 reached their allotted areas, laying 78 mines. One aircraft did not return from the Baltic Sea.

Leaflets: Five aircraft of 91 Group, manned by pupil crews, dropped leaflets in the Nantes area, and returned without incident.

Metereological Forecast.

20 hours Midnight frontal positions: (a) minor cold front off east coast of England and occlusion about 50E, (b) warm front from S. Sweden to Danzig.

Home Bases: Poor visibility in Yorkshire with fog probably developing later on S. of Humber, variable cloud with local showers: moderate visibility if fog patches may develop towards dawn.

Summary: Much medium cloud between fronts (1) and (2). East of front (1), both medium and low cloud will decrease, the low cloud becoming well broken at 50 miles east of the front.

Western Plain: Much low cloud. Alps covered.

05 hours Home Bases: Northern stations should just be fit for early take-off: in 1,4 and 5 Groups, broken cloud, mainly about 1,000 feet, with visibility troubles later. Risk of local fog patches. In 2,3,91,92 and 93 Groups, generally broken cloud about 1,500 feet, but local deterioration to 1,000 feet in showers and smoke troubles with moderate visibility in second half of night.

Summary: Between 50 1/2 N and 53 N and 90 E - 110 E, considerable medium cloud; onset of good breaks in strato-cumulus early; base of cloud not guaranteed above 1,000 feet. Cloud may increase considerably as occlusion approaches this area, with tops to 15,000 feet. Another front will have to be crossed on return.

Key Areas: Biarritz: Broken cumulus with base 1,500 feet or above, moderate to good visibility. Showers on route. Prisians: 10/10ths frontal cloud, base 1,000 feet. Bight: Broken strato-cumulus at 2,000 feet with 10/10ths medium cloud above. Visibility moderate. W. Baltic: reasonable chance of well broken strato-cumulus, base 1,000-1,500 feet, visibility moderate to poor. E. Baltic: east of 120 E) very low cloud, poor visibility.

08 hours No change.

Fallersleben and targets in N.W. Germany.

Plan of Attack.

Stirlings and Wellingtons of 3 Group were detailed to bomb the Opel Works at Fallersleben, and Lancasters of 5 Group to attack eight small towns in N. Germany, viz: Neustadt, Nienburg, Soltau, Damm, Diepholz, Quakenbruck, Arsenbruck and Cloppenburg. No definite zero hour was fixed for either operation, but aircraft were to take off as early as possible. Aircraft of 3 Group were to carry the maximum weight of H.E. bombs but nothing heavier than 1,000 lbs, and were to bomb from between 4,000 and 7,000 feet, after dropping flares for identification. 5 Group aircraft sent against the three first-named targets were to attack with 30 lb. incendiaries and 1,000 lb. G.P. bombs (fused for 11-second delay) from the lowest possible height and in no case from above 2,000 feet, while the last five of the small towns enumerated were to be attacked with 1,000 lb. H.P. bombs only, through gaps in the cloud, in the event of cloud cover being essential, or from below cloud base at a height not exceeding 2,000 feet. Aircraft unable to identify the primary might attack any small town in Germany, but not in occupied territory (including Luxembourg).

For routes taken see route map.

Navigational Instructions.

In order to avoid fighters, aircraft were to fly at 1,000 ft or lower between the Dutch coast and 30E on both journeys, unless a good layer of 10/10ths cloud (low) was available.

Sorties.

		<u>Fallersleben</u>	<u>Other Targets</u>
(a)	No. of aircraft despatched	22	25
(b)	" " reporting attack on primary target	5	9
(c)	" " " alternative target	6	9
(d)	" " abortive sorties (flak	3	1 (tech)
	" " " (tech.d..... 1)		
(e)	" " missing.....	8	5

Weather Experienced.

Bases:- Mist and fog early in Yorkshire. Rain, heavy at times, spread northwards over England S.E. of a line from Portland to Spurn, dying out by 320. Much fog remained, and low stratus developed later.

Route Eastwards:- Narrow frontal belt encountered over W. North Sea on outward journey: thick cloud down to 1,000 feet, with rain. Improving conditions existed with layer cloud at 2,000 feet or above, with breaks. Similar on return. Wind at 2,000 feet S.S.W/35 m.p.h.

Target Areas:- 52.60N. 09.20E. 10/10ths. thin Sc. above 2,000 feet.
52.60N 08.50E. 9/10ths. Sc., base 2,000 feet.
52.50N. 09.60E. 2-3/10ths. Sc., base 5,000 feet.

Moderate visibility. Max 31% of full. Surface wind, S-S.E./10-15

Narrative of attack.

Five aircraft reported attacking the Opel Works at Fallersleben, after catching glimpses of the factory through gaps in the cloud. Visibility was moderate, with rain and thick layer cloud. Crews in action over this and the several other targets, which included Nienburg and Soltau, reported intense and accurate flak activity with searchlights. Results generally were unobserved, but one pilot claimed direct hits on the marshalling yards at Soltau, followed by a large blue explosion. Nine of the 18 aircraft of 5 Group identified their primaries. In all/15 aircraft

15 aircraft attacked alternative targets, viz: Enderfenn, Nienburg, Salingen, Lembruck, Quackenbruck, Lingen, Diepholz, Utze area, Stolzenau, Munsdorf, Damm area, Furstenau, Leuzerich, Haselunne, and a factory 12 miles west of Diepholz. 17 aircraft did not return.

Photographic Evidence

Only three photographs taken with bombing have been plotted. One of these is on the Opel works at Fallersleben and the other on the town itself. One searchlight was recorded in operation close to the Opel Works. No daylight reconnaissance has been undertaken to date.

Defences

Flak: Aircraft had been ordered to fly at low level and extremely accurate light flak was encountered en route. At Fallersleben, the defences consisted of 12-20 2 cm. guns and about 5 searchlights. The control of both types of equipment was poor.

Fighter:-	Number of interceptions reported	(a) attacks	4(3.5)
		(b) other	-
		interceptions - -	-
		Total	4(3.5)

The number of interceptions reported gives no indication of the amount of night-fighter opposition encountered, particularly over Holland. Approximately 29 sorties were made by controlled fighters and a large number of attempted interceptions were heard.

It was thought that bombers flying singly in bright moonlight would form easy prey for controlled fighters and they were therefore ordered to keep throughout, at low level, below 1,000 feet. This order was not carried out by all crews, with the result that while wireless intelligence shows that low flying did affect the efficiency of the ground control stations, the fighters achieved considerable success. Six, possibly nine, claims were overheard. It was also reported that two night-fighter pilots had had five victories. Though the majority of the returning bombers flew throughout at very low level, it is apparent that they did not all do so, since the attacks reported all took place above 2,000 feet one being at 12,000 feet. Tinsol and Mandrol were in use, but owing to the small number of aircraft taking part and the scattered nature of the attack they probably had little effect on the enemy defences.

Casualties.

Number of aircraft missing	17 (34.5).
" damaged (a) flak	7 (14.5).
" (b) fighter	3 (6.5).

The damage inflicted on returning aircraft also gives little idea of the nature of the opposition encountered. The evidence available suggests that the heavy losses suffered were due to light flak and night fighters, probably in approximately equal proportions.

There were 14 observations by returning aircraft of other aircraft seen destroyed, and these in conjunction with the Sieg Heils heard by Wireless Intelligence, make it appear likely that at least 6 aircraft were shot down by controlled fighters and possibly 5 by light flak. A report from German sources said that 11 aircraft were destroyed by night fighters.

MINELAYING.

50 aircraft of 1, 3, 4 and 5 Groups were despatched to lay mines in areas from the Cadet Channel to St. Juan de Luz. Good weather was experienced in the Bay of Biscay, where all the aircraft reached their targets, but rain, fog and low cloud, based at 600 feet, were encountered in the southern North Sea and the Western Baltic. 22 aircraft in all report having reached their targets and 75 mines were laid, including 30 off the Frisians. One aircraft failed to return from the Great Belt. There is no evidence as to how it was lost.

but the visibility in this area was so bad as to make it appear reasonable to associate the loss with this cause. Two other aircraft were totally destroyed on return.

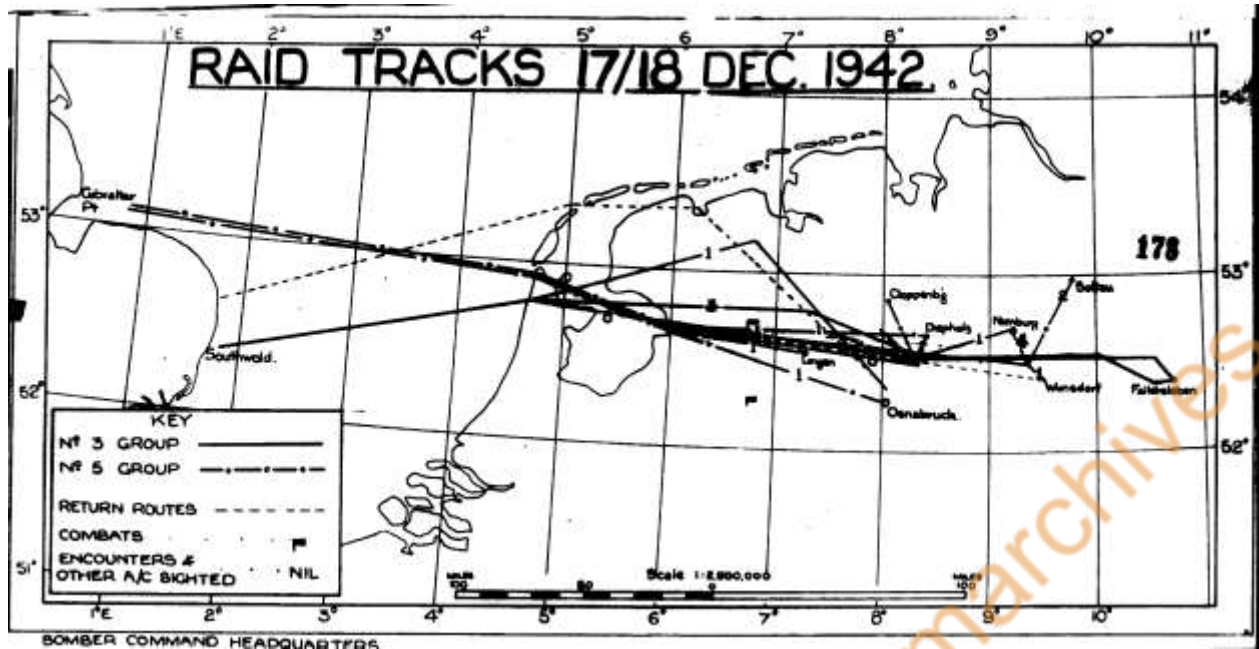
LEAFLETS.

