

BOMBER COMMAND REPORT ON NIGHT OPERATIONS: 31st MAY - 1st JUNE, 1942

Metereological Advice Submitted to the Command

1. 0910 hours. Germany:- Hamburg and the Lubeck - Rostock area; broken medium cloud, though the amounts may be large.
- N.W. France:- Broken low and medium cloud.
- Minelaying Areas:- Fine in the Baltic; threat of low stratus in Heligoland Bight.
- Home Bases:- Threat of valley fog and also of local thundery showers, but most aerodromes fit all night.
- 1250 hours. Western Germany:- Chance of good breaks, but the prospect of a real clearance is remote and there is a threat of low stratus. Much convection cloud en route.
- Home Bases:- Most bases will be fit but there may be areas of rain although unduly low cloud is not anticipated.
- 1700 hours. Western Germany:- 7-8/10 low cloud probable. Medium cloud above more broken than previously expected.
- Home Bases:- Satisfactory.
- 1830 hours. Western Germany:- 8-10/10 strato-cumulus clearing during the night probably towards dawn. Little chance of a clearance by 0200 hours.

Executive Orders

2. Cloudy conditions were expected over targets and 2 Wellingtons were sent to do blind bombing at Cologne and to do a night reconnaissance if the weather was suitable in order to ascertain the effects of the previous night's raid.

Sorties

3. 2 Wellington III of 3 Group set out to attack Cologne. They both found 10/10 cloud over the target and accordingly bombed on T.R. fixes which coincided with flak concentration. 1 of these aircraft received minor flak damage. No other incident of importance occurred during this attack. The moon was above the horizon and 95% of full.

EC/S.26342/1/ORS.
25th June, 1942.

MOST SECRETNIGHT RAID REPORT NO. 76COPY NO. 16BOEMER COMMAND REPORT ON NIGHT OPERATIONS 1/2nd JUNE, 1942Meteorological Advice Submitted to the Command

1. 0920 hours. Ridge of high pressure over British Isles moving east and feeble warm front will extend at midnight from Fort William to Isle of Wight.
- Germany:- strato-cumulus along North Sea coastal strip; fine with moderate visibility inland.
- France:- fine with slight haze, locally except in North West where there will be much very low cloud.
- Home Bases:- Much medium and broken low cloud in East Anglia and Lincolnshire. Slight rain at times in North England but cloud base not below 1,000 ft.
- 1315 hours. Ruhr:- Good chance of no cloud, but possibly some medium; haze likely.
- North West Germany:- Less haze than Ruhr but more chance of medium cloud.
- Home Bases:- South of line Wash - Pembroke no rain expected but low stratus possible. 1, 4 and 5 Groups may have visibility troubles due to smoke. Rain is also possible.
- 1700 hours. Ruhr:- No low cloud; 5-8/10 medium cloud, base 10,000 - 12,000 ft.
- Home Bases:- All fit for take-off, 1, 4 and 5 Groups fit all night; 2 and 3 Groups may have low cloud base locally; 91 Group all unfit owing to cloud below 800 ft. by end of night; 92 Group some fit all night, others unfit from 0200 hours.
- 2130 hours. Ruhr:- Cloud not more than 5/10 and may be nil.
- Home Bases:- 1, 2, 3, 4 and 5 Groups all satisfactory except for possible fragments of low stratus. Some stations in 91 and 92 Groups, but not all, unfit owing to low cloud.

Executive Orders

2. This was the last opportunity to use the forces collected for the "Thousand Plan" before it would be necessary for them to return to their normal occupations. Essen was chosen as the target for this force because it was in the first two in order of priority, it had the best chance of being clear of the low cloud which threatened other areas and it was more favourably placed than targets in N.W. Germany, being in a latitude where there was a longer period of darkness in which to develop the attack.

Sorties

3. 1004 sorties were despatched of which 956 were detailed to attack Essen. For details of the operations see attached table.

125 (12.2%) of the sorties were abortive. The reasons were as follows:

	Essen	Intruders
Technical Failures	70	3
Unable to locate target	1	3
Flak	2	1
Fighter	2	
Icing	1	
Mistaken recall signal	14	
Illness of Pilot	2	1
Failure to operate bomb release correctly	1	
Cause not stated	24	

Moon

4. The moon was above the horizon during the operations and 89% of full.

Weather at Home Bases

5. These were mostly fit all night except for patches of low stratus in the south. Cloud base generally not below 1000 ft.

ESSEN

Plan of Attack

6. The attacking aircraft were divided into three waves, a flare force of 20 specially selected T.R. aircraft, an incendiary force of 125 selected T.R. heavy aircraft, and a main striking force comprising the remaining aircraft taking part in the raid. The attack was to begin at 0050 hours.

7. The flare force carried 12 bundles of 3 flares which were to be released at 8 secs. intervals giving a stick about 4 miles long. These flares were to be dropped from zero hour to zero + 23 mins., the aircraft approaching the target from N.W. - S.E. along the 'B' lattice line and dropping their flares at a given release point calculated to place the centres of the sticks over the target.

8. The incendiary force carried the maximum load of 4 lb. incendiary bombs made up where necessary with 30 lb. incendiary bombs. They were to navigate to the target along the same lattice line but drop their bombs by visual target identification confirmed by T.R. 1335 fix. Their attack was timed to last from zero + 2 mins. to zero + 15 mins. The leading crews attacking in the first 3 minutes of this period were to be specially selected for their navigational ability.

9. The main force carried a load made up of incendiary bombs and large H.B. They were to spread their effort evenly over the period zero + 15 mins. to zero + 90 mins.

Weather

10. 5-10/10 thin cloud at about 8,000 ft. was reported by most crews, and another thin layer at 3,000 - 5,000 ft. by a smaller number. A few aircraft report no cloud. There was ground haze with visibility reported as 1-5 miles. On route there was considerable layer cloud, in which a few aircraft reported icing, but good visibility.

Results

11. 767 (80%) of the 956 aircraft despatched claim to have dropped their bombs in or near Essen. Very few of them, however, were able to identify the target with any certainty owing to weather conditions. A number of the aircraft saw built-up areas, fires or flares on E.T.A. Essen and dropped their bombs on these, confirmed at times by T.R. 1335 fixes.

.... / Others

Others bombed blind on T.R. fixes or on E.T.A. from pinpoints on the Rhine. Crews report that there were many fires scattered throughout the Ruhr with a few very large ones which most of them believed to be in Essen.

12. The photographs taken with bombing suggest that the attack was very scattered. 73 photographs showing ground detail were taken with bombing. None of these showed the target and only 8 have been plotted within five miles. Most of these 8 are to the west of the target and only one actually shows Essen. A number of the others have been plotted in Duisburg-Hamborn area. A map showing the plotted positions of the photographs taken is appended to this report.

13. One of the flare-carrying aircraft returned early and another jettisoned 30 flares near Geldern about 20 miles west of the Rhine. These flares do not seem however to have misled anyone although they were reported by a number of aircraft. 16 of the remaining 18 released their flares blindly on T.R. fix ten of them during the five minutes beginning at zero hour and the remainder between zero + 9 minutes and zero + 20 minutes. The other 2 aircraft released their flares also during this latter period, but owing to T.R. troubles they had to attempt to recognise the target area visually.

14. One of the four aircraft which released their flares at zero hour took a photograph at the beginning of the stick which has been plotted $9\frac{1}{2}$ miles W.N.W. of Essen near Hamborn. As the flare sticks would be about 4 miles in length this particular stick must have extended to Oberhausen but it nevertheless fell several miles short of the target. This tendency for flares to be released short of the target is confirmed by observations made by the earlier aircraft of the main force. A few report that all the flares were west of the target area, and others who state that the flares illuminated the target took photographs with bombing which have been plotted near Hamborn.

15. Owing to the haze the flares were not very effective in lighting up the ground, but many aircraft report that they were useful as guides to the target area. Some of them were apparently dropped too high and added to the difficulty of seeing the ground by illuminating the lower cloud layers from above. The photographs taken with bombing during the flare period are less scattered than those taken later, as the photographs plot attached shows. The former are mainly concentrated in two areas, one about 3 miles west of Essen and the other around Hamborn, which bears out the other observations about the distribution of the flares.

16. The conclusions drawn from night photographs are borne out by the results of subsequent daylight reconnaissances, on the 2nd, 3rd, 5th and 6th June. No damage to Krupps works appears to have been inflicted on this night. 30 or 40 houses, mostly in the S. and S.E. of Essen were however destroyed or severely damaged, and a few railway coaches were burnt out west of the railway station.

17. Severe damage was done in Oberhausen. The main railway station was extensively damaged and its chief buildings gutted. A Boiler Works, a Zinc Rolling Mills, a Tar Works, the Tramway depot, a bank and an unidentified factory building all suffered severely. In addition about 70 other commercial and residential buildings were destroyed or damaged. A direct hit was obtained on one carriageway of the autobahn where it crosses the Rhine-Merne Canal.

18. At Mulheim a group of factory buildings were burnt out and 14 houses destroyed. In the Duisburg area there was damage to railway property in three places, the most important being in the Widau district where the locomotive repair shops were damaged. In addition there are numerous craters in open country and several points of damage to residential property close to decoys are visible. Hamborn has not been covered by a P.R.U. sortie since this raid.

19. It is possible that some of the damage listed above may have occurred on the next night.

Other Targets Attacked

20. 39 aircraft, which failed to bomb the primary target either owing to

..../ technical failures

technical failures or inability to identify it, bombed other targets. About half of these were other towns in the Ruhr area and most of the remainder were targets in Holland, mainly aerodromes.

Cost

21. 31 (3.2%) of the aircraft detailed to attack Essen are missing and 99 (10.3%) suffered damage to varying extents. Of those damaged, 5 had to be "written off" and 23 were seriously damaged (Cat.B and Cat.AC). 78 of the damaged aircraft were hit by flak and 13 by enemy fighters. The damage to the remaining 8 was not due to enemy action.

22. The following is a comparison of the losses, flak damage and attacks by enemy aircraft on this raid and on previous raids on Essen for the period August 1941 - April 1942.

	Sorties	% Missing	% damaged by Flak	% attacked by enemy aircraft
1st/2nd June, 1942.	956	3.2	8.1	3.3
August '41 - April '42	1937	3.9	12.2	1.7

These figures show that the percentage missing is slightly lower than the overall normal in the area though the difference is not statistically significant. The weather conditions on this occasion were 5/10 - 10/10 cloud with the moon up and in such conditions the average missing rate for attacks on the Ruhr from June 1941 - March 1942 was 3.3%.

23. In the target area the flak defences were moderate in their intensity during the early part of the raid, in fact less intense than usual. These defences worked in close co-operation with cones of searchlights and with fighters. It appears from reports made by returning aircraft that there were about 8 losses due to flak over the target nearly all between 0050 and 0110 after which time the effectiveness of flak in the target area fell away.

24. Outside the target area there does not appear to be any evidence pointing to any decrease in efficiency. There were 1 or 2 Flak losses crossing the Dutch coast and 1 or 2 inland over Holland on the journey to the target. The remainder of the flak losses were in the coastal region on the return journey 3 or 4 occurred in the Antwerp area where the co-operation between flak and searchlights appeared to be very effective.

25. The enemy's fighter effort was considerably larger than usual particularly in the coastal areas and on the return journey but the extra effort does not appear to have been rewarded with much success. 32 aircraft of those despatched to Essen were attacked, 5 en route to the target, 4 at the target and 19 on the return journey. In 12 of these attacks our aircraft were damaged. It seems that 1 or 2 losses to fighters probably occurred over Holland approaching the target between 0000 and 0100. There was probably only one loss to fighters during the next hour while the attack was in progress. The remainder of the fighter losses (about 6 - 8) were apparently on the return journey, most of them being in the coastal region and over the sea between 0200 and 0240. The fighter tactics were apparently to concentrate in the air over the coastal region and around the target area to follow and attack returning aircraft.

26. The main searchlight belt was reported as absent, but within the target area and along the Rhine there was considerable activity. In the area Hague - Rotterdam - Overflakke there was also much activity, a belt of searchlights operating in cones of 5 being reported. About half the aircraft seen to be shot down by flak were held by searchlights.