Five Wellington Ie's of 91 Group, manned by pupil crews, were despatched to drop leaflets in the Nantes area. All completed their task without incident and returned safely.

BC/S.26342/2 /OAS.
3th February, 1943.
MLM/VP.

Target	Group	Type	Sorties	Aircraft reporting attack on		abortive sorties		Missing	Mines laid in primary area	Damage		Interceptions		
				primary area	alternative area	over en. territ.	not over en. territ.			Flak	Fighter	not en. action	attacked	not attacked
Pillarsleben	5	Well. III	6	1	3	-	-	2	-	1	1	-	1	-
			16	4	3	2	1	6	-	2+2aC	1	-	2	-
Benburg	5	Lancaster	4	3	1	-	-	2	-	2	-	-	-	
Neustadt	5	Lancaster	5	-	2	1	-	2	-	-	-	-	-	
Spilau	5	Lancaster	6	2	1	-	-	3	-	1	1	-	1	
Sampe	5	Lancaster	2	1	1	-	-	-	-	-	-	-	-	
Utepholz	5	Lancaster	2	1	1	-	-	1	-	-	-	-	-	
Muckenbarok	5	Lancaster	2	2	-	-	-	-	-	-	-	-	-	
Woppenburg	5	Lancaster	2	1	3	-	-	1	-	-	-	-	-	
Bersenbruck	5	Lancaster	3	-	3	-	-	-	-	-	-	-	-	
BOMBING TOTAL			50	14	15	3	1	17	-	22	3	-	4	-
MINELAYING														
Fadet Channel	5	Lancaster	6	2	-	4	-	6	-	-	-	-	-	-
Great Peat	1	Lancaster	4	-	-	3	-	1	-	-	-	18	-	177
The Sound	1	Lancaster	2	-	-	2	-	-	-	1aC	-	-	-	-
Kottgat	4	Halifax	17	3	-	14	-	-	10	1	-	-	-	-
Wallingford Night	4	Well. III	8	4	-	4	-	-	8	-	-	-	-	-
Prison Islands	3	Stirling	5	5	-	-	-	-	30	-	-	18	-	-
Mayenne	3	Stirling	5	5	-	-	-	-	15	-	-	-	-	-
St. Jean de Luz	3	Stirling	3	3	-	-	-	-	9	-	-	-	-	-
MINELAYING TOTAL			50	22	-	27	-	1	78	1+1aC	-	28	-	-
LEAFLETS														
Nantes	91	Well. Ie's	5	5	-	-	-	-	-	-	-	-	-	-
TOTAL			105	41	15	30	1	18	78	7+2aC	3	28	4	-

* These 5 a/c were not fitted with Gee



BOMB PLOT NOT AVAILABLE

www.bombercommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 19/20th DECEMBER, 1942.Mine-laying (Brest - Lorient - St. Nazaire).Meteorological Forecast.

1. The midnight frontal positions are estimated as follows:-
 (1) occluded from 55°N.07'E. to 53°N.15'E., then southwards (2) occluded from 62°N.00°E. to 55°N. 02'E. to 52°N.02'W. becoming warm to La Rochelle and southwestwards, and cold to Nantes and south-westwards. Near the fronts, cloud is expected to extend above 15,000 feet, with rain and very low cloud near surface level; freezing level, 4,000 feet. Thunderstorms are likely over the western Channel and north-west France, behind the cold front. East of front (2) there will be much medium cloud for about 200 miles, with broken low cloud; further east, over Germany, the medium cloud should become well broken and the low cloud very well broken. Much low cloud will prevail over the Plain of Lombardy. Brest should be fit for mining after 1800-1900 hours with showers but good visibility and similar conditions may be expected at Lorient at 2100-2200 hours. The Gironde area is unlikely to clear before dawn. The Frisians and West Norway will have much low cloud below 1,000 feet, and over the Baltic there will be patches of fog or very low cloud. At home bases, all Groups except low cloud and rain at dusk, but improving conditions will spread from the west, reaching bases in the north and midlands at 1900-2100 hours and East Anglia at 2300-2400 hours. Local visibility troubles may be experienced towards dawn, but the south-east should be safe for diversion.

Statistics.

2. (a) No. of aircraft despatched (Well. IV's of 1 Group)..... 15
 (b) " " " reporting mines laid in primary area 15
 (c) " " " missing..... 0

Weather Experienced.

3. Conditions over targets in the Bay of Biscay were excellent. There was no cloud and the moon was 94% of full. Visibility was 7-8 miles.

Results.

4. 15 Wellington IV's of 1 Group were despatched towards dawn on a mining operation in the Bay of Biscay. All reached their targets and returned safely without sustaining damage or casualties. 30 mines were laid.

C/S. 26342/5/ORS.

20th January, 1943.

Mine-laying (19/20th December, 1942).

Target	Gr.	Type	Statistics	A/c reporting mines laid in primary area	Mines laid in primary area.
Brest	1	Well. IV	4	4	8
Lorient	1	Well. IV	6	6	12
St. Nazaire	1	Well. IV	5	5	10
TOTAL			15	15	30

15 aircraft operating on this night was equipped with GEE.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 20/21ST DECEMBER, 1942.Duisburg: Lutterade: LeafletsSUMMARYDuisburg

An attack made on Duisburg by null moon achieved very good results, since unusually clear conditions over the Ruhr permitted visual identification of the river and docks. The extensive damage revealed by subsequent reconnaissance involves much industrial property, including that of the Vereinigte Stahlwerke A.G.

Considerable opposition was met from both flak and fighters, the latter mainly free-lance. 11 aircraft(4.7) did not return.

Lutterade

6 Mosquitoes took part in the first "Obca" calibration test. The selected target, the power station at Lutterade in Holland, was attacked by three aircraft from 26,000 feet and it is estimated that the bombs of two of them fell within 500 yards of the target. The three other sorties experienced difficulty with their airborne apparatus and attacked targets in the Ruhr, visually. No losses were sustained and no incidents reported.

Leaflets

Four out of five Wellington III's of 92 Group successfully dropped leaflets in the Vichy District. The fifth jettisoned its bundles over the area then attacked by a fighter.

Metorological Forecast

0930 hours Midnight front:- Occlusion from $62^{\circ}N$ $11\frac{1}{2}^{\circ}E.$ to $58\frac{1}{2}^{\circ}N$ $15^{\circ}E$ to Breslau to $47^{\circ}N$ $14^{\circ}E.$, becoming cold to Turin to $49\frac{1}{2}^{\circ}N$ $05^{\circ}E.$, then warm to Limoges to S.Wales to N.Ireland.

Wind Bases:- The position of the warm front over this country is problematical. Rain will almost certainly spread across bases during the night, but probably not before midnight.

Summary:- North Sea coast: layer cloud with some breaks. Inland: medium and low cloud, both well broken, except in the east.

Westerly plain:- Much medium cloud, possibly much low cloud: hills covered.

1250 hours Home Bases:- Light rain in W. at 2100 hours, reaching 0° at about 2300 hours, with 8/10ths at 1,500 feet. Visibility 3-5 miles in northern Operational Groups, but 2,000 yards in 1. Group owing to smoke. 2. Group safe for diversion on return.

Duisburg:- 3-5/10ths at 12-15,000 feet, moderate to good visibility. No troubles en route. Wind at 15,000 feet, $300^{\circ}/40-50$ n.p.h.

1500 hours Home Bases:- Slight rain in W. by 2300 hours reaching 0° by 2400 hours. 6-10/10ths cloud at 1,500 feet in Operational Groups. Visibility 2-4 miles in 1, 2 and 3 Groups, but only 1-2 miles in 5 Group, and 1-3,000 yards in 4 Group. 3rd sortie, base 100-1,000 feet, on south coast base in 1 and 93 Groups.

Duisburg:- Small amounts of medium cloud at 12-15,000 feet over target and en route. Wind at 15,000 feet, $300^{\circ}/40-50$ n.p.h. backing to 250° at bases on return.

...../DUISBURG

DUISBURGPlan of Attack

3. Zero hour.....1,45 hours
Period of Attack:-

Pathfinder Force (27 a/c).....1944 - 2005 hours
 Main Force (1,3,4 and 5 Groups).....1948 - 2010 hours

Route Order:- All Groups: base - Patten - "ndhuisen - DUISBURG -
 turn left - Noordwijk - base.

The Pathfinder Force was to be subdivided into "finders" and "illuminators".
 zero - 1 minute, eight "finders" were each to release a long stack of flares
 at 8 - second intervals, across the target area in the following three files:

4 aircraft from 51°29' N. 06°42' E. to 51°22' N. 06°54' E.
 2 " " 51°29' N. 06°48' E. to 51°22' N. 06°48' E.
 2 " " 51°29' N. 06°44' E. to 51°22' N. 06°52' E.

The remaining Pathfinders were to release short flare ticks (5 seconds each
 flare) in two parallel straight lines with the ends of each 2,500 yards from
 aiming point, viz: (1) from 070° to 290° (2) from 180° to 240°. This illumination
 was to be initiated by five aircraft at zero hour, and to be continued at
 two-minute intervals for 20 minutes by aircraft operating either singly or in
 pairs. Aircraft of the Main Force were to carry one-third (by weight) of 100
 and two-thirds of 4 lb. incendiaries, including 6% of the explosive type. All
 incendiaries were to be dropped before 1950 hours.

Navigational Instructions

In order to achieve concentration en route, all aircraft of 3 Group were
 to cross the enemy coast together, and all aircraft of 4 Group were to meet at 10
 hours at 4°E., at a minimum height of 10,000 feet.

Sorties

5. (a) No. of aircraft dispatched.....232
 (b) " reporting attack on primary target.....192(83%)
 (c) " " alternative target.. 1
 (d) " abortive sorties (technical defect.....21) ... 28
 (icing..... 1)
 (sickness of crew..... 2)
 (a/c collided over base... 2)
 (a/c crashed en route.....2)
 (e) No. of aircraft missing..... 11(4.7%)

Weather Experiences

6. Home Base:- Broken layer cloud for take-off. Warm frontal rain
 spreading from 4 Group by 2000 hours to 1 and 5 Groups by midnight and to
 East Anglia by 0100 hours. Visibility was moderate. Cloud base in rain at
 1,200 feet, locally below 1,000 feet in East Anglia.

Route:- Well broken layer cloud over North Sea, up to 5,000 feet. A layer of
 thin medium cloud about 10,000 feet above. Over the Benelux, layer cloud
 dispersed, leaving only small amount medium cloud circling turn, thinned
 towards the Ruhr. Visibility good.