27. An attempt has been made to apportion the losses to various causes by examining the numerous reports of aircraft seen shot down and eliminating as far as possible coincident observations. Any conclusions as to the causes of our losses derived from this process must naturally be tentative but it would appear that 14 aircraft were lost in the target area to the following causes:

Flak	8
Fighter	2
Collision	4

28. Two collisions were reported but there are no observations to show the types of aircraft involved or whether they were our own or enemy aircraft. One is stated to have occurred between Essen and Krefeld at 0105 and it is mentioned in three independent reports; the other was observed at Essen at 0210 but there is only one report of this incident although it is a definite statement.

29. Outside the target area the proportion of aircraft shot down by flak and by enemy fighters seems to have been about 2:1. Most of these losses occurred in the Dutch Coastal area on the return journey. A much higher proportion of the losses occurred outside the target area than on the previous "Thousand Plan" raid against Cologne.

30. In the present raid the distribution of losses between 2 engined and 4 engined aircraft was as follows:-

	Sorties Despatched	Missing	Attacks
Four Engined A/C	278	13 (4.6%)	8 (2.9%)
Two Engined A/C	678	18 (2.6%)	24 (3.5%)

In the previous "Thousand Plan" raid on Cologne the four engined aircraft suffered much lighter losses than the two engined aircraft. In that raid, however, they formed the last wave of the attack and in this one they went in early. These results support the view that the enemy's defences decrease in efficiency considerably during the progress of these very heavy raids.

Summary

31. The raid was not so successful as the previous "Thousand Plan" attack which was directed against Cologne. However, although little damage was done in the target area, a considerable amount of useful industrial damage was done in the Ruhr. The chief reason for the comparative lack of success was the weather. Essen is always a very difficult target to find and in cloudy conditions a definite identification appears to be almost impossible. A contributory factor was the fact that most of the flares appear to have been released to the west of the target. Nevertheless the photographs taken with bombing during the flare period show that the attack was much less scattered while the flares were burning.

32. The losses on this night were again slightly below those sustained on normal strength raids in comparable weather conditions against the same target. A high proportion of the missing aircraft were apparently shot down near the coast on the return journey. This may have been associated with the fact that the moon was higher on the return journey. Some of these were due to aircraft going over highly defended localities such as Antwerp at a relatively low level. Others, however, were due to fighters and it is probable that on a moonlit night the high concentration along the return route would assist the enemy's cats-eye fighters in finding victims.

INTRUDERS

33. 34 Blenheims of 2 Group and 14 Blenheims of Army Co-operation Command were despatched to bomb the enemy's aerodromes during this raid in order to reduce his night fighter activity. 27 of them were successful in accomplishing their mission and a further 7 bombed aerodromes other than the one for which they were detailed owing to inability to reach or find their primary target.

34. Fighter Command also carried out intruder activity to supplement the efforts of Bomber and Army Co-operation Command. The following is a summary of the times at which enemy aerodromes were bombed or patrolled:-

Juvincourt	0010 - 0050	(B)
	0210 - 0220	(F)
	0240 - 0250	(F)

St. Trond	0005 - 0051 0150 - 0205 0240 - 0250	(B) (F) (F)
Bonn	0040 0217	(B) (B)
Haanstede	2340	(B)
Gilze Rizen	2350 - 0315	(F)
Eindhoven	0055 - 0100 0215 - 0230	(F) (F)
Venlo	2358 - 0017 0102 0200 - 0210	(B) (B) (F)
Soesterburg	0030 - 0100	(F)
Schipol	0050 - 0125	(F)
Twente	0020 - 0036	(B)
Rheine	0025 - 0028 0125	(B) (B)
Leeuwarden	0015 - 0045	(F)
Vechta	0021 - 0041	(B)
Ardorf	0006 - 0035	(B)

In addition to the above unidentified aerodromes, near Hengelo, Hage, and Aachen were also bombed.

35. Fighter Command aircraft claim to have destroyed one and damaged 2 enemy aircraft in the course of their patrols. No claims to have damaged enemy aircraft were made by Bomber Command or Army Co-operation Command intruders.

36. The effectiveness of these operations in reducing the enemy's night fighter effort cannot be assessed. Some dislocation must have been caused but he was able to put a considerable number of night fighters into the air particularly near the Dutch Coast, during the return journey of our bombers.

37. 2 aircraft of Bomber Command and 1 of Army Co-operation are missing from these operations.

BC/S.26342/2/ORS.

9th July, 1942.

Errata to Night Raid Report No. 74

In para. 23 the figure for aircraft damaged should read 116 not 113 and the figure for the number damaged by flak should read 85 not 82.

In the Table the total number of attacks should read 30 not 29.

Target	Group	Type	No. of Sorties	Airports remaining to attack		Airports falling to base priority				Result not known	Disposition			Interest		
				Primary	Primary Area	Revised Target Area		Over Enemy Territory			Not over Enemy Territory	by Flak	by Enemy Aircraft	not due to Enemy action	Attacked	Not Attacked
						Confirmed other Target	Abortive	Confirmed other Target	Abortive							
BAZEN	1	Well.Ic	21*	14	1		1	1	4		1 A 2 B				1	
		Well.II	34*	29	1				3	1	2 B		1 E 1 I	1		
		Well.III	14	12				2	2		2 B			1		
		Well.IV	86*	53	1		2	2	4	1	3 B	1 B	1 E	1		
	91 Gr. attached to 1 Gr.	3	Whitley	2*					2							
			Well.Ic	27*	15				3	9					2	
	Flying Training Command attached to 3 Group	3	Well.Ic	8	23	4		1		3	1	2 B	1 D		3	4
			Well.II	24*								1 A 1 B 3 B			5	6
			Stirling	68 9*	65		2		1	8		1 E 1 A 6 B	1 A 1 B 1 D	1 E	2	6
	91 Gr. attached to 3 Gr.	Well.Ic	14*	9		3				1	1 A 2 B				1	
Well.Ic			15*	11				2	1	1	1 B	1 B		1		
4	Whitley	5*	2				1		2							
		Well.II	6*	6												
		Halifax	89 38*	110	2		1	2	4	8	1 E 1 A 20 B	1 E 2 B		4	3	
5	Harvard	26*	19	2	3			1	1	3 B				3		
		Man.	33*	26	1			2	3	1	4 B	1 B		3		
		Lanc.	49 25*	50		1		2	7	4	1 A 2 B			2	1	

.../ over

Target	Group	Type	No. of Sorties	Airports remaining to attack		Airports falling to base priority				Result not known	Disposition			Interest		
				Primary	Primary Area	Revised Target Area		Over Enemy Territory			Not over Enemy Territory	by Flak	by Enemy Aircraft	not due to Enemy action	Attacked	Not Attacked
						Confirmed other Target	Abortive	Confirmed other Target	Abortive							
ESSEX (Cont'd)	91	Whitley	22*	19	1				1	1	1 A 1 B					
		Well.Ic	181*	146	4			5	20	6	5 A 1 A 10 B	1 A 1 B	1 E 1 B	5	8	
	92	Harvard	15*	35			1	1	8	2	1 A 5 B	1 B 1 D	1 A	4	6	
TOTAL			956	767	21	7	18	21	89	2	31	78	13	8	32	42
WYVERN	2 Gr	Blenheim	3*	3												
		Blenheim	8*	7			1				1 B					
		Blenheim	8*	5				1	1	1			1 A			
		Blenheim	8*	5			1	1	1	1				1		
		Blenheim	4*	3			1									
Command	9*	2			3		3	1		3 B						
Command	8*	2			2			1	2							

1004 27 767 27 9 22 24 92 2 31 1 E 1 E 3 E 33 43
1 B 2 B 3 B
13 A 3 A 3 A
3 A 7 B
64 B 1

* not fitted T.R. 1335

Total Abortive 125

RAID TRACK NOT AVAILABLE

PLOT OF PHOTOGRAPHS, ESSEN 1/2:VI:1942

MOST SECRET

TR 1335 } Photos taken with bombing
 Non TR 1335 }
 ⇒ F Photo taken at start of flare stick
 Red • Photos taken during Flare Period

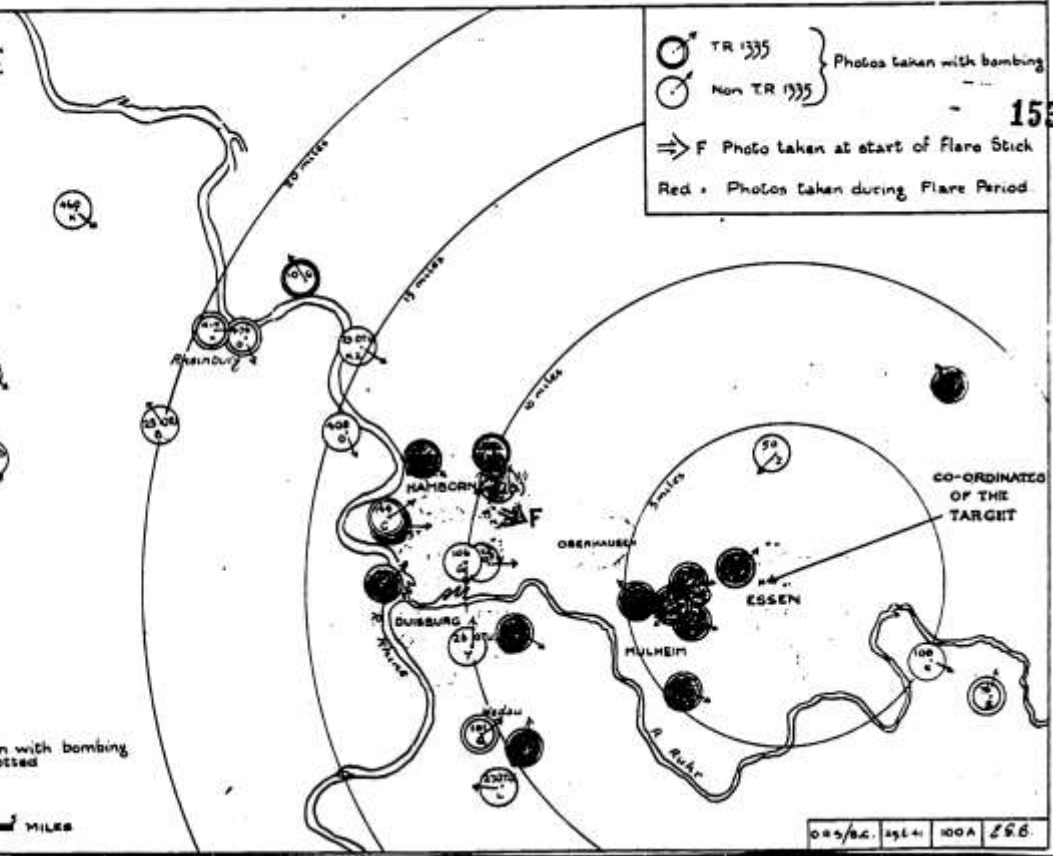
15

Flares jettisoned
believed in this area

DELOERN

N.B. 42 Photos taken with bombing
remain unpiotted

1 2 3 4 5 6 7 8 9 10 MILES



0	25	50	100	150
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MOST SECRETNIGHT RAID REPORT NO. 77COPY NO. 16BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 2/3rd JUNE, 1942Meteorological Advice Submitted to the Command

1. 0920 hours. Germany & France:- Fine weather expected, but there is a threat of strato-cumulus cloud along North Sea German Coast. Ground haze more in evidence than previous night.
- Home Bases:- East England; fine, chance of mist patches at dawn. South Midlands and S.W. threat of low stratus developing.
- 1245 hours. No change.
- 1645 hours. Ruhr & N. France:- Only small amounts of cloud. Haze in Ruhr. Good visibility elsewhere.
- Hamburg:- Probably cloudy.
- Home Bases:- Visibility deteriorating to 1-4 miles, but no real worries. Local mist and fog at dawn.

Executive Orders

2. The main attack on this night was directed against Essen and was designed to follow up the big operation of the previous night. Dieppe was selected as the target for a subsidiary attack by Freshmen, some of whom were also despatched to lay mines and drop leaflets.

Sorties

3. The total number of sorties despatched on this night was 215 of which 195 were detailed to attack Essen.

For details of the operations see the attached table.

31 (14.4%) sorties were abortive. In 24 cases this was due to a technical failure and in 5 to the illness of a member of the crew. One aircraft on Dieppe and one minelaying were unable to locate their target.