Duisburg:- No cloud. Conditions all above over this area. Visibility
 good, apart from slight ground haze. The moon was 1/2 full, and at zero
 appeared at a bearing of 41° and at an elevation of 37°. The total illumination
 was about half the maximum available intensity.

Narrative of Attack

7. Apart from some ground haze, visibility was good on approach to the
 target and ideal for map-reading. On the route between the moon and stars
 were able to see the Rhine, its bridges, the canal at Duisburg, though not
 to have seen built-up areas. The quality of night photographs could not
 That the

the haze was fairly heavy and it is unlikely that any ground detail other than the water was seen.

The "finders" were accurate in their timing and appear in the main to have dropped their flares correctly, although one or two sticks were rather to the north. The timing of the "illuminators" was not so good, though the planned period was covered. By 1957 hours the flares were rather scattered, and some fused rather high. The opinions of crews as to their value varied, and while it appears that they were useful in marking the target area, in the later stages of the raid, when the haze was troublesome, glare and reflection from the smoke prevented the aiming point from being seen clearly.

The whole of the Main Force attacked within the space of half an hour, dropping 50 tons of bombs. Many fires were started in the town, particularly between the unshelling yards and the river, and a number of crews observed hits on factory buildings.

The only alternative target attacked was Mars, where a 4,000 lb. bomb was dropped.

Photographic Evidence

Night Photographs

Photographs taken with bombing (see accompanying diagram):

With ground detail,
 plotted.....38
 unplotted.....40
 (open country)
 With fire-tracks only,
 plotted.....62
 unplotted.....18

	ground detail	fire- tracks	Total
within 3 miles.....	19	+ 49	= 68
between 3 & 5 miles.....	10	+ 13	= 23
outside 5 miles.....	9		9
			<hr/> 100

Number of aircraft reporting attack.....192

Number estimated to have bombed within 3 miles of aiming point, on photographic evidence..... 95

In estimating the number of aircraft attacking within 3 miles, allowance has been made for the unrepresentative nature of the sample of photographs with ground detail. This results from the fact that the smoke developed in this sharp attack, rather with flare-light over the target and considerable evasive action reduced the chances of photographing the target. The concentration of the attack in line and wide road fires have permitted the plotting of many photographs from fire-tracks. Out of 130 sticks of incendiaries, representing 70% of the aircraft reporting attack, 100 were counted in an area of approx. 90 sq. miles, but the distribution was by no means uniform and a considerable density was reached in a few districts where sticks were seen in clusters.

The plot of night photographs (see diagram) shows that a most impressive concentration of attack was achieved in the target area and districts to the south within 15 minutes from zero hour (1945). The peak period of the attack was about 1950. Individual aircraft also bombed districts to the north and east, mainly within a four mile circle round the aiming point. Flares dropped by R.F.F. aircraft were successful in illuminating the target area and fires were quickly established. The weight of attack fell south of the docks. Most of the aircraft arriving after the peak period appear to have extended the area of attack rather than added to other concentrations. Fairly heavy flak opposition was encountered, 5 six gun salvos were recorded but fours and threes predominated. The attacking aircraft took unusually violent evasive action over the target.

A daylight reconnaissance was undertaken on 28/12/42, but the cover obtained was incomplete and smoke, haze and snow made it difficult to assess the results of the attack accurately. Another reconnaissance on 1/1/43 proved far more satisfactory...../nd

and, although one attack by 33 aircraft and several small "oboe" raids had taken place in the intervening period, most of the damage shown may be attributed to the operation of 20/21st December. There is no doubt that the town was severely hit, particularly in the south. Six acres of the steelwork Duisburg have been devastated by fire, while another six acres have sustained roof damage. The Demag works, the Vereinigte Stahlwerk A.G. Niederheinische Hütte, the Shipyards, the railway station (Hochfeld-Süd), the Duisburger Kupferhütte, Cassel, Feld Maschinenfabrik, the Deutsche Maschinenfabrik, the County Court and Office and a number of dockside warehouses have suffered from fire or H.E. Residential damage included 17 acres of devastation, apart from at least 120 other buildings partly or totally destroyed. This assessment excludes the very extensive damage to the Vereinigte Stahlwerk A.G. Ruhrort and the Phoenix works caused by the "oboe" raids, and the gutting of five warehouses on 8/9th January.

Navigation

10. 133 aircraft returned "useful" ranges, averaging 292 miles, with a maximum of 370 miles (26 miles past the target). The C pulse was weak, but A and B were uniformly good. There were various reports of interference - "grass and rails" but nothing excessive. J beams were in use.

Note on Navigation

11. A special analysis of navigators' logs was made for this operation. It shows that at 1915 hours (30 minutes before the start of bombing) more than 95% of the force were within 15 miles of the ordered route; nearly 85% within 10 miles at 1940 hrs. (5 minutes before the first bombs were dropped) the proportion within these limits of error was slightly greater still.

Defences

12. Ground defences A considerable number of searchlights exposed but their effectiveness was reduced by the bright moonlight and less than the usual co-ordination was apparent. Several reports mentioned stationary cones, possibly intended to silhouette our aircraft for the benefit of night fighters. Normal cone formation was generally poor. The volume of heavy flak fire was less than expected for this target; "unseen" fire predominated, but predictor control "see" and "deterrent" fire were employed when the searchlights succeeded in forming cones. Slight to moderate light flak was also encountered over the target area. West of the river a concentration of light guns was firing barrage. Two balloons were reported over the dock area, as well as one at 10,000 feet to the north of the docks and six at 6-7,000 feet west of the river to the south-west of the docks.

13. Fighters

Number of reported attacks.....	5
" other interceptions.....	35.....Total 40(17.2%)

Although controlled fighters operated in relatively small numbers, only a few sorties being flown, the percentage of bombers intercepted was high. Free-lance fighters in considerable numbers were to be expected in view of the very excellent conditions, and they appear to have been active in the target area as well as on route.

Only 4 attacks were made, but other unreported combats were seen and it is to be presumed that they had some success, though only 3 cases of fatal combats can be confirmed with any degree of certainty. No claims by controlled fighters were intercepted and it is therefore likely that free-lance fighters were the most successful.

The night's combats resulted in the destruction of two Me. 110's and at least two JU.88's.

Tinsel and Mandrol were used but apparently had little effect, presumably because the good weather enabled fighters to be less dependent on R.P. aids.

Casualties

14. No. of aircraft missing.....11(4.7%)
 " reporting damage by (a) Flak.....18(7.6%)
 (b) Fighter.....3(1.3%)
 (c) Not enemy action.....5(2.2%)
 Total Damaged.....26(11.2%)

(x includes 1 case of damage by fire from a British convey and 1 case believed caused by fire from a Lancaster.)

The percentage of aircraft lost was rather higher than the average for this target in the conditions prevailing. From the observations of aircraft shot down in the target area at least two are assessed as due to flak. One loss to light flak occurred on the return journey off Ijmuiden, and another possibly to flak, at Katwijk, also on the return journey.

Confirmed losses to fighters occurred at Alkmaar (outbound) and at Eindhoven (homebound); a third, possibly to fighter, was seen at Mers. All aircraft seen destroyed were in flames.

The cause of losses may be assessed as 3, possibly 4, to flak, 2, possibly 3 to fighters and 4 to causes unknown. 4 aircraft were totally destroyed on return.

LUTTERDE

16. The first operation using Obocok 1 took place on this night, when six Mosquitoes of 109 Squadron were detailed to attack Lutterde, a power station in Holland. The control stations were Walmer and Trimmingham I. The Mosquitoes, each of which carried 3 x 500 lb. H.C. bombs, were ordered to fly at a height of 26,000 feet, on a track of 190. The results were as follows:-

		<u>Calculated approximate position of bombs</u>	
1	✓C attacked primary	good run	220 yds. S.W. of aiming-point.
1	"	medium run	500 yds. S. of aiming-point.
1	"	bad run	-
3	✓C failed:-	(failure of Oboc airborne apparatus.....2)	
		(fault in airborne apparatus, cause unknown.....1)	

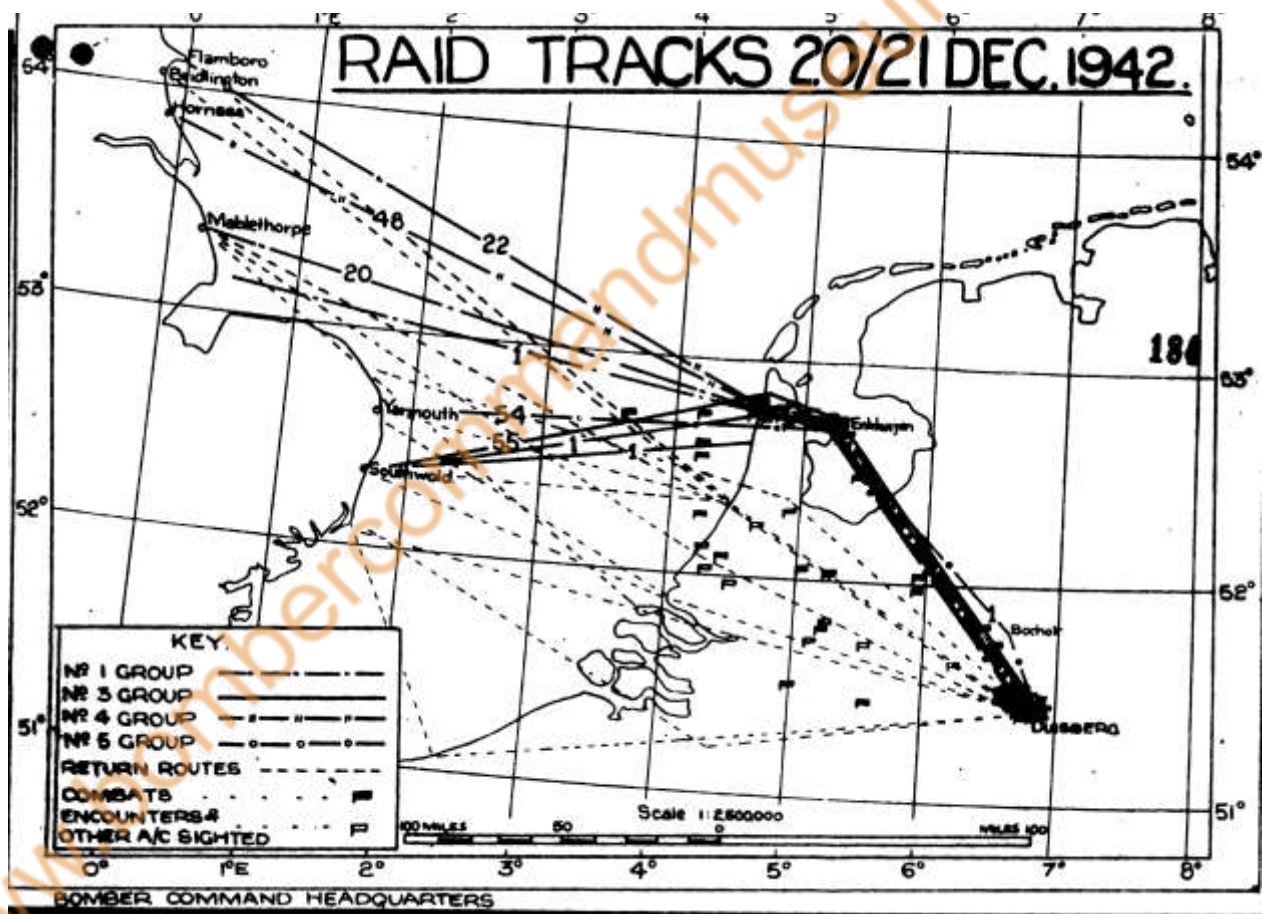
All the aircraft which failed attacked alternative targets visually. Two followed the Main Force to Duisburg, while the third bombed Seilenkirchen.

A P.R.U. photograph of Lutterde obtained on 23rd, December showed a large number of craters in the vicinity of the target, most of which must have been caused in an attack made on Lachen in bad weather. It was therefore impossible to determine the result of this operation.

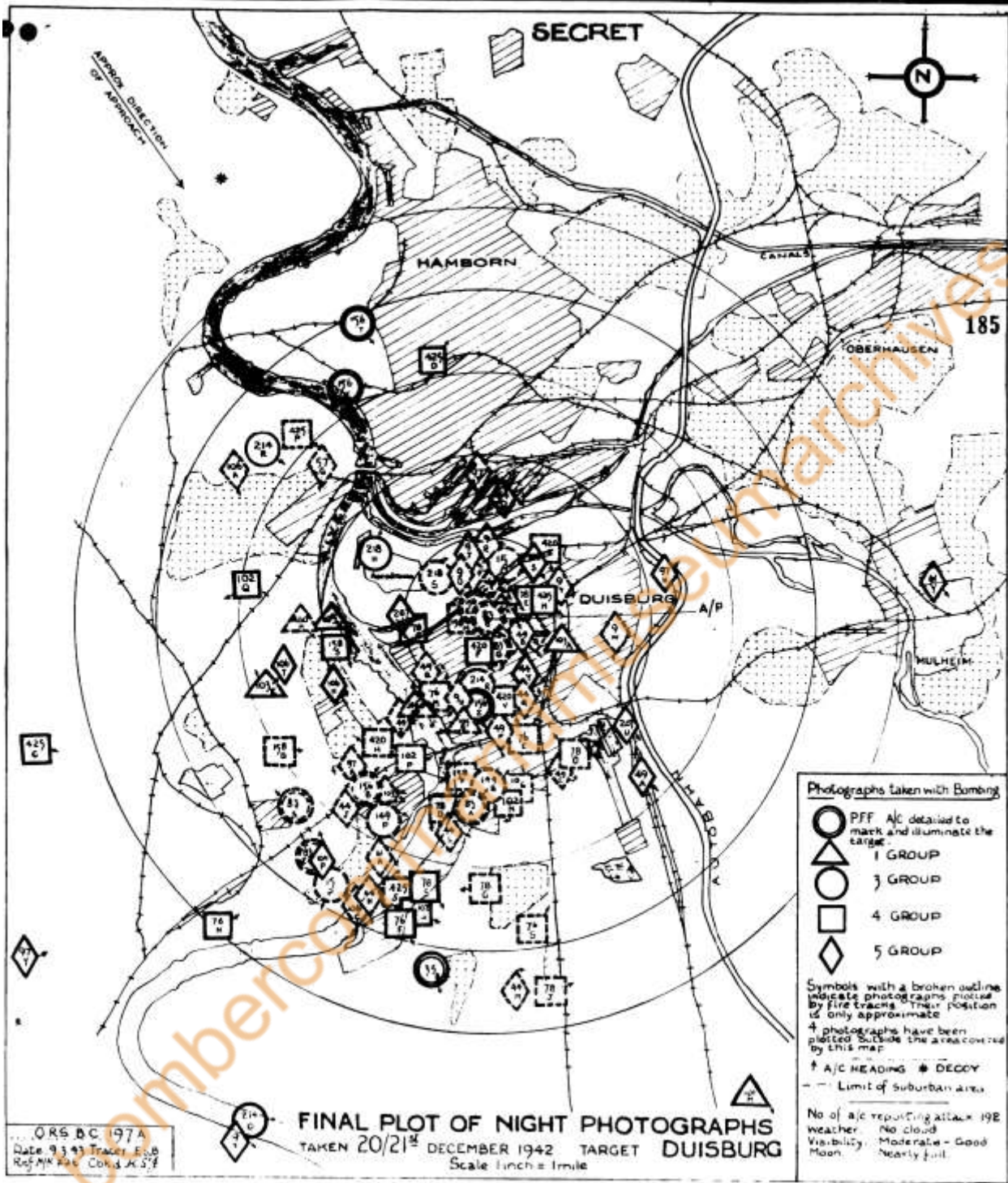
17. Four Well.III's of 92 Group were detailed to drop leaflets in the area of Vichy. One jettisoned its bundles over Chartres on being attacked by an enemy fighter, which it evaded after both aircraft had been damaged. The other three reached the target area and completed their task without incident. All returned safely.

MLM/VP.
 BC/S. 26342/1/ORS.
 9th February, 1943.

Target	Group	Type	Gortals	Aircraft reported attack on		Aircraft action		Missing	Losses			Interceptions	
				primary area	alternative area	over sea	not over sea		F1	fighter	not enemy action	attacked	not attacked
DUISBURG	P.F.F.	Well.III	10	8	-	-	-	2	1	1	-	1	1
	P.F.F.	Lancaster	10	9	-	-	-	1	1	-	-	-	-
	P.F.F.	Halifax	7	7	-	-	-	-	-	-	1.0	1	2
	1	Lancaster	24	21	-	-	-	1	1	-	-	-	5
	3	Well.III	4	4	-	-	-	1	-	-	-	-	-
	3	Stirling	26	21	-	-	-	3	1B	-	-	1	2
	4	Well.III	22	16	1	-	-	4	-	-	-	1	183
	4	Halifax	47	42	-	-	-	2	4	1	-	1	14
	5	Lancaster	75	57	-	-	-	4	6	-	22	1	10
	P.F.F.(u/s)	Well.III	3	3	-	-	-	-	-	-	-	-	-
	P.F.F.(u/s)	Lancaster	2	2	-	-	-	-	-	-	-	-	-
P.F.F.(u/s)	Halifax	2	2	-	-	-	-	1	-	-	-	-	
DUISBURG TOTAL			332	192	1	-	28	11	18	2+1B	1.0+4.0	5	35
MUTTERDE	P.F.F.	Stingray	6	3	3	-	-	-	-	-	-	-	-
TOTAL			342	193	5	-	28	11	18	2+1.0+1B	1.0+4.0	6	35



SECRET



ORS BC 1974
 Date 9 3 93 Tracer E.S.B
 Ref: MK 200, Cont: J. S. F

FINAL PLOT OF NIGHT PHOTOGRAPHS
 TAKEN 20/21st DECEMBER 1942 TARGET DUISBURG
 Scale 1 inch = 1 mile

Photographs taken with Bombing

- PFF A/C detailed to mark and illuminate the target
- △ 1 GROUP
- ◊ 3 GROUP
- 4 GROUP
- ◇ 5 GROUP

Symbols with a broken outline indicate photographs plotted by fire tracks. Their position is only approximate.

+ photographs have been plotted outside the area covered by this map

† A/C HEADINGS * DECOY

- - - Limit of suburban area

No of a/c reporting attack 198
 weather: No cloud
 Visibility: Moderate - Good
 Moon: Nearly full

www.bombingarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 21/22ND DECEMBER, 1942.MunichSUMMARY

1. 137 aircraft, including 128 heavies, left to attack Munich by full moon. Ground detail in the target area was obscured by thin layer cloud and ground haze, but 110 aircraft claimed to have successfully attacked the town. Reports as to the probable success of the operation, however, varied; many crews reported considerable fires but the photographic evidence, which is scanty, suggests that the weight of the attack may have fallen on the open country to the south and south-west of the town. No day reconnaissance has to date been undertaken. 12 aircraft (9.0%) failed to return, and 22 (16%) sustained damage, some of it severe. Stiff opposition from night fighters was the main cause of both losses and damage.

Meteorological Forecast

2. 0920 hours Estimated midnight position of fronts:- occluded from 56°N. 5°E. - 62°N. 0° - 62°N. 10°E, then southwards to Stetin, becoming warmer further southwards at 15°E. and cold from Stetin - Cassel - 50°N. 5°E, becoming warm to Central Ireland.
 Home Bases:- Rain and low cloud spreading from S.W., but bases in the north expected to hold, with broken cloud and moderate visibility until 2400 hours.
 Germany:- On N. side of cold front, layer cloud with some breaks. To S. and E. of frontal belt, much layer cloud except in the extreme south, where there will be well broken medium and little low cloud.
 France:- Much layer cloud, base below 4,000 feet, along the west coast from Brest to La Rochelle: further south the cloud base will lift.
 N. Italy:- Much cloud: peaks of Alps clear.

1300 hours Home Bases:- Operational Groups generally fit at dusk with cloud not below 4,500 feet, but 4 Group expect visibility troubles in the south of their area. Bases on return, are likely to have deteriorated considerably, with some rain and cloud at about 1000 feet.
 Route:- Much cloud in layers as far as approximately 50°N., thinning and breaking further south: freezing level 4-5,000 feet: icing index not high. Winds about 60 m.p.h./270° at 15,000 feet, decreasing considerably towards the target.
 Munich:- Probably small amounts of cloud, both strato-cumulus and medium, but the amount of strato-cumulus is uncertain.

1610 hours Home Bases:- Much cloud on return: cloud base 1000 feet in much of 1,2,3 and 5 Groups: 4 Group expect higher cloud base, but poor visibility in the south of their area. South of a line Thames Estuary - Birmingham - Bristol, there will be much low stratus, as low as 400 feet. Target (Pampa report):- Good prospects of little cloud.

MUNICHPlan of Attack

3. Zero hour.....2050 hours.
 Period of attack.....2049 to 2103 hours.
 Route briefed:- Cayeux - Wurmsee - Munich - return direct. (For routes taken see route map.)