Moon

4. The moon was above the horizon and 80% of full during these operations.

Weather at Home Bases

5. Mist patches developed in the London area after 0100 and spread to affect few stations in 1,2 and 3 Groups. Mist thickened to fog after 0400 at three 1 Group stations. It was generally cloudless with some haze.

EssenPlan of Attack

6. The attack on Essen was planned to last for half an hour starting at 0130. Between 0130 and 0145, 15 specially selected Wellingtons of 3 Group were to illuminate the target with flares released on a T.R. fix. The remaining aircraft were to spread their attack as evenly as possible between 0132 and 0200, the best crews in each squadron being detailed to lead. The bomb load was to consist of the maximum economical load of 4 lb. incendiaries made up with the heavier types of H.E.

Aircraft were routed to cross the Dutch Coast north of the Hague and

.... / then proceed

then proceed direct to the target; turning right handed, they were to return South of Krefeld and the Hague, losing height and increasing speed on leaving the target area.

All aircraft were given the same aiming point in the centre of Essen town.

Weather

7. The target area was free from cloud, but the usual smoke and haze was present in moderate quantities. En route visibility and weather were generally good except for some patches of mist and cloud near the Dutch coast.

Results

8. 147 (75%) of the 195 sorties claim to have attacked the target area. Few aircraft claim to have identified the actual target and it appears that they were considerable hampered by haze. Many crews, however, reported that the flares were an effective help in identifying built-up areas and that they observed numerous fires, but that these were mostly small and scattered over a considerable area. This is confirmed by the photographic evidence. 55 aircraft took photographs with bombing showing ground detail, but only two of these have been plotted within 5 miles of the target. Others are scattered over the western Ruhr and there is no evidence of any concentration anywhere. A number of aircraft claimed to have identified the Rhine, but a few of these have been plotted West of that river in positions which suggest that what they really saw was the Maas. A few photographs show built-up areas in Duisburg; Oberhausen, and Mulheim and it is possible that a portion of the damage described in the report on the previous night's operations should, in fact, be attributed to this attack.

The lack of success may, perhaps be partly attributed to the fact that the plan of attack was not closely adhered to. The flare force was late in reaching the target area, only two of them dropping their flares before 0140. The period of greatest illumination was between 0140 and 0151 when 8 aircraft dropped flares. Two of these took photographs with their bombing and these have been plotted 10 and 56 miles West of Essen respectively. It is unlikely therefore that the target was adequately illuminated. One flare aircraft, however, took a photograph at Mulheim, 4 $\frac{2}{3}$ miles from Essen, but this was at 0201 when the attack was nearly over.

13 aircraft bombed outside the prescribed period, one being early and 12 late. The whole attack lasted 41 minutes.

Other Targets Attacked

9. 5 aircraft which were unable to reach the target area for various reasons, mostly technical failures, and 4 which did so but could not identify Essen bombed alternative targets. Two of these aircraft bombed aerodromes in the low countries, one the Aachen area and 3 Hamborn or Duisburg. Of two aircraft which attacked Oberhausen, one did so because it was heavily attacked by the ground defences while an aircraft which was attacked by a fighter was forced to drop its bombs South of Mulheim.

Cost

10. 13 (6.6%) of the aircraft detailed to attack Essen are missing and 24 (12.3%) suffered damage to varying extents. 22 aircraft i.e. 11.3% of those despatched were hit by flak, two of them Cat. A.C. A further 2 aircraft were damaged by enemy fighters.

The percentage missing on this smaller raid of 195 sorties is more than double that of the large raid on the previous night and also considerably higher than the overall normal figure (3.5%) for similar weather conditions in this area. Furthermore, the percentage damaged by flak is noticeably higher than for the large effort, being in fact of the same order as the average for the period August '41 - April '42.

.../ The comparison

The comparison is as follows:-

Date	Sorties	% Missing	% Damaged by Flak	% attacked by Enemy Aircraft
1/2nd June, 1942	956	3.2	8.1	3.2
2/3rd June, 1942	195	6.6	11.3	3.6
Aug. '41 - April '42	1937	3.9	12.2	1.7

From the reports received it appears that the greater part of the losses were sustained en route and not over the target, and were probably due to fighters - it will be observed that the enemy's success at fighter interception was more than double the average for the period Aug. '41 - April '42. The observations are not, however, sufficiently numerous or sufficiently precise to separate the losses at the target area from those outside. It seems reasonable however to apportion the total losses to flak and fighter 'en route' and at the target in the ratio of 2:1.

Summary

11. This attack was widely scattered over the Ruhr and the country west of the Rhine and there is no evidence that any damage was inflicted on Essen, though it is probable that some useful results were achieved against other built-up areas. Failure to attack Essen was probably largely due to the fact that the flares were scattered and in some cases considerable distances from the target. The flares were, nevertheless, of help in enabling other built-up areas to be located.

Losses were considerable above the average for similar weather conditions in this area, due probably to the enemy defences being 'keyed-up' by the two previous very heavy raids.

Dieppe 4 out of the six freshman crews from 1 Group detailed to attack Dieppe docks successfully carried out their task. They encountered fine weather except for some haze and all reported seeing their bombs burst in the target area. One crew said they saw large fires started. There is, however, no evidence to substantiate these claims as the only photograph remains unplotted.

Mine laying & Leaflets 10 Freshman from 3 and 5 Groups were detailed to lay mines in enemy waters and 7 of them completed their task. One of these aircraft is missing. Three out of the four crews ordered to drop leaflets in the Rennes area were also successful.

BC/S.26342/3/ORS.
13.7.42.

2/3rd June, 1942.

Target	Group	Type	No. of sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary				Result not known	Casualties			Interception			
				Primary	Primary Area	Reached Target Area		Over Enemy Territory			Not over Enemy Territory	Killed	Damaged by flak	Damaged by E.A.A.	Not done	Attacked	Not attacked
						Bombed other Target	Abortive	Bombed other Target	Abortive								
DUNDEE	1	Well. Io	7*		6				1								
		Well. II	40*		7				1								
		Well. III	9		8				1							2	
		Well. IV	20*		15				3					1	1		
	3	Well. Io	13*		9				2								
		Well. III	30		30	3	1		1	2						3	
		Stirling	21		15	1		1	1	1							
	4	Halifax	30		29			2		5				1	1		
	5	Sturpden	12*		7				4								
		Lancaster	27		21			1	1	2							
TOTAL			150		127	4	1	5	4	21		13	22	2	7	8	
DUNDEE	1	Well. Io	4*		2			1		1							
		Well. III	2*		2												
RELAYING	3	Well. Io	2*		2												
		Well. III	2*		2												
	5	Sturpden	4*		2				1			1					
FLYING	5	Sturpden	4*		3												
TOTAL			213	4	156	4	1	5	4	23		14	22	2	7	8	

* Not fitted T.R. 1335

+ Freshmen

Total Abortive 30

156

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 3/4th JUNE, 1942

Meteorological Advice Submitted to the Command

1. 0915 hours. Germany:- Fine in all areas. Smoke haze expected to be thick in the Ruhr. Hamburg - Bremen area better, only slight haze. Fog in Bight area, but reasonably certain it will not penetrate inland.
- France:- Good visibility and clear skies.
- Home Bases:- No cloud, but local mist towards dawn.
- 1215 hours. No change. Visibility much better in Bremen area than over Ruhr. Fair period continuing.
- 1640 hours. Targets:- All fine with moderate visibility. Fog not penetrating inland.
- Bases:- Fine, slight smoke troubles and valley mist at dawn. Coastal mist may affect 2 and 3 Groups.

Executive Orders

2. Weather conditions were expected to be good enough to offer a large choice of targets. The range possible in the hours of darkness available was the chief limiting factor. Bremen was selected as the target because of the importance of its submarine building yards and other ship building activities and also because, after a succession of operations in the Cologne and Ruhr districts, it was necessary to place an attack in a different area to prevent concentration of defences. Dieppe was chosen as a suitable target for some inexperienced crews, while others were detailed to lay mines in accordance with the mining programme.

Sorties

3. The total number of aircraft despatched on this night was 195 of which 170 were detailed to attack Bremen.

For details of the operations see the attached table.

28 (14.4%) sorties were abortive. In 24 cases this was due to a technical failure, in one to illness, and in one to an attack by an enemy fighter. One minelayer and one intruder reached the target area but were unable to identify their targets.

Moon

4. The moon was .70 of full. It rose early in the attack on Bremen. Intruder attacks were carried out before moonrise, minelaying operations and the attack on Dieppe after moonrise.

Weather at Home Bases

5. All bases remained free from cloud, but there were some patches of very local mist and fog towards dawn, especially near large towns.

BREMEN

Plan of Attack

6. The attack on Bremen was planned to last for half an hour starting at 0115. 15 T.R. aircraft of 3 Group were detailed to drop flares on a prescribed

.... / fix and at

fix and at prescribed times so that the target would be illuminated from 0115 to 0133. The remainder of the force, carrying the maximum economical load of incendiaries made up with the heavier types of H.E. were to spread their attack as evenly as possible between 0117 and 0145. All aircraft were to approach the target from West to East along the B lattice and to identify the target visually if possible before releasing their bombs. The route to the target was to be direct, crossing the enemy coast 5 miles S. of Den Helder on the outward journey and 10 miles North of Amsterdam on the return. All crews were given the same aiming point in the centre of Bremen.

Weather

7. The weather at the target was fine and visibility from 1 to 5 miles. A number of crews, however, reported ground haze, and a few said that this was thick enough to hamper seriously visual identification. En route some patches of fog were encountered near the Dutch coast and in the Bight.

Results

8. 132 (78%) of the 170 sorties claim to have attacked the target area. It appears that the plan of attack was fairly closely adhered to, only 10 aircraft bombing outside the prescribed period. 3 of these were early and 7 were late. 13 aircraft dropped flares between 0116 and 0128 so that illumination was provided throughout the planned period. Five of these aircraft took photographs with bombing showing points within 3 miles of the centre of Bremen, substantiating the reports of many crews that the flares were very helpful in illuminating the target. One Lancaster which arrived early in the target area reported that the first stick of flares illuminated fields to the N.E. of Bremen but that those that followed were well inside the target area. As this aircraft took a photograph with bombing of the centre of Bremen this report may be considered reliable.

Most aircraft reported numerous scattered fires in the target area, and several referred especially to a large oil fire. One aircraft reported fires at Delmenhorst. These reports are, on the whole, well borne out by photographic evidence. 42 aircraft took photographs with bombing showing ground detail. 5 of these show the target and a further 16 are within 5 miles. They show the fires were burning in the built-up area of Bremen on both sides of the river, but several aircraft have also been plotted in the Strom and Dölmenhorst areas 4 and 8 miles West of Bremen respectively. There is no evidence of a really useful concentration over the town and this is confirmed by subsequent daylight reconnaissance which reveals only scattered damage, though some of this is important. 3 large buildings and 3 tanks all belonging to oil refineries and a large warehouse on the quays have been destroyed. 3 other large industrial buildings have been partially destroyed.

There are a number of scattered points of damage to residential and commercial buildings, mainly in suburban districts and about 120 buildings in all have been destroyed.

Other Targets Attacked

9. 4 aircraft which were unable to reach the target area for various reasons attacked alternative targets. One of these bombed the Oldenburg area and the other 3 presumed aerodromes in the Low Countries.

Cost

10. 10 (5.9%) of the aircraft detailed to attack Bremen are missing and 18 (10.5%) suffered damage to varying extents. There were three cases of serious damage (Cat. E & AG) two of which was due to flak, one to fighter. 15 (8.8%) of the aircraft were hit by flak and three were damaged by fighters.

On this occasion the greater part of the missing aircraft were heavies and the greater share of the damage was also suffered by this type. The overall missing figure of 5.9% is higher than the average of 3.5% for similar weather conditions and visibility. The increase on this occasion is due to the larger losses of heavy aircraft since the percentage missing for the mediums i.e. 3.1%

is below average. While five mediums were attacked by enemy aircraft, the returning heavies only reported one encounter. It is likely, therefore, that some of the missing heavies were shot down by fighters. A possibility which is confirmed by observations of other returning aircraft.

Summary

11. The plan for illuminating the target area appears to have worked well on this occasion and many aircraft report that they were assisted by the flares. Nevertheless there is no evidence of any high concentration of aircraft over the target and this may be due to the prevalence of haze. It is estimated that about 65 aircraft dropped their bombs within 5 miles of the aiming point and that a proportion of the remainder attacked Delmenhorst. At Bremen a useful amount of scattered damage was inflicted including several items of importance.