The Pathfinder Force was sub-divided into target "markers" and "illuminators". Aircraft of both subdivisions were to release 1 marker flare (green steady) over the north tip of Lake Stunzance on the outward route, and a bundle of marker flares (1 red shifting green stars, plus 3 white) over the north tip of the Wurm See, after positively identifying both these landmarks. In order to ensure continuous illumination of the latter (the final turning point, from which a timed run was to be made to the target), 1 Lancaster, in addition to the above force, was also to drop bundles of the same marker flares

...../over

(1 red emitting green stars, plus 3 white) over this lake at intervals of 1 minute from 2045 to 2100 hours.

The target "illuminator" section was planned to consist of 6 aircraft of which 4 were to function 1 minute before zero hour and 2 at zero hour, aircraft releasing its flares (with a 5-second interval between each) on the east side of the aiming point. This curve was to run through three points situated at the following bearings and distances from the aiming-point:-

- (1) 150° at 2500 yards.
- (2) 090° at 1200 yards.
- (3) 030° at 2500 yards.

This illumination was intended for the use of the "markers" only, the primary method of marking the target being by "blob" fire-raising. The 14 aircraft detailed for this task were to drop incendiary loads (consisting of 30 lb. 5 x 4000 lb. incendiaries) in one salvo at zero hour on the aiming-point.

The Main Force was to consist of aircraft from 1 and 5 Groups plus approximately 8 Pathfinder aircraft, carrying the following bomb loads:- 1 Group, one-third of the aircraft to carry maximum loads of 4 lb. incendiaries, two-thirds to take mixed loads of 4 lb. incendiaries and H.E. 5 Group, two-thirds of the aircraft to carry 4 lb. incendiaries and the remainder to carry mixed H.E. and incendiary loads or H.E. alone.

The homeward route across Belgium had been carefully chosen to avoid heavy flak and crews were instructed to make the fullest use of Gee fixes to keep on accurate track. 1 Group crews were warned to fly as high as possible when crossing the enemy coast on the outward journey and to take advantage of cloud cover expected near the enemy coast on the return. All crews were to make the fullest use of "Tinsel".

Sorties

4.	(a)	Number of aircraft despatched.....	137
	(b)	" reporting attack on primary target.....	110
	(c)	" " alternative target.....	2
	(d)	" abortive sorties (technical defect.....)	11
		(attacked by fighter.....)	1
		(weather.....)	1
	(e)	" aircraft missing.....	12

Weather Experienced

5. Home Bases:- By midnight all except 2 and 4 Groups were affected by frontal rain, with cloud based at 500-1,000 feet; and by 0200 hours, all except locally in N. Yorkshire.

Route:- A feeble front prevailed to about 49°N. 06°E., giving 10/10ths low cloud, tops 6,000 feet, and 8-10/10ths medium cloud, base 10,000 feet. At 49°N., low cloud broke rapidly to small amounts and medium cloud slowly dispersed. Low cloud increased towards Munich, but was very thin with tops 5,000 feet. Visibility was moderate, but there was fog in valleys 40-50 miles around the target.

Target:- Small amounts of cirrus:- 7-10/10ths thin strato-cumulus, breaking at times to 3/10ths but obscuring ground detail. Tops about 5,000 feet. Ground haze.

Moon:- The moon was full and, at zero hour at the target, would have been on bearing 121° at an elevation of 46°. The total illumination was about 2/3rds of the maximum mid-winter moonlight.

Narrative of Attack

6. The approach to the target by D.R. from the Northern tip of the Wurm for which the track required was 45°, involved a cross-moon view of the target area. Unfortunately a thin layer of low cloud obscured much of the target. The Wurm See and Ammer See were visible.

The flares dropped by the Pathfinder Force to mark the northern tip of Lake Constance and the northern tip of Wurm See were reported by most crews

...../value

valuable in helping to identify these lakes. Many crews used the latter to make a timed run to the target, and bombed on this method. In view, however, of the scattered nature of the attack, it seems possible that there may have been some confusion between the Ammer See and the Wurm See.

110 sorties reported attacking the primary area, and many fires were seen through the cloud. One wing-commander who bombed 45 minutes after the close of the period of attack observed 17 "really red" fires, including one very large one in a factory, but reports as to the probable success of the raid varied.

Two aircraft unable to identify the primary bombed Stuttgart and Reutlingen.

Photographic Evidence

7. Night photographs taken with bombing

(a)	Plotted by ground detail.	Outside 5 miles.....	6
(b)	Unplotted. Showing ground detail of open country.....		10
(c)	" Showing fire-tracks but no ground detail.....		29

Of the 83 photographs taken with bombing that have been examined only six have been plotted. A large proportion of the remainder show cloud and the small amount of evidence available from night photographs suggests that in the unfavourable weather conditions prevailing, the attack became scattered over the open wooded country South and South-West of Munich.

No daylight reconnaissance has to date been undertaken.

Navigational Aids

8. 71 of the 121 aircraft returning reports gave useful ranges for 'Gee' (average 288 miles, maximum 351 miles). Many accounts of wavy time-bases and extra pulses indicated "jamming". One navigator ascertained that the B ground station shifted its pulse, but this has not been checked by the station's history.

Defences

9. Flak and Searchlights:- The ground defences appeared to with-hold their fire at first, but later, moderate "unseen" heavy flak fire was encountered from all sides of the town, especially from the S.W., which was the direction of approach. Flashless bursts were also reported. One estimate puts the number of heavy guns at six to 12, contrasting with observations of 20 to 30 on 19/20th September. The probable reason for this apparent reduction is that not all the guns were in action at the same time, as is commonly the case with "unseen" fire. Light flak fire was slight, though occasionally accurate. Up to 12 searchlights were in but were ineffective owing to the cloudy conditions.

10. Fighters:-

No. of aircraft reporting attack.....	14(10.2)
" other interceptions.....	8
Total Interceptions.....	22(16.0)

Night fighters, taking advantage of the opportunity afforded by a long route travelled in moonlight, put up a strong and apparently successful opposition, mostly on the homeward journey. Approximately 23 sorties were flown by ground-controlled fighters and the percentage of returning bombers reporting attack (10.2) is higher than in any previous raid. In addition to these 14 non-fatal attacks it is likely that up to seven or eight bombers were destroyed in combat, which would imply that nearly 20% of the force which reached enemy territory was attacked.

On this night it was particularly noticeable that, in spite of bright moonlight, several of the bombers did not see their assailants until the attack was over. This accounts for the large number of bombers damaged.

One Me. 109F is claimed as destroyed.

...../Casualties

APPENDIX I

Timing of Attack

No. of aircraft attacking within planned period.....	9
" " 0-20' late.....	74
" " more than 20' late.....	27
	<u>110</u>

APPENDIX II

Weight of Bombs Dropped

	<u>H.E. tons</u>	<u>Inc. tons</u>
By aircraft reporting attack on primary area:-	82.1*	155.4
" " alternative:-	1.3	2.1
By missing aircraft:-	15.6	9.3
Jettisoned over enemy territory :-	0.9	
	<u>99.9</u>	<u>166.8</u>

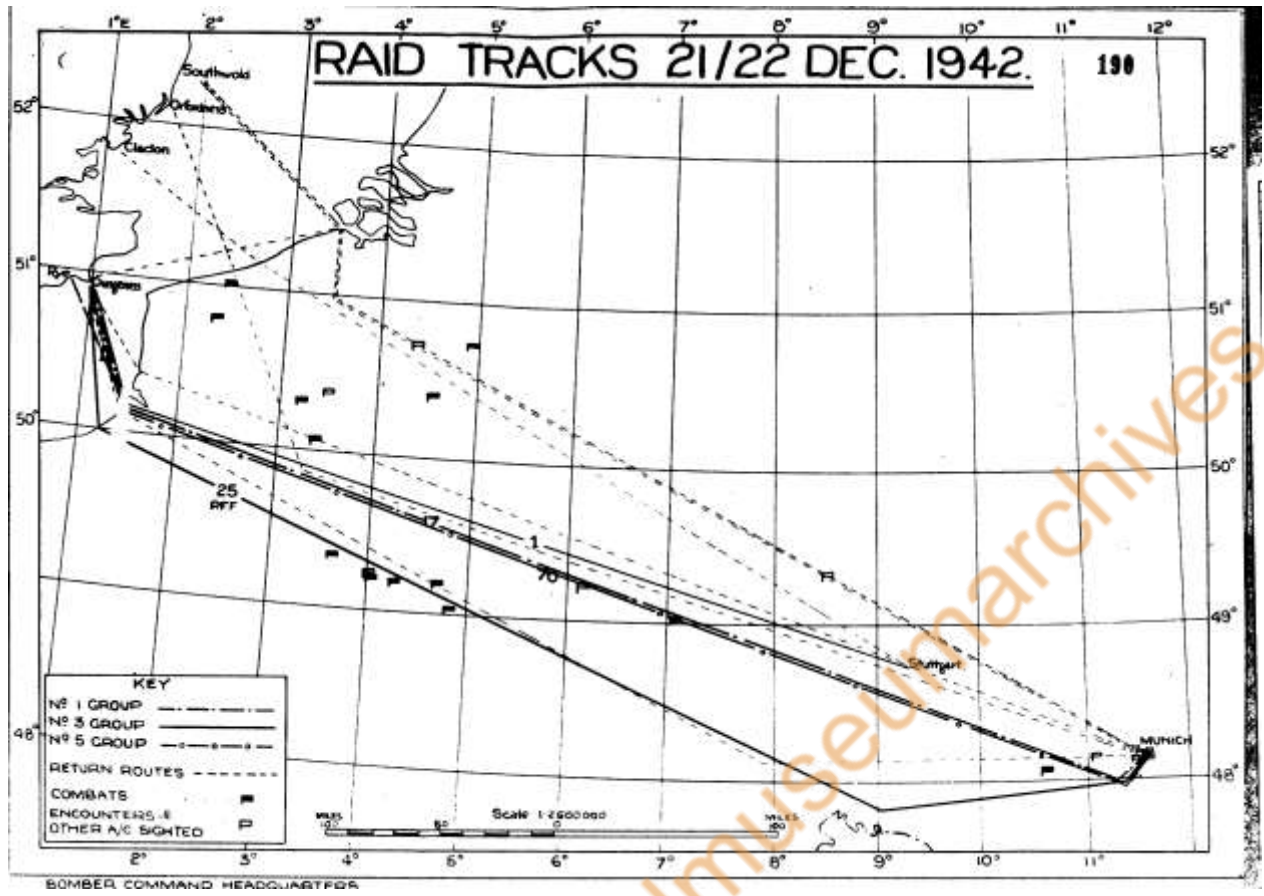
(* including 27 x 4000 lb.)

No. of aircraft attacking Munich carrying:-

flares only.....	2
flares + H.E.....	1
flares + 30 lb. incendiaries.....	4
flare + 30 lb. inc. + 4000 lb. incendiary..	5
H.E. only.....	7
4 lb. incendiaries only.....	30
30 lb. incendiaries only.....	4
H.E. + 4 lb. incendiaries.....	25
4 lb. + 250 lb. incendiaries.....	16
H.E. + 4 lb. + 250 lb. incendiaries.....	16
	<u>110</u>

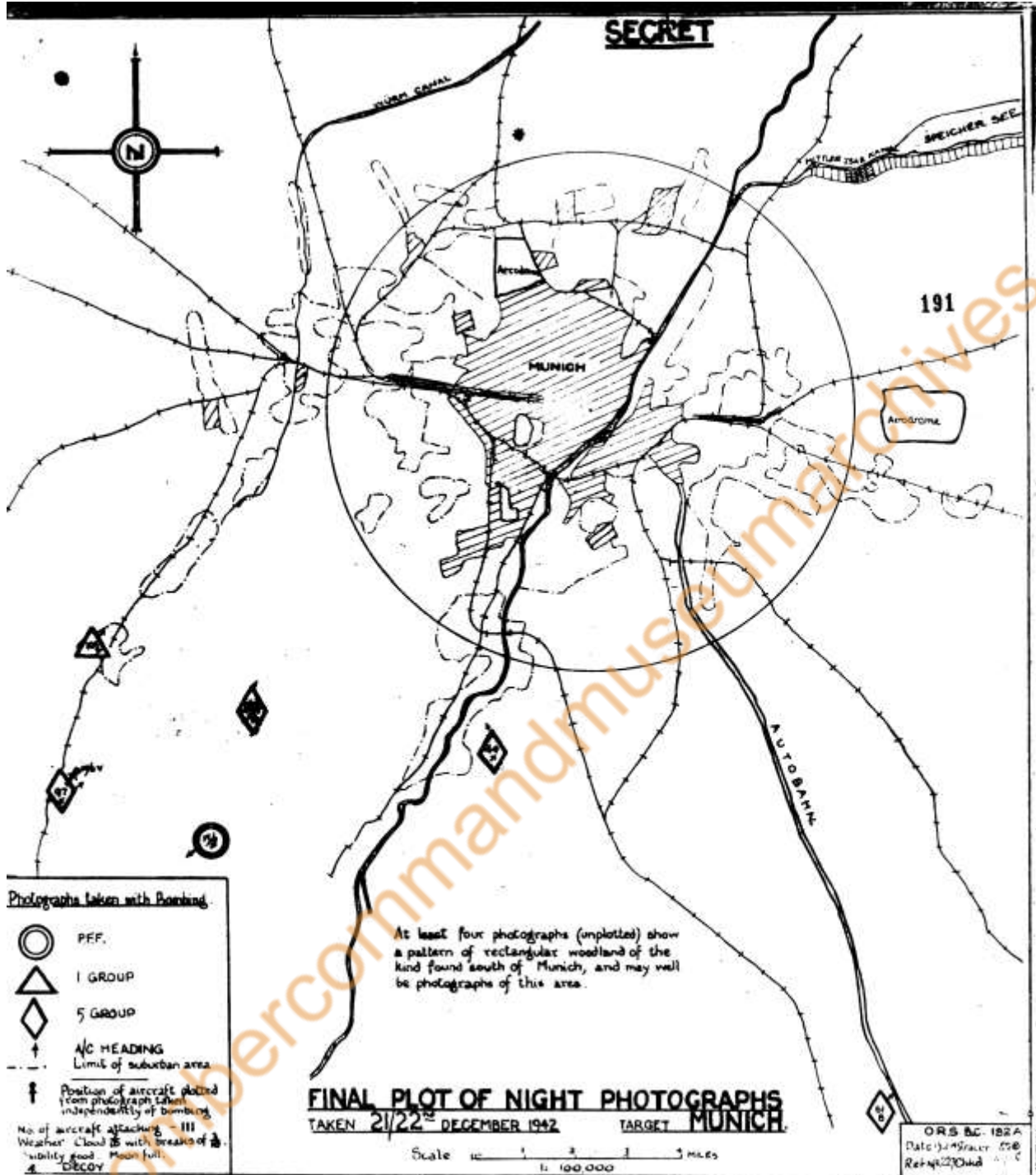
Target	Group	Type	Version	aircraft reporting attack on		abortive sorties		Missing	Interactions			Interactions		
				Primary area	alternative area	over en. territ.	not over en. territ.		Floak	Fighter	not in action	attacked	not attacked	
MUNICH	P.F.F.	Stirling	4	4	-	-	-	-	1 AC	-	-	3	1	
	P.F.F.	Hell.III	4	1	-	1	1	1	-	-	-	-	-	
	P.F.F.	Lancaster	8	7	-	1	-	-	1 AC	-	-	1	1	
	1	Lancaster	27	22	-	-	3	2	3 AC	1	-	3	1	
	5	Lancaster	62	68	1	1	6	6	4+2AC +1B	1+3AC +1B	+1B	7	5	
	P.F.F. (a/t)	Stirling	5	2	-	-	-	3	-	1	-	-	-	
	P.F.F. (a/t)	Hell.III	5	4	1	-	-	-	-	-	-	-	-	
	P.F.F. (a/t)	Lancaster	2	2	-	-	-	-	-	-	-	-	-	
	T O T A L			137	110	2	3	10	12	6+2AC	2+3AC +1B	2+1B +1C	14	8

* Including 2 aircraft damaged by both floak and fighter.



www.bombercommandmuseumarchives.ca

SECRET



Photographs taken with Bombing.

- PFF.
 - △ 1 GROUP
 - ◇ 5 GROUP
 - ↑ A/C HEADING
 - Limit of suburban area
 - † Position of aircraft plotted from photograph taken independently of bombing
- No. of aircraft attacking - III
 Weather: Cloud 25 with breaks of 2.
 Visibility good. Moon full.
 Decoy

At least four photographs (unplotted) show a pattern of rectangular woodland of the kind found south of Munich, and may well be photographs of this area.

FINAL PLOT OF NIGHT PHOTOGRAPHS
TAKEN 21/22nd DECEMBER 1942 TARGET MUNICH.

Scale 1:100,000

ORS BC 182A
Date: 21/22 Dec 42
Ref: 42/204d

www.bombingcommandmuseumarchives.ca

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 22/23rd DECEMBER, 1942.Hamborn: Rheinhausen: Leaflets.SUMMARY.

1. Hamborn: Two Mosquitoes of 109 Squadron equipped with Oboc were detailed to attack the blast furnaces and steelworks at Hamborn. The control stations were Walmer & Trimmingham I. Pilots were instructed to fly at 28,000 feet, on a track of 1750, each aircraft carrying 3x500 M.C. bombs. One aircraft had to turn back before reaching the enemy coast, its compass proving u/s, but the other attacked the primary. The tracking was fair, but the forecast of winds was very incorrect; consequently the run was bad and the bombs fell wide of the target.

2. Rheinhausen: Two Mosquitoes of 109 Squadron set out to attack the blast furnaces and steelworks at Rheinhausen. The control stations were Swingate and Trimmingham I. Instructions and bomb-loads were the same as above. One aircraft had to return early, owing to undercarriage trouble, but the other reached the primary and, despite the incorrect wind forecast, succeeded in making a medium run. It is estimated that the bombs fell 220 yards to the south-east of the target.

No photographic reconnaissance has to date been undertaken for either of the above raids.

No opposition was encountered by any of the Mosquito sorties.

3. Leaflets. Four Wellington III's of 92 Group, manned by pupil crews, dropped leaflets in the Orleans area. One sustained minor damage from flak over Carbourg, but no losses or casualties were sustained.

Metorological Forecast.

Midnight front;- cold from Kiel to Cologne to Tours, giving much medium and low cloud, with rain.

Home Bases:- Broken cloud, moderate visibility till 0200 hours, then serious troubles, unless the gradient holds up.

Germany:- N.W. of front: convection cloud with showers. Just ahead of the front much medium cloud, well broken low cloud. Stuttgart-Leipzig area: broken medium and low cloud, with fog patches. Munich: little cloud but drifting fog.

Lombardy Plain:- Little cloud but poor visibility. Alps clear.

Winds at 15,000 feet:- England: 250o/40 m.p.h. Continent: 250o-220o/60-40 m.p.h. Decreasing south-eastwards to 250o/30-40 m.p.h.

Sorties.

		<u>Hamborn</u>	<u>R'hausen</u>	<u>Leaflet</u>
(a)	No. of aircraft despatched	2	2	4
(b)	" " " reporting attack on primary area	1	1	4
(c)	" " abortive sorties (technical defect: 2) ..	1	1	0
(d)	" " aircraft missing	0	0	0

Weather Experienced.

Hamborn & Rheinhausen: 10/10ths to 20,000 feet. Full moon.

France:- Little or no cloud. Slight ground haze. Full moon. Visibility 15 miles.

/S.26342/2 /ORS.
14th February, 1943.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 23/24TH DECEMBER, 1942.Essen: Rheinhausen: Hamborn: MeiderichSUMMARY

1. Five Mosquitoes of 109 Squadron, using Oboe Mk. 1, were despatched to attack precise targets, namely various steel works in the Ruhr. Each aircraft carried 3 x 500 lb. M.C. bombs, and was ordered to fly at a height of 28,000 feet. The technical performance of the equipment was excellent and all but one of the aircraft attacked the prescribed target. No results were observed and, although these targets were subsequently covered by daylight reconnaissance after a series of raids, the exact results of this operation cannot be determined. All returned safely and without damage.

Metecrological Forecast

2. Home Bases:- Weak warm front at midnight from Tynemouth to Scilly, giving cloudy conditions. Probably light rain in 4 Group, with cloud at 1,500 feet. Low stratus in S.W. All bases should be fit for early take-off, but from 2300 hours visibility will almost everywhere be reduced to 1,000-1,500 yards. Landings should be possible at most places in 1,3, and 5 Groups, with diversions to 2 Group and, locally, to 92 and 93 Groups. The south may be fit, but is uncertain.

Germany:- Cold front at midnight from Danzig to Stuttgart. Much valley fog on both sides of front. Clearance west of a line Stettin-Berlin-Frankfurt. Better conditions in south than in north. Frankfurt: 4-5/10ths at 12,000 feet. Schweinfurt (50 miles E. of Frankfurt): 8/10ths at 10,000 feet by midnight. Little or no cloud en route. Winds: 10,000 feet, 270°/30 m.p.h. 4,000 feet, 240°/25 m.p.h. Italy:- Little cloud, mist or fog at Milan and Turin. Moderate visibility at Genoa. Alps in cloud but peaks clear.