The cost of the operation was above the average for this target in the prevailing weather conditions and the greater part of the casualties were heavy bombers. It is thought that the comparatively high losses were due to fighters.

Dieppe

4 freshmen crews were detailed to attack Dieppe and 3 of these completed their task. They all reported good weather conditions over the target and in 2 cases claimed to have seen their bombs burst in the dock area. The only photograph taken, which was secured by one of these 2 aircraft, shows open country two miles from the docks.

Minelaying and Leaflets

7 aircraft were detailed to lay mines and 5 to drop leaflets in France. They all completed their tasks successfully except for 1 minelayer which was unable to identify its position and jettisoned its mines safe.

Intruders

9 aircraft of 2 Group were despatched on intruder operations against aerodromes in Holland and Western Germany. 2 which were ordered to attack Vechta claimed to have identified their target and carried out a successful attack. In one case an enemy aircraft was believed to have been damaged. 5 other aircraft which were unable to identify their targets bombed alternatives which included Bremen, Hage A/D, Nordstrand Island causeway and an unidentified town. Two sorties were abortive.

BC/S.26342/3/ORS.
13.7.42.

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary				Casualties				Interceptions				
				Primary	Primary Area	Reached Target Area		Over Enemy Territory		Not over Enemy Territory	Missing	Damaged by Flak	Damage by Enemy Aircraft	Not due to Enemy Action	Attacked	Not Attacked		
						Bombed other Target	Abortive	Bombed other Target	Abortive									
BRISBEN	1	Well.Io	6*		5					1								
		Well.II	14		13			1				1 AC		3	2			
		Well.III	7		6					1			1 E.		6			
		Well.IV	30*		26			2	2		1 AC							
	3	Well.III	31		27					1	3	1 E.	1 n.	2	1			
		Stirling	15		6		1	1	3	2	2	1 n.		1 E.	1			
	4	Hullfax	37		29			1	2	3	2	5 n.	1 n.	1	3			
	5	Hampton	9*		5					1				1 E.				
		Manchester	6*		4						1	1 n.						
		Londonster	15		11					2	2	1 n.						
TOTAL		170		132		1	4	7	16	10	14	3	3	6	13			
DIRKPYE	1	Well.IV	2**		2													
	3	Stirling	2**		1					1		1 n.						
HINKEL.YING	5	Hampton	3**		2			1										
		Londonster	4*		4													
LOGAN.HORN A/D	2	Blenheim	1*				1											
ROOPE A/D	2	Blenheim	2*			1			1									
VERDE A/D	2	Blenheim	3*		2													
SP. DE A/D	2	Blenheim	3*			3												
LEAFLETS																		
ROOPE AND LILLIE	5	Hampton	1**		1													
		Manchester	4**		4													
			195		5	143		5	3	4	7	18	10	1 E.	1 AC	3 E.	6	13
														13 n.				

159

* not fitted 2.R. 1335

+ Freshman

Total abortive 28

HQST SECRETNIGHT RAID REPORT NO. 79COPY NO. 16BOMBER COMMAND REPORT ON OPERATIONS, NIGHT 4/5TH JUNE, 1942.Meteorological advice Submitted to the Command.

1. 0920 hours:- Target Areas:- North Sea coast of Germany threat of sea fog or low stratus drifting inland. Elsewhere fine with local haze.
- Home Bases:- Fine, local patches of mist or fog towards dawn. Threat of sea fog drifting inland in East Anglia.
- 0645 hours:- North France:- Cloudless skies.
- Home Bases Cloudless. Visibility falling very locally to 1-2000 yards owing to industrial smoke.

Executive Orders

2. The docks and shipping at Dieppe were chosen as a suitable target for freshmen. An unusually heavy intruder effort was directed against Schipol aerodrome because of a report that there might be a concentration of aircraft there in connection with bomber operations against this country.

Sorties

3. 35 sorties were despatched. For details of the operations see attached table. 15(42%) sorties were abortive. In 5 cases this was due to a technical defect and in the remainder to inability to identify the target on account of haze and fog.

Moon.

4. The moon which was 60% of full, was below the horizon for the attack on Dieppe but rose before the intruder operations.

Weather at Bases

5. Cloudless skies prevailed and visibility remained moderately good except for some local mist and haze towards dawn.

DieppeWeather Experienced

6. The weather remained fine and cloudless, but considerable haze over the French coast prevented a number of crews from identifying the target.

Results

7. Only 8 out of the 20 aircraft detailed to attack Dieppe claimed to have carried out their task successfully. 4 of these say they saw their bombs burst in the dock area and one crew reported seeing a fire there. 6 aircraft took photographs with bombing and 2 of these show the target; the remainder are all within 5 miles. Although none of the photographs show bomb bursts, it is possible, that the few aircraft which located the target may have achieved useful results.

Cost

8. There were no casualties on this raid.

Intruders

9. 13 Blenheim of 2 Group were sent to attack Schipol aerodrome. 9
...../aircraft

aircraft claimed to have definitely identified the target and bombed it successfully and a number of these reported that they left fires burning. One aircraft bombed lights which it believed to be Schipol and another, unable to identify the primary target on account of searchlight dazzle, bombed an aerodrome believed to be Seesterberg.

Leaflets

A single aircraft dropped leaflets in the Amiens area.

BC/S.263423/3/ORS.
19th July, 1942.

4/5th June, 1942.

Target	Group	Type	No. of sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary				Result not known	Casualties				Interceptions		
				Primary	Primary Area	Reached Area Bomed other Target	Target Abortive	Over Enemy Territory Bomed other Target	Not over Enemy Territory		Missing	Dem. by Flak	Dem. by S.A.	Not due to S.A.	Attacked	Not Attacked	
DIEPPE LOGES	3	Hell III Stirling	9 + 3 +	1	3		3 2			2 1							161
	5	Lancaster Hamden	2 + 6 +	1 2	1		3			1							
	TOTAL		20	4	4		8			4							
SCHIPOL A/B	2	Blenheim	13 *	9	1			1	1	1					1 X		
LE FLITS	5	Lancaster Hamden	10 + 10 +		1				1								
			35	13	6		8	1	2	5					1 X		

* not fitted T.R. 1335

* Freshmen

MOST SECRETNIGHT RAID REPORT NO. 80COPY NO. 16WEEVER AIRLAND REPORT ON NIGHT OPERATIONS, 5/6-7 JUNE, 1942Meteorological Advice Submitted to the Command

0915 hrs. Germany & France:- North Sea and Baltic Coast much layer cloud and patches of fog. Elsewhere fine but hazy.

Home Bases:- Sea fog drifting inland over East Anglia, but further North confined to Coastal strip. Elsewhere mist patches towards dawn in industrial areas.

1230 hrs. N. Germany:- Much layer cloud near coast, otherwise fine with industrial haze.

N. France:- Fine

Home Bases:- Sea fog not expected to drift more than 50-60 miles inland.

1715 hrs. Essen:- No cloud but thick haze.

Heligoland Bight:- Cloud amount uncertain, may be nil or much.

W. Coast France:- Fine, moderate visibility.

Paris:- Cloudless, good visibility.

Home Bases:- Threat of sea fog not regarded as serious. Many alternatives possible for diversion in S. & S.W.

Executive Orders

The north coast of Germany and an area for some distance inland was unfit for bombing operations because of a front with much cloud lying across it. Here to the south there was a choice of targets & Essen was selected as the most important one within convenient range.

Sorties

The total number of sorties despatched on this night was 198 of which 180 were detailed to attack Essen.

For details of operations see the attached table.

27 (13.6%) sorties were abortive. In 24 cases this was due to a technical failure and in 3 to the illness of a member of the crew.

Moon

The moon was below the horizon during these operations.

Weather at Home Bases

The weather remained cloudless and visibility was mainly moderate. There were some very local patches of mist or fog.

EssenPlan of Attack

The attack on Essen was planned to last for half an hour starting 0115. 15 aircraft of 3 Group were detailed to drop flares on a specified

...../SLX

fix at times which should have ensured the target being illuminated from 0115 to 0132. The remainder of the force were to distribute their attack evenly between 0117 and 0145, the best crews leading. The bomb load was to consist of the maximum economical number of incendiaries.

The route to the target was to be via Alkmaar. After bombing, aircraft were to turn right and pass S. of Cologne, crossing the coast between Dunkirk and Ostend. T.R. aircraft were instructed to start their homing run to the target well West of the Rhine and to make every effort to obtain a pinpoint on the river. It was hoped that they would thus be able to obtain an accurate E.T.A. at the target, thus providing a check for their T.R. fix and that this would prevent the wrong target being bombed.

All aircraft had the same aiming point in the centre of the old town of Essen.

Weather

There was no cloud in the Ruhr and visibility was mainly 1 - 5 miles. The usual industrial haze was reported by most crews and this appears to have been thick locally. The weather en route was fine with small patches of cloud and mist over the North Sea.

Success of Attack

118 (66%) of the 180 sorties claim to have attacked the primary target area and 100 of them bombed during the planned period of the attack. 4 aircraft attacked too early and 14 were late. The plan for illuminating the target was not carried out very successfully on this occasion. 4 aircraft dropped flares between 0114 and 0117 after which there was an interval of 7 minutes during which no flares were dropped. 6 more aircraft dropped flares between 0124 and 0127 and single aircraft at 0130 and 0141. Reports on the effectiveness of the flares varied considerably, but a number of crews, especially those attacking about 0125, found them useful to identify built-up areas. They were reported by numerous crews to be widely scattered however, and this was also the general comment on the fires which were started. This impression is confirmed by the photographic evidence. 40 aircraft took photographs at the time of bombing showing ground detail, but only 1 of these has been plotted within 5 miles of Essen. Others which have been plotted are widely scattered over the western Ruhr and most of the unplotted photographs are clearly of open country. Several aircraft have been plotted at Wesel and it appears likely that the bend of the Rhine there was mistaken for the one at Hamborn. A number of T.R. aircraft claimed to have obtained accurate pinpoints when crossing the Rhine, but it seems that in many cases they did not hold on their course long enough to reach the target area. A few photographs showed built-up area at Duisburg, Oberhausen, and Sterkrade where it is possible that useful results were gained. There is, however, no evidence of any success against Essen or of a concentrated attack on any other town.

Other Targets Attacked

20 aircraft reached the Ruhr area and bombed Oberhausen, Duisburg, Homberg or unspecified built-up areas. In most cases this was due to inability to identify Essen; but in 4 cases to being hit by flak or comed by searchlights. 4 other aircraft failed to reach the target area of account of technical failures or illness. 3 of these bombed Alkmaar aerodrome and one a searchlight concentration near Pottin.

Cost

12 (6.6%) of the aircraft detailed to attack are missing and 35 (19.4%) suffered damage to varying extents. There were 10 cases of serious damage (Cats. B and A3) seven of which were due to flak, two to fighters and one not due to enemy action ("port engine caught fire immediately after take off") 31 (i.e. 17.2% of aircraft despatched) were hit by flak and 2 were damaged by fighter attack.

An examination has again been made of the relative proportions of
...../Heavies

Heavies and Mediums missing and damaged. In order to obtain as accurate a picture as possible the numbers missing and damaged have been expressed as percentages of these sorties reaching enemy territory. The comparison is as follows:-

	Missing	Damaged by Flak	Attacked by Fighter	Damaged by Fighter	
Heavy sorties reaching enemy territory	60	6.6	26.6	5	3.3
Medium sorties reaching Enemy territory	98	8.1	15.3	0	0

The heavies show a somewhat lower percentage missing figure than the mediums; but they suffered considerably greater damage both by flak and fighter attack.

Under similar conditions of weather and moon, the average missing figure for raids in this area is 3.2% of sorties despatched. The figure on this occasion is 6.6%, and both heavies and mediums showed losses considerably in excess of the average. However, there is plenty of evidence that concentration in time and space was low and furthermore it appears that accurate heavy flak was much in evidence operating with many searchlights on large cones. There was in addition considerable searchlight activity over the whole Ruhr area.

At least 5 aircraft were seen to be shot down by flak in the Ruhr area and it is probable that the ratio of flak losses to fighter losses was about 3:2.