Weather Experienced

3. Little or no cloud except at Hamborn, where there was 7/10ths strato-cumulus, tops 15,000 feet. Considerable haze at Essen; otherwise, visibility good. Moon 98% of full.

Results

4.	Target detailed	Target attacked	Control Stations (Track) - (Release)	Track	Quality of Run
(1)	Essen	P...	Walmer & Trimmingham I	174°	Medium
(2)	Essen	P...	Swingate & Trimmingham II	176°	Medium
(3)	Rheinhausen	P.A.	"	174°	Good
(4)	Hamborn	P...	Walmer & Trimmingham I	175°	Good
(5)	Meiderich	Kaiserswerth			

(* Gee u/s)

All aircraft attacked from 28,000 feet, a height which precluded observations of results.

Full details of this operation are to be found in O.R.S.(B.C.) Report No. S.78.

Photographic Evidence

5. Photographic cover of these targets was obtained only after a sequence of raids. Any specific damage caused by the present raid cannot therefore be identified.

Enemy Defences

6. Some heavy flak was seen over Duisburg. Slight night fighter activity in the Ghent and Aachen - Malmedy areas was reported by Wireless Intelligence but no enemy aircraft was seen and all sorties report no opposition.

Casualties

7. Neither casualties nor damage were sustained.

Tonnage of Bombs Dropped

8.	By aircraft attacking primary targets	2.7 tons H.E.
	" Kaiserswerth	0.7 tons H.E.

MLM/VF.

BC/S. 26342/3/ORS.

19th February, 1943.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 24/25TH DECEMBER, 1942.Ruhrort: EssenSUMMARY

1. Three Mosquitoes of 109 Squadron equipped with 'Oboc' were despatched to attack precise targets. Two were detailed to the steelworks at Ruhrort and one to Krupps works at Essen. Two aircraft bombed these targets from 28,000 feet with 3 x 500 lb. M.C. bombs. The third attacked Dusseldorf visually.

P.R.U. cover obtained on 17.1.43, after a series of raids in this area, represents the only information available as to results achieved. This photographic evidence will be incorporated in Night Raid Report No. 242.

No damage or casualties were sustained, and all the aircraft returned safely.

Meteorological Forecast

2. 0930 hours Midnight front: cold from S.W. Norway to Spurn Head to Ross on Wye to Plymouth. A consequent belt of bad weather is expected to be relatively narrow, but is liable to affect take-off or landing over a limited area. Outside the frontal belt to the north, cloud will lift and break; to the south, conditions will be cloudy, with smoke troubles. But the front shows a tendency to wave and exact conditions at bases are difficult to predict.

Germany and France:- The whole of the Continent is covered with fog or low stratus as far south as the Alps.

Italy:- Conditions are uncertain. Considerable amounts of broken medium cloud are likely, and there may be strato-cumulus below. Visibility early in the night will be moderate to poor, with fog probably developing later. Turin should be better than Milan.

1240 hours Home Bases:- Operational Groups should be fit for take-off, with cloud based at 1,500 feet and visibility one to two miles. For return, local fog and smoke troubles are possible in 1,2,4 and 5 Groups, and cloud will fall to 1,000 feet in 2 and 3 Groups. Diversions are at present difficult to find.

N. Italy:- Poor visibility, broken medium and high cloud. Widespread fog over all low-lying areas en route.

1245 hours Home Bases:- As the result of a decrease in gradient, all Operational Groups now expect a general visibility of 1,000 -1,500 yards by time of return. Diversions available to the north of 4 Group, E.Scotland and possibly Tangmere.

N. Italy:- Pampa reports 10/10ths strato-cumulus, which must be accepted as representative of conditions in that area to-night.

W. France:- La Pallice will be fogbound, but the Biarritz area may be suitable.

Weather Experienced

3. 10/10ths strato-cumulus to Rhine, nil to 2/10ths over Essen and Ruhrort..
Very hazy. Full moon./Results

Results

4.	<u>Target Detailed</u>	<u>Target Attacked</u>	<u>Control Stations</u>		<u>Track</u>	<u>Results</u>
			<u>Tracking:</u>	<u>Bombing:</u>		
	(i) Ruhrort	Primary	Walmer	Trimmingham I	175°	Medium run
	(ii) Ruhrort	Dusseldorf	"	"	175°	attacked visually to failure ground station Medium run
	(iii) Essen	Primary	Swingate	Trimmingham II	174°	Medium run

All aircraft dropped 3 x 500 M.C. bombs from 18,000 feet with unobserved results. The evidence of a P.R.U. made on 17.1.43, after a series of raids on these targets, will be incorporated in Night Raid Report No. 242.

Enemy Defences

5. Some inaccurate heavy flak and searchlights were encountered at Essen, Duisburg and Dusseldorf.

No night fighter activity was heard from areas in which our aircraft were operating.

No enemy aircraft were seen and no incidents of any kind were reported.

Casualties

6. All aircraft returned safely without damage.

MLM/VF.
BC/S. 26342/5/ORS.
19th February, 1943.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 28/29TH DECEMBER, 1942

MINELAYING (Frisians)

S U M M A R Y

1. Five Wellington III's and one Stirling of 3 Group set out towards dawn to lay mines off the Frisians. All were successful despite extremely bad weather and poor visibility, and 16 mines were laid. No opposition was encountered and no damage or casualties were sustained.

Meteorological Forecast

2. 0930 hours: Midnight front: - cold from S.W. Norway to Yarmouth to Scilly Isles.

Home Bases:- Developments as yet uncertain. Possible take off difficulties.

Germany:- Cloudy in N.W. and N., little cloud inland. Better visibility in S. than in Ruhr.

Lombardy Plain:- Variable cloud at 2,000-3,000 feet, with a few breaks.

Winds:- 250°/50 m.p.h. over S. England, 330°/30 m.p.h. to S.E. (at 15,000 feet.)

1300 hours:- Home Bases:- Midnight front will ~~be~~ roughly from the Wash to Exeter. Ahead of front, considerable cloud, base 1,000 feet, but 600 feet during light rain. Behind front, cloud breaking and lifting to 1,500 feet.

Germany:- Munich should not be threatened. Probably little or no cloud. Magdeburg, no better than this morning. Considerable cloud cover en route, N. of 49° or 50° N.

Mining areas:- Baltic, considerable strato-cumulus cloud at about 1,000 feet, patches of sea fog. Bight and Frisians, 10/10ths, base 1,000 feet during first half of night. Cloud breaking and lifting to 1,500 feet very late. W. France, 10/10ths strato-cumulus below 1,000 feet N. of 47°N., at 1,500-2,000 feet further south.

1545 hours:- Home Bases:- Thames estuary should be clear by midnight. 4 Group will be fit for take-off, and 1, 3, and 5 Groups probably just fit, except locally. No difficulties on return, except for cloud below 1,000 ft. in S.E. till after midnight.

Germany:- Munich, 10/10ths at 1,000 feet. Magdeburg, medium cloud early, possibly also strato-cumulus. Poor visibility beneath cloud. Rhine valley might be fit early in the night.

Mining areas:- Bight and Frisians may improve late, hopeless early. Baltic, cloud below 1,000 feet. West France suitable S. of 47°N.

...../Sorties

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 29/30TH DECEMBER, 1942.

Ruhrort-Meiderich: Essen: Minelaying(Gironde)

SUMMARY

Ruhrort-Meiderich and Essen

1. An "Oboe" calibration test was made by three Mosquitoes of 109 Squadron, the targets selected being the steel works at Ruhrort-Meiderich and the Krupps works at Essen. Two of the Mosquitoes attacked the former target and one the latter. Each sortie dropped 3 x 500 lb. M.C. bombs from 28,000 feet, above 10/10 cloud, and no results could be seen. Considerable heavy flak was experienced over the Ruhr, but no other opposition was met and all three aircraft returned safely.

Minelaying

2. 14 Lancasters of 5 Group laid 56 mines in the Gironde estuary. One aircraft sustained damage (Cat.AC.) from a flak ship off La Rochelle. All returned safely.

Meteorological Forecast

3. Home bases:- All bases should be fit for take-off and return, apart from snow showers along the coast, where cloud base will be 1,000 feet with visibility 1,000 yards. Generally, visibility will be good, with broken cloud.
 Germany:- Very rough conditions over the whole Continent. Cold air streaming down from the north over the North Sea will give much convection cloud, penetrating right into the Rhine valley, with snow showers in the north.
 Italy:- The frontal belt will be in the neighbourhood of the Alps, where cloud will extend to great heights, with very rough conditions. Over the Lombardy Plain, there will be medium cloud early in the night, with low cloud later.
 Mining areas:- The W.Coast of France is the only possible area. Here, visibility should be good, with broken cloud. N. of 46°N, will be suitable early, with occasional showers, cloud base 2,000 feet, tops to 15,000 feet. S. of 46°N, cloud will be at 1,000 feet or lower early in the night, but this bad weather is moving south, and is expected to clear Biarritz by about 0200 hours.

Sorties

4.		<u>Bombing</u>	<u>Mining</u>
(a)	No. of aircraft despatched.....	3.....	14
(b)	" reporting attack on primary area.....	3.....	14
(c)	" missing.....	0.....	0
(d)	" mines laid.....		56

Weather Experienced

5. Home Bases:- Snow showers became frequent in 4 Group at about dusk, and occurred throughout the night E. of the Pennines and in East Anglia. Cloud sometimes fell below 1,000 feet in showers, and visibility was bad. Further west, conditions were fine. Winds were northerly, strong to gale.
 Essen and Ruhrort:- 10/10ths strato-cumulus from English coast, tops to 27,000 feet.
 W.France:- Variable convection cloud, generally 5-10/10ths; base 2-3,000 feet, falling below 1,500 feet in light snow showers. Some electrical disturbance and slight icing at 1,500 feet. Occasional tops to 9,000 feet. Winds at 1,500 feet over Channel; 350-360°/50-55 m.p.h. Wind at 5,000 feet between Brest and Bordeaux: 360°/50 m.p.h. Moon 58% of full, and above the horizon.

...../Results

Results

6. Bombing Operations:-

<u>Target Detailed</u>	<u>Target Attacked</u>	<u>Control Stations</u>		<u>Heading</u>	<u>Quality Run</u>
		<u>Tracking</u>	<u>Bombing</u>		
Ruhrort	Primary	Swingate	Trimmingham II	175°	Medium
Ruhrort	"	"	"	175°	Good
Essen	"	Walmer	Trimmingham I	175°	Medium

All aircraft dropped 3 x 500 lb. M.C. bombs from 28,000 ft. above 10/10ths cir the results being unobserved. Photographic evidence of the incidents caused these raids was not obtained until 17th January, 1943. This will be discussed in Night Raid Report No. 242.