Summary

Of the 100 sorties despatched 118 claimed to have attacked and 100 of these bombed within a period of half an hour. The plan for illuminating the target was not carried out successfully and the reports of crews state that the flares were scattered. In consequence the attack was spread over the western Ruhr and there is no evidence that any good concentration was achieved. To this lack of concentration may be attributed the fact that loss to both heavy and medium bombers was above the average. Heavy flak was reported to be accurate and in much evidence and probable accounted for 60% of the casualties.

There is no evidence of any damage being done to Essen, but night photographs suggest that a part of the attack probably fell on built-up areas at Duisburg, Oberhausen, and Sterkrade.

Mine-laying

15 aircraft were detailed to lay mines in enemy waters and 13 completed their task successfully. They reported that visibility was good and they were able to pinpoint their positions satisfactorily. One other aircraft dropped its mines in an alternative position, due to incorrectly identifying its position. The remaining aircraft is missing.

Leaflets

2 out of 3 aircraft detailed to drop leaflets in the Rennes and Paris areas completed their task successfully.

HC/S. 26342/1/ORS.
20th July, 1942.

5/6th June, 1942.

Target	Group	Type	No. of Bertles	Aircraft claiming to attack		Aircraft failing to bomb Primary				Casualties				Interactions		
				Primary	Primary Area	Reached Target		Over Enemy Territory		Not over Enemy Territory	Missing	Damaged by Flak	Damaged by Enemy Aircraft	Not due to Enemy action	Attacked	Not Attacked
						Bombed other Target	Abortive	Bombed other Target	Abortive							
ESSEN	1	Well. Ic	10	6	2				1	1	1 m.					
		Well. III	9	4	1				2	2						
		Well. III	11	7	1				2	1	1 m.					
		Well. IV	18	13	1				2	2	3n. 1E.				4	
	3	Stir. Well. Ic	25	15	4			1	3	2	2x.C.5n.	2 Out.E		2	2	
	Well. III	5	1	1			1	2	2	2x.C.7n.		1 m.		1		
	Well. III	45	36	5				2	2	2x.C.7n.						
	4	Halifax	33	22	1			1	8	1	2x.D.7n.		1 E.		1	
	5	Lanc. Harpyden	13	11				1	1	1						
			11	3	4	1		1	2							
		TOTAL	180	118	20	1	4	3	22	12	6x.C. 2n. 1 E.	2 E.	1n. 1 E.	3	7	
MINEBLAYING	1	Well. Ic	2	2												
		Well. III	1	1												
	3	Well. Ic	2	2												
	Well. III	2	2													
	5	Lanc. Man. Harp.	2	2						1	1 n.					
		Man.	3	1				1								
		Harp.	3	3												
LE.FLEETS	1	Well. III	1						1							
		Well. IV	1	1												
	5	Man.	1	1												
			198	133	20	1	5	4	22	13	6 AC 1 E.	25n. 2 E.	1n. 1 E.	3	7	

* Not fitted T.R. 1335

+ Freshmen

n = minor

BOMBER COMMAND REPORT ON NIGHT OPERATIONS

6/7TH JUNE, 1942.

Meteorological Advice Submitted to the Command.

1. 0715 hours. Estimated midnight position of cold front:- 63° N 10° W - Shetland-Inverness - N.W. Ireland then southwards.

Germany and France:- fine but hazy.

Home Bases:- some high cloud; mist or fog patches developing during night.
- 1240 hours. Feeble cold front now in evidence from N. Scotland - Aldergrove expected to lie Flamborough Head - S.E. England at 0300 hours giving thunderstorms along its length, especially in the north. Thunderstorms not likely to be widespread. No other change from advice at 0915 hours.
- 1700 hours. Exdon:- no cloud, slight haze

Route:- Local sea fog; risk of thunderstorms on 4 Group's direct route; otherwise satisfactory.

Home Bases:- Satisfactory except for risk of thunderstorms particularly in Yorkshire.

Executive Orders

2. Fine weather gave a large choice of targets within the range of those that could be attacked during the hours of darkness. The small but important port of Exdon was selected as being of suitable size to be heavily damaged by an attack with the forces available on this particular night.
3. The aerodromes chosen for intruder operations on this night were those from which fighters were most likely to attack the aircraft proceeding to Exdon.

Sorties

4. 239 sorties were despatched. For details of the operations see attached table.
5. 28 (11.7%) of the sorties were abortive. 25 of them were due to technical defects and 3 (1 against Exdon and 2 Intruders) to inability to locate the target.

Moon

6. The moon was not above the horizon during the operations.

Weather at Home Bases

7. There were small amounts of cloud in 1, 4 and 5 Groups and larger amounts in 2, 3, 91 and 92 Groups with base not below 1500 ft; local thunderstorms in the south; visibility good on return.

EXDON

Plan of Attack

8. The attack was designed to last for 40 minutes, beginning at 0115 hours. 15 A.R. Aircraft were detailed to drop flares blindly on T.R. six, 3 of them at this time and followed by pairs at 3 minute intervals until 0133 hours and one aircraft at 0136 hours. The bundles of flares were to be dropped at 8 second intervals, the first bundle 30 seconds after the co-ordinates first appeared in line. The remainder of the aircraft were to spread their attack

...../xonly

evenly over the period 0117 - 0155 hours, identifying the target visually. These aircraft were to carry a maximum incendiary load of 4000 lb. H.E. bombs.

Weather

9. Over the target there was no cloud and good visibility, though there are some reports of slight haze. There was no moon but Northern Lights were present and provided a small amount of illumination.

10. A front running north easterly from about $53\frac{1}{2}^{\circ}N$ $3^{\circ}E$. was crossed on route. There was cloud in several layers along this front with occasional cumulo-nimbus and thunderstorms. Visibility was good ahead of the front and moderate with mist patches behind it.

Success

11. 198 (85%) of the 233 aircraft despatched claim to have bombed the target. These aircraft dropped 95 tons of H. E. and 276 tons of incendiaries. Crews report that they were very greatly assisted in identifying the target by the flares most of which were well placed. The first flares however seem to have fallen over Dolfzjil on the wrong side of the estuary and there are further reports of a stick of flares on this side of the estuary at 0125 hours. Another stick of flares was also dropped over open country to the west of the target. The remainder, however, appear to have been released over the target. One stick, however, was burning at about 12,000 ft. at which height it illuminated our own aircraft rather than the ground.

12. Considerable fires in the town and dock area were reported by those aircraft which attacked during the later part of the raid and these grew to such an extent that they were seen by crews for distances up to 100 miles on the return journey. There are reports that the sticks of incendiaries dropped during the first few minutes of the attack were scattered rather widely. These probably came from the few aircraft which bombed too early and accordingly had not assistance from flares.

13. 76 photographs showing ground detail were taken with bombing during this attack. 16 (21%) of these show the aiming point and 38 more have been plotted within five miles, indicating that the major portion of the force correctly identified the target.

14. Daylight reconnaissance fully confirmed the success of this raid. 10 acres of the Ship-building and Ship-repairing yards of the Nordseewerke have been devastated, 5 large sheds and 8 smaller ones being completely destroyed. Nearly all the buildings of Schulte and Bruns, builders of small sea craft have been destroyed as also have 12 sheds belonging to the Herings Fischeri A.G. The Harbour Offices, the Customs House and a number of workshops and sheds in the dock area were destroyed in addition.

15. Damage was done to railway buildings and to the town gas works. An area of 45 acres in the town, consisting mainly of commercial and residential property, has been devastated and it is estimated that in this area at least 150 houses were destroyed or seriously damaged. A further 100 houses were damaged in other parts of the town.

Timing

16. The timing of release of the flares adhered more closely than usual to the laid down. Neither of the aircraft which were briefed for 0127 hours however reached the target area and there was in consequence a gap from 0125½ hours to 0129 hours during which no flares were burning. 6 aircraft of the main force were early, bombs being dropped at 0105, 0110 and 0113 hours by single aircraft and at 0115 hours by 3 aircraft. Only 3 were late, 2 bombing at 0200 hours and one at 0217 hours. The attack diminished in intensity towards the end and only 2 aircraft bombed in the last 5 minutes. 190 aircraft therefore bombed in the period of 35 minutes from 0115 hours to 0150 hours, thus achieving the very high concentration in time of 326 aircraft per hour.

Other Targets Attacked

17. A Hampden which was unable to reach the target area owing to a
 / technical

technical defect bombed a concentration of searchlights on Arland Islands. No results were observed.

Casualties

18. 9 (3.9%) of the aircraft detailed to attack Emden are missing and 12 suffered damage to varying extents. There were 7 cases of serious damage (Cats. A, B, E) none of which were due to enemy action. Flak caused minor damage in 5 cases and there are no reports of any damage by enemy fighter attack.

19. On this occasion again the greater part of the missing aircraft were heavies which also sustained the greater portion of the damage due to flak. The average missing figure for similar conditions of weather and visibility over this area is 3.0% and the increase on this occasion was due entirely to the losses sustained by the heavies, the medium losses being subnormal at 2.3%.

20. There are no reports of any of the returning aircraft having been attacked by enemy fighters; but there are a number of well confirmed reports of our aircraft having been shot down by enemy fighters. Most of these incidents seem to have occurred on the way to the target in an area bounded approximately by lines through 53° 50' N, 06° 30' E, 53° 20' N and 05° 00' E. The missing were probably nearly equally due to flak and fighter defences with a slight 'bias' in favour of fighters.

Summary

21. This was a very successful raid in which a large proportion of the considerable attacking force appears to have found the target and bombed it, doing considerable damage. Favourable weather and close adherence to their instructions by the flare carrying aircraft were probably the chief factors in obtaining this result.

22. The cost of the raid was not unduly high although the percentage missing was slightly above normal which is probably accounted for by the fact that a very large proportion of the attacking force actually reached the target.

INTRUDERS

23. 3 Blenheims were detailed to attack Leeuwarden A/D and 3 to attack Ardorf A/D both of which lie close to the route of the aircraft attacking Emden.

24. Only 1 of the aircraft despatched to Leeuwarden attacked the target which was not lit and was therefore difficult to locate on this moonless night. The bombs were believed to fall on the aerodrome but no results were seen. 1 of these aircraft had to return early owing to a technical defect and the other was unable to locate the target. The weather over this target was cloudless with good visibility but dark.

25. At Ardorf the visibility was not so good and there was some haze. In spite of this 2 of the 3 aircraft despatched found and bombed the target, dropping their bombs on the airfield along the runways. The third aircraft was unable to find the target.

6/7th June, 1942

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary					Casualties				Interactions		
				Primary	Primary Area	Reached Target Area		Over Enemy Territory		Not over Enemy Territory	Missing	Damaged by Flak	Destroyed by Enemy Aircraft	Not due to Enemy action	Attacked	Not Attacked	
						Bombed other Target	Abortive	Bombed other Target	Abortive								
ENEMY	1	Well. Ic	13 *		13												166
		Well. II	8 *		8												
		Well. III	10		7			2		1			1 AC		1		
		Well. IV	28 **		26					1	1						
	3	Well. Ic	6 *		4					1	1			1 E 1 B 2 AC			
		Well. III	59		55		1		5		2 n.						
		Stirling	40		35				5	2	1 n.		1 B				
	4	Hullfax	27		22			1	1	5	1	2 n.	1 E.		1		
		Wanderer	15 *		12			1		2							
	5	Manchester	7 *		5					1		3					
		Lancaster	20		15		1			4							
	TOTAL			233		198		2	1	3	20	9	5 n.			2	
RAF GROUP A/D	2	Blenheim	3 *	1			1			1							
RAF GROUP A/D	2	Blenheim	3 *	2			1										
			239	3	198		4	1	3	21	9	5 n.			2 E. 2 B. 3 AC.	2	

* Not fitted T.R. 1335

Total Abortive 28

MOST SECRET

NIGHT RAID REPORT NO.82

COPY NO. 16

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 7/8TH JUNE, 1942.

Metecrological Advice Submitted to the Command.

.0924 hours. Germany:- Cold front Berlin to Mannheim. Good clearance in Ruhr; well broken low cloud. Good visibility. Northern areas more low cloud but breaks probable.

H.V. France:- Well broken cloud. Rather strong winds.

Bases:- Broken low cloud, chance of occasional showers.

1230 hours. Germany:- Slightly increased threat of showers on coast. Cologne area may be subject to medium cloud.

Bases:- Satisfactory.

1645 hours. Target:- Slight improvement; showers not now expected to be frequent in mining area.

Route:- Slight risk of heavier thunder showers on return.

Bases:- Satisfactory.

Executive Orders

There was some deterioration in weather conditions and a high wind. These factors, and the heavy scale of effort put out on the two preceding nights, limited the nights operations to sea mining for which 46 crews were detailed.

Sortics

46 sortics were despatched on this night as follows:-

Target	Group	A/C Type	Sortics	Laid mines in primary Area	Over M.A. Abertive	Damaged by Flak
Minelaying	1	Well.III	7	7		
		Well IV *	4	3	1	
	3	Well.III	8	8		
		Stirling	12	11	1	1 Minor
	5	Lancaster Hampden *	9 3	9 3		
Leaflets	5	Lancaster+*	2	2		
		Hampden +*	1	1		
TOTAL			46	44	2	1 Minor

* Not fitted T.R. 1335

+ Freshmen

...../Moon

Moon

The moon was below the horizon during these operations.

Weather at Bases

The weather remained cloudless and visibility was generally good.

Mine layingResults

41 out of 43 aircraft detailed to lay mines in enemy waters successfully completed their task. Most crews reported that visibility was good and that they were able to obtain satisfactory pinpoints before laying their mines. There appears to have been a small amount of low cloud in the mine laying area and some crews therefore relied solely on a P.R./¹¹ to identify their positions. Two sorties were abortive owing to inability to identify the mine laying area.

Cost

None of our aircraft were missing from these operations and there are no reports of attacks by enemy fighters. There is scattered evidence of flak and searchlights at Tereschelling and Aeland and one report from an aircraft in 3 Group that a cannon shell passed through the fuselage.

Leaflets

3 aircraft detailed to drop leaflets in the Rennes and Paris area completed their task.

BC/S.26342/1 /ORS.
20th July, 1942.

BOMBER COMBINED REPORT ON NIGHT OPERATIONS, 8/9TH JUNE, 1942.

Meteorological Advice Submitted to the Command.

1. 0915 hours. Germany:- Large amounts of low strato-cumulus along the northern coastal strip; in Ruhr area, small amounts of cloud and good visibility; Rhine valley, fine.
France:- Fine
Home Bases:- Fine with good visibility.
- 1240 hours. No change except that Ruhr area has improved. No cloud, very good visibility, expected there now.
- 1030 hours. Germany:- 5-7/10 increasing to 10/10 over N.W. Coastal strip. In Ruhr about 3/10 drifting cloud and good visibility.

Executive Orders

2. Essen was chosen as the target on this night as it was the most important one in the area with the most promising weather. In addition a force of freshen was ordered to Dieppe.

Sorties

3. 196 sorties were despatched on this night, 170 of them to Essen. For details of the operations see the attached table.
4. 32 (16.3%) of the sorties were abortive. The reasons were as follows:-

Technical failures	20
Inability to locate target	6 (1 Essen, 5 Dieppe)
Sickness of member of crew	4
Attack by fighter	1
Unable to penetrate searchlight defences	1

Moon

5. The moon was not above the horizon during the operations.

Weather at Home Bases

6. Very variable amounts of cloud, base 2,500 - 4,000 ft; visibility moderate to good.

ESSEN

Plan of Attack

7. This attack was planned to last 25 mins, only beginning at 0100 hours. 15 B. Lington III aircraft were to release flares blindly on T.R. 1335 fix, the first two at zero hour, followed by pairs at 3 minute intervals until 0112 hours and the remaining one at 0121 hours. It was thereby hoped to illuminate the target during the whole course of the attack. The remaining aircraft were instructed to confirm visually confirming the position by T.R. 1335 fix, between 0102 and 0125 hours, this attack being spread as evenly as possible over this period. The main force carried the maximum load of incendiary bombs and large H.E. bombs.

Weather

8. There were very variable amounts of cloud over the Ruhr area, some

.../in feet

aircraft reporting none and others as much as 8/10. Visibility was poor with much ground haze. On route, both over the North Sea and over Holland there was 5-10/10 strato-cumulus cloud with tops from 5,000 in the west to 9,000 over Holland.

Success of the Attack

9. 126 (74%) of the 170 aircraft despatched claim to have bombed the target area. These aircraft dropped 76 tons of H.E. and 177 tons of incendiaries. In the weather conditions prevailing very few of these aircraft were able to identify the target with any certainty. Most of the aircraft equipped with T.R. 1335 bombed on fixes, confirmed in a number of cases by pin-points on the Rhine on the run up, by the sight of a built-up area, and by the Bldery See and the broad loop of the Ruhr to the S.W. of the target seen after the release of the bombs. There are reports of scattered fires over the Ruhr but no concentration in any one place.

10. The flares were not of great assistance on this attack. In the first 6 minutes of the flare period there was never more than 1 stick burning at once. 1 of the pair of aircraft detailed for zero hour turned back early and the other only released half his flares. The T.R. 1335 of one aircraft detailed to drop flares at 0103 hours went u/s and this aircraft did not release his flares until 0108 hours and then it was on a visual identification. One of the two aircraft detailed for 0106 did not release his flares until 0110 hours. From 0103 hours to 0120 hours, however, two sticks were burning all the time, except for one minute, in spite of the fact that one of the aircraft detailed for 0109 hours returned early. Except for the one aircraft whose T.R. 1335 was u/s all the flares were dropped blindly on G.R. fixes. In spite of this they do not seem to have fallen over the target. Some are reported as falling over open fields, and others were over Duisburg and assist crews in pinpointing the Rhine at that point. It would appear that they were scattered, and fell mainly to the west of the target.

11. 31 photographs showing ground detail were taken with bombing on this night. Only 9 of these have been plotted and none of these are within five miles of the target, their distances vary from 7 to 26 miles away and most of them lie to the W or N.W. The unplotted ones show mainly open country and it is unlikely that any of them are close to the target area. It would thus appear that the attack was very scattered. Subsequent reconnaissance shows that there were in Essen only a few cases of minor roof damage as a result of this raid.

Other Targets Attacked

12. A aircraft which failed to find the target state that they bombed other targets in the Ruhr, and another which had to return early attacked an unidentified built up area near Lennich.

Casualties

13. 17 (10%) of our aircraft are missing from Essen and a further 17 (10%) suffered damage to varying extents. There were 3 cases of serious damage (Cats. 10, B & E) one of which was due to flak, one to fighter and one not due to enemy action. Of those damaged by enemy action, 14 cases were due to flak and 2 to fighter.

14. It is evident that the aircraft which took part in this operation were very scattered and there is no evidence of any concentration over the target or in any locality; the reports received also show that heavy flak was very intense and accurate and in addition the enemy's fighters were active. These factors no doubt account for the high missing rate on this occasion - 10%, which compares with an average rate of 3.1% for similar conditions of moon and weather.

Summary

15. This attack was very scattered, mainly owing to the haze which made the recognition of ground detail extremely difficult. As usually happens in an attack on this target in such conditions, the majority of the bombs were dropped to the W. and N.W. of the target, but there does not, on this occasion, appear to have been any concentration in any one place and it would

no large fires were started. A contributory factor may have been the poor timing of the flares, and the fact that two sticks of these were released on attempted visual identifications owing to the T.R. 1335 being u/s.

16. No doubt as a result of the scattered nature of the attack, which assisted the enemy defences in concentrating on single aircraft, the missing rate was high.

Dierpe

17. 19 freshmen were despatched to Dierpe to attack the docks there. Variable cloud and only moderate visibility were encountered and only 7 aircraft were able to identify the docks with certainty. 3 more claim to have dropped their bombs in their neighbourhood. 1 of these aircraft received minor flak damage.

Intruders

18. 3 aircraft set out to attack Twente aerodrome and 3 to attack Venlo aerodrome. 2 of the aircraft which set out for Twente returned early. The remaining one crashed on returning to this country and all the crew were killed. Only 1 of the 3 aircraft which went to Venlo located and bombed the target. The other 2 after failing to locate the primary bombed Eindhoven aerodrome and Dusseldorf/Lohausen aerodrome.

Leaflets

19. The one Stirling which set out to drop leaflets over France was successful in accomplishing its task.

RC/S.26342/3/OPS.
27th July, 1942.

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary			Result not known	Casualties				Interactions			
				Primary	Area	Reached Target Area	Over Enemy Territory	Not over Enemy Territory		Missing	Damaged by Flak	Damaged by Enemy Aircraft	Not due to Enemy Action	Attacked	Not Attacked		
ESSEN	1	Well. Ic	10 *		8	1				1		1 n.		1			
		Well. II	11 *		10					1					2		
		Well. III	7 *		5				1								
		Well. IV	22 *		15	1	1	2	2	2 n.	1 B.		3				
	3	Well. Ic	4		4										1		
		Well. III	38		31	1		2	2	2	3 n.		1 AC		2		
		Stirling	14		10			1	2	1	1 n.			1	1		
	4	Well. Ic	12		29	1		3	2	6	1 E. 7 n.				1		
		Handen Lancaster	9 *		5			2	2	3					1		
	TOTAL			170	126	4	1	9	13	17	14	1	1	5	8		
DIERPE	1	Well. Ic	14 *		2				1								
		Well. III	2 *		2												
	3	Well. III	5 *	2		1		1	1								
		Stirling	6 *	4	1	1				1 n.							
	5	Handen Lancaster	3 *	1		2			1								
TOTAL			19	7	3		5	2	1	1				1 E.			
TREWE/D	2	Bienheim	3 *					2	1					1 E.			
VENLO/D	2	Bienheim	3 *	1		2											
LE-FLERS	3	Stirling	1 *		1												
			196	8	130	6	5	1	10	17	1	18	1 E. 14 n.	1 B.	1 E. 1 AC	5	8

* not fitted T.R. 1335

* Freshmen

Total abortive 32

HQST SECRET

NIGHT RAID REPORT NO.84

COPY NO. 16

BCMBR COMMAND REPORT ON NIGHT OPERATIONS JUNE 9/10TH, 1942.

Meteorological Advice Submitted to the Command.

0925 hours. Germany:- Probable southern limit of looped occlusion 50 miles S. of Hamburg. Ruhr area: probably small amounts of low and medium cloud, but possibly more.

N.W. France:- Small amounts medium and high cloud.

Home Bases:- Fair, good visibility.

1240 hours. Targets:- Little change, rather bad conditions Bight area; cloud base 1000 - 1500 ft. with occasional showers. W. Frisian area better. N.W. France area clear, though bad weather in south may spread as far as Nantes.

1710 hours. Targets:- German coastal areas 7-9/10 cloud at 1000 - 2000 ft, occasional showers. N.W. France, cloudy at first, dispersing.

Home Bases:- No trouble apart from local smoke pollution.

Executive Orders

A small force was given a minelaying task. With the possible exception of the Ruhr weather conditions over bombing targets were very poor.

Sorties

54 sorties in all were despatched on this night as follows:-

Target	Group	A/C Type	Sorties	Laid mines in primary area	Abortive			Dcn. by plank
					Over N.A.	Over S.E.	Hot over S.E.	
MINELAYING	1	Well IV *	12	12				
		Well II *	6	6				
	3	Well III	20	19		1		2 (minor)
		Stirling	11	10		1		
	5	Lancaster	5	1	1	2	1	
TOTAL			54	48	1	4	1	2 (minor)

* Not fitted C.R. 1335.

6(11.1%) sorties were abortive. In 3 cases this was due to inability to identify the minelaying area on account of poor visibility, The rest were due to icing, and engine failure,

Moon

The moon was below the horizon during these operations.

Weather

Cloud was about 3/10 at the English Coast and increased on route to 8/10in the

2.

in the minelaying areas. Visibility below the cloud base, which was about 2000 ft. was fairly good. Occasional showers were experienced over Denmark. At home bases cloud averaged 5/10, base 3000 ft. on the return but visibility remained good.

Results

48 aircraft claimed to have laid their mines in the areas ordered. Most crews were able to obtain a satisfactory pinpoint to identify their position, but a few relied solely on a T.R. fix.

Cost

None of our aircraft were missing from these operations and there are no reports of attacks by enemy fighters. There were two reports of minor damage by flak.

BC/S.26342/1/OPS
20th July, 1942.