Mining:- All the 14 aircraft detailed laid their full load of mines in the Gironde Estuary.

Enemy Defences

7. Mosquitoes in the Ruhr area reported considerable heavy flak which, however, was bursting at 25,000 feet.

Only one of the minelayers encountered any flak opposition. This aircraft was hit by fire from a flak ship west of La Rochelle.

No enemy fighters were seen.

Casualties

8. All aircraft returned safely from both operations. One Lancaster sustained damage from flak (Cat. AC).

MLM/VF.

BC/S. 26342/3/ORS.

20th February, 1943.

Target	Group	Type	Sorties	a/c reporting attack on		Abortive sorties		Missing	Mines laid		Damage		Interceptions	
				primary area	alt. area	over en. territ.	not over en. territ.		prim. area	alt. area	flak	fighter	not X/A	attacked
RUHRORT	P.F.P.	Mosquito	2	2	-	-	-	-	-	-	-	-	-	-
ESSEN	P.F.P.	Mosquito	1	1	-	-	-	-	-	-	-	-	-	-
BOMBING	TOTAL		3	3	-	-	-	-	-	-	-	-	-	-
<u>MINELAYING</u>														
GIROUDE ESTUARY	5	Lancaster	14	14	-	-	-	-	56	-	1AC	-	-	-
MINING	TOTAL		14	14	-	-	-	-	56	-	1AC	-	-	-
TOTAL			17	17	-	-	-	-	56	-	1AC	-	-	-

197

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 31st DECEMBER/1st JANUARY, 1943.Dusseldorf: Florennes: Minelaying(W.France):LeafletsSUMMARYDusseldorf

Two Mosquitoes fitted with "Obce" and eight Lancasters, all of the Pathfinder Force, were despatched shortly after dusk to attack Dusseldorf by a marking technique. Apart from a few gaps, there was 10/10ths cloud over the target. Since the marker flares were successfully dropped by the first Mosquito, the reserve aircraft was not required. Seven Lancasters then bombed from heights between 18,000 and 20,000 feet on the position of the marker flares, each dropping 4,000 lb. H.E. and incendiary bombs. No results of the attack were seen and no photographs were obtained. P.R.U. cover obtained on January 1st did not disclose any new damage in the target area. The eighth Lancaster failed to return.

Florennes

Three Mosquitoes of the Pathfinder Force left towards dawn on an "Obce" calibration test, the selected target being a German control station at Florennes, Belgium. One aircraft abandoned its task owing to technical trouble, but the other two each dropped 3 x 500 lb. M.C. bombs from 28,000 feet above 10/10ths cloud. All returned safely.

No P.R.U. cover has been obtained, but Intelligence sources show that the two sticks of bombs fell 1150 and 250 yards from the aiming point.

Minelaying

24 out of 35 aircraft from 1,3,4 and 5 Groups laid 66 mines in their allotted areas off the west coast of France; another jettisoned two live off Cherbourg on being attacked by enemy fighters. One aircraft did not return from La Pallice, but the cause of loss is unknown.

Leaflets

Four of five Wellingtons of 91 Group dropped leaflets in the Orleans area, and two out of three Wellingtons of 92 Group on Limoges. The remaining aircraft encountered three fighters in the area of Rouen, but escaped without damage after jettisoning its bundles. No aircraft was missing.

Metereological Forecast

Midnight fronts: (1) occluded from N.Denmark to Bornholm to 50°N. 12°E. to Stuttgart to Limoges, then westwards (2) cold from 55°N. 07°E. to Yarmouth to the Bristol Channel. The position and intensity of this front are doubtful; it will probably be feeble, with showers.
 Home Bases:- Most areas will remain fit all night, although visibility in many places will be limited to 1,000-3,000 yards. Only 5 Group will require diversion, for which the south coast, except Cornwall, should be suitable. At dusk there will generally be broken cloud and moderate visibility; some snow or sleet showers are likely near the east coast.
 Germany:- Much convection cloud, with a few breaks and showers of snow, N. of occluded front and over N.Sea. Ruhr:- much cloud to 15,000 feet.
 Italy:- Much medium cloud, extending to 20,000 feet over the Alps.
 W.France:- The occluded front will lie through Paris and near La Pallice at 2000 hours, moving southwards and probably clearing at Biarritz by 0200 hours. Conditions in this front may be possible for mining, with cloud not below 1,000 feet. Everywhere behind the occluded front, visibility will be good.

...../Sorties

Sorties

	<u>Bombing</u>	<u>Mining</u>	<u>Losses</u>
6. (i) Number of aircraft despatched.....	13	35	
(ii) " reporting attack on primary area.....	10	24	
(iii) " reporting attack on alternative area.....	-	1	
(iv) Abortive sorties:-			
reserve aircraft not required.....	1	-	
technical defect.....	1	4	} 9
weather.....	-	4	
sickness of crew.....	-	1	
(v) Number of aircraft missing.....	1	1	
(vi) Weight of bombs dropped.....	24.5 tons	-	
(vii) Total number of mines laid.....	-	68	

Weather Experienced

7. Home Bases:- Fit till 0200-0300 hours, then rain and low cloud spread rapidly across.

Dusseldorf:- Convection cloud over North Sea, with some good breaks, increased near the Dutch Coast to 10/10ths., tops 15,000 feet; then breaking to 5/10ths across Holland. Over the target area cloud varied from nil to 10/10ths cumulo-nimbus, tops 15,000 feet, occasionally extending to 18,000 feet. Visibility good. No moon.

Florennes:- 10/10ths cloud. Moon 3/4 of full and above the horizon.

W.France:- Variable layer cloud, base generally 2,000 feet, but patches at 2,000 feet in the extreme south. Visibility good. No moon.

Results8. (a) Bombing Operations. Results of Oboe Sorties:-

	<u>Target detailed</u>	<u>Target attacked</u>	<u>Control stations</u>	<u>Track</u>	<u>Quality of results</u>
1.	Dusseldorf	Primary	(a) Walmer (b) Trimmingham I	178°	Fair
2.	"	-	"	178°	(a/c not required)
3.	Florennes	-	"	206°	(sortie aborted)
4.	"	-	"	206°	Bad.
5.	"	-	"	206°	Bad.

* ((a) tracking station; (b) release station.)

At Dusseldorf the marking technique was carried out successfully by the first Mosquito, so that the reserve aircraft was not required. The preliminary warning flares were found of great assistance to the seven Lancasters which attacked and 4 of these appear to have bombed exactly according to plan. All aircraft bombed from heights of 18-20,000 feet above 10/10ths cloud, no results were seen. P.R.U. cover obtained on January 9th, failed to disclose any new damage in the target area.

One Lancaster failed to return.

The three sorties which set out for the calibration test on Florennes detailed to attack at intervals of 20 minutes from 28,000 feet, each with 3 x 500 lb. M.C. bombs. The first Mosquito experienced trouble with its air-borne apparatus, and the other two made bad runs on account of very bad weather conditions, which made accurate tracking difficult. Both dropped their bombs from 28,000 feet above 10/10ths cloud.

Six attempts to obtain P.R.U. cover were unsuccessful on account of bad weather but information from Intelligence sources states that the two sticks of bombs fell about 150 and 250 yards from the aiming point.

Full details of this operation are to be found in O.R.S.(B.C.) Report No. 1000/...../Minelaying

(b) Minelaying

Minelaying on the W. coast of France, from Brest to the Gironde estuary, was completed by 24 of the 35 aircraft detailed, most crews reporting good visibility below cloud. One aircraft jettisoned its load live off Cherbourg when attacked by fighters. One aircraft failed to return from La Pallice.

(c) Leaflets

Four of five Wellingtons of 91 Group dropped leaflets in the area of Orleans. The fifth turned back before reaching the French coast.

Two of three sorties from 92 Group carried out their task in the Linoges area. The third jettisoned its load near Rouen after unsuccessful attempts to shake off three presumed hostile aircraft.

Enemy Defences

3. One Mosquito was illuminated by searchlights at Amsterdam at 30,000 feet, but apart from this there are no reports of flak or searchlights.

The only indications of night-fighter activity are the claim, supported by our own observations, of a bomber shot down in the mouth of Scheldt, and one half-hearted attack made on a Lancaster by an unidentified aircraft carrying lights. This had followed for 14½ minutes before firing.

Nearly all of the few enemy aircraft seen by the minelayers were carrying lights. Two attacks were made without result.

Casualties

5. One aircraft failed to return from Dusseldorf. Intercepted wireless traffic confirms observations of returning crews that it was shot down by a fighter in the Scheldt estuary.

No damage was reported by any of the bombing sorties.

Minelaying operations resulted in one aircraft missing (cause unknown), one aircraft slightly damaged by flak, and four damaged on return.

No casualties or damage were sustained by the Leaflet sorties.

MM/VP.
BC/S. 26342/3/ORS.
21th February, 1943.

Target	Group	Type	Sorties	Aircraft reporting attack on		Abative Sorties		Missing	Mines laid in primary area	Damage			Interceptions	
				primary area	alternative area	over en. territ.	not over en. territ.			Flak	fighter	not E/W	attacked	not attacked
DUSSELDORF FLORENCE	{ P.P.F. P.P.F. P.P.F.	Lancaster Mosquito Mosquito	8	7	-	-	-	1	-	-	-	-	1	-
			2	1	-	1	-	-	-	-	-	-	-	-
			3	2	-	1	-	-	-	-	-	-	-	-
BOMBING TOTAL			13	10	-	2	-	1	-	-	-	1	20	
<u>MINELAYING</u>														
Brest	4	Well.III	6	3	-	3	-	-	6	1	-	-	-	-
Lorient	1	Well.III	2	2	-	-	-	-	4	-	-	-	-	1
	1	Well.IV	3	2	-	1	-	-	4	-	-	-	-	-
St. Nazaire	1	Well.III	4	3	1	-	-	-	6	-	-	1/C	1	2
	1	Well.IV	3	1	-	1	-	-	2	-	-	-	-	-
La Pallice	3	Well.III	6	4	-	1	-	1	8	-	-	-	-	-
Gironde Estuary	5	Mosquito	11	9	-	2	-	-	36	-	-	1A2B	1	-
MINELAYING TOTAL			35	24	1	6	3	1	66	1	-	1A1AC 2B	2	3
<u>LE FLETS</u>														
Orleans	91	Well.III	5	4	-	-	1	-	-	-	-	-	-	1
Langas	92	Well.III	3	2	1	-	-	-	-	-	-	-	-	2
LE FLETS TOTAL			8	6	1	-	1	-	-	-	-	-	-	3
TOTAL			56	40	2	8	4	2	66	1	-	1A1AC 2B	3	6

* These 6 A/C were not fitted with Gee

www.bombercommandmuseumarchives.ca