AIRCRAFT CHART NOT AVAILABLE

BOMBER COMBINED REPORT ON NIGHT OPERATIONS 11/12th JUNE, 1942.

Meteorological Advice Submitted to the Command

1. 0915 hours. Germany:- North West affected by cold front from 2300 hours to 0300 hours, giving rain, medium cloud and low cloud at 1,000 ft. Stettin area probably better. Medium cloud and about 6/10 low cloud over area further south.
- N.W. France:- Broken cloud.
- Home Bases:- Satisfactory except for slight threat of low cloud to 4 Group.
- 1225 hours. Heligoland Bight:- Cloud base about 1,500 - 2,000 ft. with patches at 1,000 ft.
- St. Nazaire:- Some well-broken cloud.
- 1715 hours. Minelaying areas:- Main cloud base over Frisians 1,500 - 2,000 ft. lower in Heligoland Bight area. Conditions improving further east. Frontal conditions over Denmark with cloud from 1,000 - 10,000 ft. and layer cloud above.
- France:- Thundery rain in the North West. Broken low cloud with thunder late in night.
- Home Bases:- Low cloud with base well above 1,000 ft. and intermittent rain or drizzle by dawn in 1 and 4 Groups. Local visibility troubles likely in other Groups.

Executive orders

2. The heavy cloud which was forecast for this night gave conditions which were more suitable for mining than for bombing, and the effort was confined to this type of operation. Advantage was taken of the cover afforded by this cloud to send some of the minelaying aircraft into the Baltic.

Sorties

3. 91 aircraft were despatched on minelaying operations on this night. For details of the operations see attached table.
4. 6 (6.6%) of the sorties were abortive, 5 of them owing to technical defects and 1 owing to inability to obtain a pinpoint.

Moon

5. The moon was not above the horizon during the operations.

Weather

6. Cloud variable with good visibility below over Frisian Islands. 9/10 layer cloud with good visibility below in Southern Baltic.

...../Small

7. Small amounts of medium and high cloud over Home Bases during early part of night, becoming 10/10 layer cloud in East Anglia and South Midlands with rain in the extreme south of this area towards dawn. Visibility good.

Results

8. 81 (89%) of the 91 aircraft despatched carried out their task and laid 218 mines, 186 off the Frisian Islands and 32 in the Western Baltic. In addition three aircraft attacked ships which they encountered with the bombs which were carried in addition to mines by some of the aircraft. In one case bombs were seen to burst just astern of two small ships. In the others no results were observed. Another aircraft dropped its bombs on a flak position at the western end of Juist Island. The bursts were seen but no results observed.

Casualties

9. 4 (4.4%) of our aircraft are missing from this operation and 4 suffered minor damage by flak.

10. The heavy aircraft had a higher missing rate than the mediums and they also sustained all the flak damage.

11. Flak seems to have been more intense than usual over the Frisian Isles where also there was night fighter activity. It is reported that the flak was accurate with searchlight co-operation.

12. From the reports received it would appear that one loss was due to flak and one to fighter; of the other two, a somewhat fragmentary W/T message was received from one, of which only the letters ENG, a prearranged code word could be understood. It is inferred that its failure to return was caused by engine trouble.

BC/S.26342/3/ORS.
27th July, 1942.

11/12th June, 1942

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb primary		Over Enemy Territory		Missing	Casualties		Interceptions	
				Primary	Primary area	Reached target area	Other Target	Other Target	Other Target		By Flak	By Enemy aircraft	Not due to Enemy action	Attacked
MINELAYING Frisian Islands	1	Well-Ic	9	9										
		Well-III	8	8										
		Well-IV	9	9										
	3	Well-Ic	5	5										
		Well-III	19	15	2				1	1				
5	Stirling	19	17					1	1	3 n.				
	Handlon	5	5						1					
Western Baltic	5	Handlon	7	6	1									
		Lancaster	10	8					1	1 n.				
			91	81	3			3	4	4 n.			1	

* Not fitted T.R. 1335

Total abortive 6

BO'BER COMMAND REPORT ON NIGHT OPERATIONS, 16/17th JUNE, 1942

Meteorological Advice submitted to the Command

1. 0920 hours. Estimated midnight position of warm front 57°N. 0° - Newcastle - S.W. Wales then southwestwards; occluded front from N. Holland to Baltic.

Germany:- North of 52½°N. generally overcast with low cloud. Ruhr-Rhine area cloudy with some breaks. Much residual convection cloud east of 10°E.

France:- Variable cloud in N.E; well broken layer cloud in N.W.

Home Bases:- Slight rain near front. Elsewhere variable amount of medium and low cloud with moderate visibility.

1230 hours. No change.

1700 hours. Ruhr:- 6-9/10 cumulus and strato-cumulus, base 2,000 ft. tops 10,000 ft., with possibly some alto-cumulus above. Some medium cloud but very little convection cloud above 10,000 ft.

N.W. France:- Broken strato-cumulus, tops not above 8,000 ft.

Home Bases:- 1 and 5 Groups strato-cumulus decreasing later; visibility moderate early but only 1,000 - 2,000 ft. locally at dawn. 2 Group much cloud at 1,000 ft, but visibility never below 2,000 yds. 3 Group probably fit all night. 4 Group all cloud above 2,000 ft. visibility moderate to good except northern stations may be affected by smoke. 91 and 92 Groups probably fit all night.

Executive Orders

2. Outlook for the Home Bases was better but target areas were still cloudy as on the few previous night. Essen was selected as the target for a blind bombing attack.

Sorties

3. There were 127 sorties including 12 minelayers flown on this night. For details of the operations see attached table.
4. 33 (26%) of the sorties were abortive. In 15 cases this was due to icing, in 11 to technical defects, in 1 to flak and in 6 to inability to obtain a pinpoint in the minelaying area.

Moon

5. The moon was not above the horizon during the operations.

Weather at Home Bases

6. The amount of cloud was generally small except in East Anglia where there was 8/10 at 1,000 - 2,000 ft. Visibility was moderate with some local smoke trouble.

,...../ ESSEN

ESSEN

Plan of Attack

7. All aircraft were instructed to bomb blind on T.R. 1335 fix, no endeavour to identify the target visually being made. The approach was to be made along the 'B' lattice line from S.E. to N.W. starting at least 20 miles from the target. The attack was to be made between 0150 and 0220 hours. The outward route was over Blankenbergho then South of Brussels and crossing the Rhine south of Bonn. Crews were instructed that if the cloud broke when they reached Bonn they were to attack that town or any other built-up area outside the Ruhr.

Weather

8. There was 10/10 cumulus and strato-cumulus with tops to 13,000 ft. and ice between 10,000 and 12,000 ft. over the North Sea and Belgium. The cloud broke to 5-8/10 over Western Germany and very few aircraft went on as far as Essen where the cloud was still 5-8/10 and there was thick haze.

Results

9. Owing to the cloud breaking as the aircraft approached the Rhine only 16 (19%) of the aircraft which set out to attack Essen claim to have done so. These aircraft dropped 14 tons of H.E. and 23 tons of incendiaries. All of them bombed on T.R. 1335 fixes and they were none of them able to see any ground detail. Except for one aircraft which reports the glow of a fire none of the attackers observed any results.

10. Owing to the cloud and haze none of the photographs taken with bombing on this night showed any ground detail and there is no evidence as to the success of the raid.

Other Targets Attacked

11. 45 aircraft finding that the cloud was breaking when they reached the Rhine attacked Bonn dropping 49 tons of H.E. and 69 tons of incendiaries. Very few of them saw any visible ground detail and bombing was accordingly done on T.R. 1335 fix. A number of aircraft report one or two fires but no other results were seen. No photographs taken with bombing show ground detail, and a subsequent daylight reconnaissance has not revealed any damage to the town.

12. In addition to Bonn, Aachen, Cologne and other built-up areas in Western Germany were bombed by aircraft which did not reach the primary.

Casualties

13. 8 (7.5%) of our aircraft are missing from this operation and 20 (19%) suffered damage to varying extents. There were 4 cases of serious damage (Cat. A, B, E.) one of which was not due to enemy action (Cat. A). Of those aircraft which were damaged 17 (16%) were hit by flak and 3 by enemy fighters; one of the aircraft hit by flak was also hit by a fighter.

14. On this occasion the efforts of our bombers were spread over a very wide area and the concentration was therefore very low. Heavy flak, which was intense and accurate with well directed searchlight cooperation was encountered by those who reached Essen, and somewhat similar conditions were experienced at Cologne. There was slight heavy flak at Bonn and heavy flak over other defended areas.

15. The low concentration, particularly over Essen, would appear to be the main reason for the high missing rate; 10 of the 17 cases of flak damage reported were sustained by the 19 aircraft who claim to have reached the Essen area and in addition, 2 out of the 3 cases of fighter damage also occurred in the locality. It seems probable that the total losses on this occasion were caused equally by flak and fighter.

Summary

16. The occurrence of large breaks in the cloud over the Ruhr area caused most

..../ of the

of the aircraft to attack alternative targets, mainly Bonn. Very few aircraft saw any ground detail owing to poor visibility and the attack was very scattered and little success was achieved. The spreading of the attack led to low concentrations of aircraft over the enemy defences and probably for this reason the percentage of casualties was above average.

Mineslaying

17. 6 of the 12 aircraft detailed to lay mines off Lorient were successful in accomplishing this task and 6 mines were laid. The others were not able to obtain pinpoints in the target area owing to low cloud and poor visibility and accordingly returned to base. No incidents of note occurred during these operations.

Leaflets

18. 8 of the 9 aircraft which set out to drop leaflets over France did so successfully, but the remaining one had to return early owing to a technical defect.

EC/S.26342/ /ORS.
27th July, 1942.

16/17th June, 1942.

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Attacked Bonn	Aircraft failing to bomb Primary			Casualties				Interceptions		
				Primary	Primary Area		Reached Target Area	Over Territory	Not over Enemy Territory	Missing	Damaged by Flak	Damaged by Enemy Aircraft	Not due to Enemy Action	Attacked	Not Attacked	
ESSEN	1	Well.III	14	1		4		5	3	1		1 E	1 A	1	2	
	3	Well.III	26	6		11		1	4	2	2	1 E 4 n.	1 n.	1 A	2	
		Stirling	12	3		2			3	3	1	1 E 1 n. 1 n.			1	2
	4	Halifax	39	1		25		2	5	2	4	6 n.	1 n.		1	2
	5	Lancaster	15	5		3	2	1	1	3		3 n.				1
		TOTAL	106	16		45	2	9	13	14	8	17	3	2	5	7
MINESLAYING LORIENT	5	BombGen	12 *	6			6									
LEAFLETS	3	Well.III Stirling	4+ 5+	4 4						1						
			127	30		45	2	6	9	13	14	8	1 E. 1 B. 1 A. 14 n.	1 B. 2 n. 1 A	5	7

* not fitted T.R. 1335

Total abortive 33

+ Freshman

Damaged both by flak and fighter

MOST SECRET

NIGHT RAID REPORT NO. 87

COPY NO. 16

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 17/18th JUNE, 1942

Meteorological Advice Submitted to the Command

1. 0920 hours. Estimated midnight position of cold front is $61^{\circ}N 4^{\circ}E$ - Yorkshire - S.W. Ireland. Front active with thundery cloud to great heights and squally rain.
- Germany:- Much cloud and occasional rain over coastal areas, and broken convection cloud inland; visibility moderate.
- France:- Variable cloud except in south which will have continuous low cloud and rain.
- 1245 hours. Front may not be as far south as expected at 0920 hours and much of the home base area may not be affected during the night.
- Target areas:- No change.
- 1655 hours. Frisian Islands:- Much low cloud below 1,000 ft. at present but expected to lift above 1,000 ft. by nightfall. Cumulus with tops to 10,000 ft. and icing on route.
- Lorient:- Broken strato-cumulus 3-7/10 with base about 2,000 ft. and tops 8,000 ft.; good visibility.
- Home Bases:- Much strato-cumulus at 2,000 ft. and local smoke trouble but majority should be fit.

Executive Orders

2. Northern Bases were doubtful so operations were limited to 3 and 5 Groups who were given a sea-mining task. Freshmen were ordered to St. Nazaire to cover a minelaying operation in that neighbourhood.

Sorties

3. 75 sorties were despatched. For details of the operations see attached table.
4. 26 (35%) of the sorties were abortive. 19 of these (4 minelayers and 15 attacking St. Nazaire) were due to inability to pinpoint owing to the weather and the remaining 7 to technical defects.

Noon

5. The moon was not above the horizon during the operations.

Weather at Home Bases

6. Home Bases had cloud with base above 3,000 ft. and moderate visibility.

MINELAYING

7. 39 of the 46 aircraft detailed for this task were successful and 102 mines were laid, 92 off the Frisian Islands and 10 off St. Nazaire. In the Frisian Islands area there was 8/10 strato-cumulus cloud with base at about 3,000 ft. and moderate visibility. Off St. Nazaire there was about 7/10 strato-cumulus with base about 6,000 ft. and here it was so dark that a number of aircraft were unable to pinpoint.
8. None of our aircraft are missing from this operation but two suffered damage from fairly accurate heavy flak.

.... / ST. NAZAIRE.

17/18th June, 1942

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary			Casualties				Interceptions		
				Primary	Primary Area	Reached Target Area	Over Enemy Territory	Not over Enemy Territory	Missing	Damaged by Flak	Damaged by Enemy Aircraft	Not due to Enemy Action	Attacked	Not Attacked	
MORLAINE Prison Islands	3	Well.III	19		17		1		1						178
	5	Lancaster	12		12						1 AC 1 n.				
St. Nazaire		Hampden	15*		10		4		1						
ST. NAZAIRE	3	Well.III	16*	2	1		10		2	1					1
		Stirling	11*	4	1		4			2		1 n.		1 E.	2
LE.FLETS	3	Stirling	2*		2										1
			75	6	43		19		2	5		1 AC 2 n.		1 E.	4

* Not fitted T.R. 1335

+ Freshmen

Total abortive 26

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 18/19th JUNE, 1942

Meteorological Advice Submitted to the Command

1. 0920 hours. Estimated midnight position of front Bristol Channel - Felixstowe - Hamburg then E.N.E. Along front a narrow belt of rain with cloud, probably in several layers.

Germany:- North of front 10/10 strato-cumulus, base about 1,000 ft. South of front variable amounts of layer cloud.

N. France:- Layer cloud with some large breaks.
- 1300 hours. N.W. Germany:- 8-10/10 cloud, base not below 2,000 ft.

Frisian Islands:- Considerable cloud but base not below 1,500 ft.

Lorient:- Considerable cloud but base probably above 1,500 ft.

Home Bases:- Much low cloud with base 1,000 - 2,000 ft. except in 2 Group and part of 3 Group where it may be below 1,000 ft. at take off.
- 1650 hours. Frisian Islands:- 10/10 cloud, main layer about 5,000 ft., but another below with base 1,000 - 1,500 ft. and in patches about 600 ft. Base of lower layer should lift well after midnight.

Lorient:- Much low cloud with some breaks, base 1,500 - 2,000 ft.

Home Bases:- Much low cloud with base at 2,000 ft. or higher and no visibility troubles in 1, 4 and 5 Groups. Local troubles due to low cloud base before midnight in 2 and 3 Groups. Base should lift after midnight.

Executive Orders

2. A mining operation was undertaken as the weather was more suitable for this than for the bombing of Emden which was planned as an alternative, the choice depending on later meteorological information. The operation was not a large one because the planned quota of minelaying for the month was reaching completion.

Sorties

3. 65 sorties were despatched on minelaying operations. For details see attached table.
4. 13 sorties were abortive, in all cases owing to the weather preventing the aircraft from locating the target area.

Moon

5. The moon was not above the horizon during these operations.

Weather

6. At Home Bases there was variable cloud and moderate to good visibility. Over the North Sea and the Heligoland Bight there was 8-10/10 cloud, breaking

.../ occasionally

occasionally to 5/10, base 1500 - 2500 ft. tops 3,500 - 4,500 ft. and moderate to good visibility. Over South England the Channel and N. France there was much cloud with the base of the lowest layer very close to the surface near the French Coast.

Results

7. 52 of the 55 aircraft which set out to lay mines near the Frisian Islands did so successfully and laid 148 mines. The remaining 3 were unable, owing to the darkness, to obtain pinpoints. 10 Hampdens were despatched to lay mines off Lorient but they were all turned back by the cloud base falling to below 500 ft. at/north French Coast.

Casualties

8. 1 (1.5%) of our aircraft is missing from this operation and 3 sustained damage which was due to flak. There are no reports of attacks by enemy fighters, the principal enemy defence being flak from ships off the Frisian Islands.

BC/S.26342/2/ORS.
27th July, 1942.

18/19th July, 1942

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary			Missing	Casualties			Interceptions		
				Primary	Primary Area	Reached target area	Over Enemy Territory	Not over Enemy Territory		Missing	Damaged by Flak	Damaged by Enemy aircraft	Not due to Enemy action	Att-acked	Att-acked
MINELAYING Frisian Islands	1	Well.Ic	6 *	4	2										180
		Well.II	1 *	1											
		Well.IV	12 *	12					2 n.						
	3	Well.Ic	1 *	1											
		Well.III	14	14											
		Stirling	15	14	1				1 n.c.						
5	Lancaster	6	6												
Lorient	5	Hampden	10 *				3	6	1	1 n.c.					
			69	52	3	3	6	1	1 n.c.	2 n.					

* Not fitted T.R. 1335

Total Abortive 13

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 19/20TH JUNE, 1942.

Metereological Advice submitted to the Command

1. 0920 hours:- Germany:- Layer clouds with breaks along North Sea Coast. Breaks increasing inland. Little wind and accordingly much smoke haze in the Ruhr.
- North France:- Fine apart from some broken layer cloud in places on the coast.
- Home Bases:- Fine, local mist induced by smoke.
- 1225 hours:- No change.
- 1715 hours:- North West Germany:- Lot of layer cloud at present but it may clear. Osnabruck more likely to clear than Emden.
- North West France:- Cloud; possibly some low cloud or all may be medium.

Executive Orders

2. Emden was selected as the night's primary bombing target. It was, however, very difficult to determine whether the clear sky would extend as far west as Emden by the time that the attack was to be delivered. Osnabruck, important because of its marshalling yard and rolling mills, was given as an alternative target so that pilots who found the primary target overcast could continue on their course and attack the alternative, which there was good reason to suppose would be clear of cloud. This was not intended to be a blind bombing operation.

Sorties

3. 215 sorties were despatched on this night 194 of them to Essen. For details of the operations see attached table.
4. 25 (11.7%) sorties were abortive. The reasons were as follows:-

Technical Defects	15
Attacks by enemy fighter	3
Flak	1
Sickness	2
Late start	2
Inability to find target	2 (1 on Emden, 1 intruder)

Moon

5. The moon was not above the horizon during these operations.

Weather at Home Bases

6. There were variable amounts of cloud and moderate visibility over Home Bases. Mist and fog affected 91 Group by dawn.

EMDEN

Plan of Attack

7. The aircraft attacking Emden were divided into a flare force of 15
...../specially

specially selected Wellington III aircraft and a main force consisting of all the remaining aircraft. Zero hour for the attack was 0130 hours.

8. The flare force carried 12 bundles of flares which were to be released at 8 second intervals giving a stick about 4 miles long. The flares were to be released blindly on T.R. 1335 fix, two aircraft dropping their flares at zero hour and further pairs at 3 minutes intervals to zero + 15 minutes, followed by single aircraft at zero + 18 mins, zero + 21 mins, and zero + 24 mins.

9. Aircraft of the main force were to spread their attack evenly over the period from 0130 hours to 0200 hours. They were to carry the maximum incendiary load made up with large H.E. bombs, and were to identify the target visually confirming their position by T.R. 1335 fix.

10. Crews were instructed that if there was 10/10 cloud over Emden they were to go on to Osnabruck and bomb that town as an alternative target.

Weather

11. There was 7-10/10 cloud, base 3,000 ft., tops 4,000 - 5,000 ft. over Emden and moderate visibility. On route there was little or no cloud as far as 3^o - 4^o E but after that it increased rapidly to 7-10/10.

Results

12. 131 (67%) of the 194 sorties despatched claim to have attacked Emden, dropping 92 tons of H.E. and 158 tons of incendiaries. Owing to the cloud few aircraft were able to identify the target visually. Those fitted with T.R. 1335 bombed mainly on fixes, the others on E.T.A., fires and flak.

13. The illumination of the target by flares did not occur as planned. Five of the fifteen aircraft carrying flares went on to Osnabruck, two returned early and one is missing. Apart from one aircraft briefed for 0130 hours which dropped its flares 7 minutes early, the aircraft which did drop their flares did so close to their briefed times, and a considerable number of aircraft not fitted with T.R. 1335 bombed on their position.

14. None of the 3 photographs taken with bombing and showing ground detail have been plotted. There was no daylight reconnaissance on the next day and there was a further raid against this target on the following night, which was, from the night photographic evidence, successful. There is thus no photographic evidence of the success of this attack.

Other Targets Attacked

15. 29 aircraft which found 10/10 cloud over Emden went on to OSNABRUCK and dropped 30 tons of H.E. and 37 tons of incendiaries on this target. Here there was little cloud and good visibility and most of these aircraft were able to recognise the target visually.

16. 12 of these aircraft took photographs with bombing. 4 of these show the aiming point and 7 more have been plotted within five miles of the centre of the town which suggests that most of this small force were successful in finding their target. This is confirmed by subsequent daylight reconnaissance. An area of approximately 9 acres around the Grosse Strasse was devastated by fires which were still burning the next day. There was not much industrial damage but about 10 small buildings in an iron and steel works, a cotton-weaving factory and a soap factory were damaged. In addition about 25 to 30 houses scattered throughout the town have been destroyed.

17. Apart from these aircraft 1 Halifax bombed an unidentified built-up area in the neighbourhood of Emden.

Casualties

9 (4.1%) of our aircraft are missing from this operation and 11 suffer
 ,...../G.M.S.

damage to varying extents. There were 6 cases of serious damage (Cats. AC and E) 2 due to flak and 3 to fighter and 1 not due to enemy action. Flak caused minor damage in 3 cases; a fighter caused minor damage in one case.

18. At Emden it is reported that moderately heavy flak was predicted accurately through the cloud and there was slight searchlight activity.

19. At Osnabruck moderate heavy and slight flak was experienced but it was mainly inaccurate: searchlight activity was, however, strong in cones with up to 40 in one cone. There was also considerable fighter activity over the Zuyder Zee and at Osnabruck.

20. In examining the missing and damage figures/ two points are worthy of note

- (a) 3 of the 4 missing from 1 Group were believed to have flown at heights greater than the average for the group; at this time of the year, after low conditions would presumably make our bombers better targets for fighters.
- (b) The bulk of the damage caused by both flak and fighter was sustained by Wellington III's of 3 Group who also reported 5 out of the 6 attacks made by enemy fighters.

21. The reports of aircraft seen shot down are largely confined to 3 Group and from an analysis of these observations it would appear that the bulk of our losses were due to fighter attack.

Summary

22. The 10/10 cloud cover over Emden prevented any observations of the success of this attack. Those aircraft which proceeded on to Osnabruck however made a very successful attack on this target.

23. Most of our losses were due to fighters which were presumably favoured as against flak by the weather conditions prevailing.

INTRUDERS

24. 6 Blenheims set out on intruder operations 2 going to each of Leeuwarden, Vechta and Ardorf aerodromes. 1 attacking Vechta was unable to find the primary target and brought its bombs back, and 1 attacking Ardorf bombed a railway station north of Emden having failed to pinpoint the primary target. The remaining 4 were successful, dropping their bombs in all cases across the airfields. Bursts were seen but no other results were observed.

Leaflets

25. The 5 freshmen/ ^{despatched} on this task were successful

19/20th June, 1942.

Target	Group	Type	No. of sorties	Aircraft claiming to attack		Attacked Oenabruck	Aircraft falling to both Primary				Casualties				Interceptions		
				Primary	Primary Area		Reached Target Area		Over Enemy Territory		Shooting	Down by Flak	Down by R.A.	Not due to R.A.	Attacked	Not attacked	
							Sunk other target	Abortive	Sunk other target	Abortive							
WALL	1	Well.Ic	5*		5												
		Well.II	11*		11					1	1						
		Well.III	14		13					1							
		Well.IV	27*		24						3						183
	3	Well.Ic	1*		1		1	1									
		Well.III	50		28	10	5	1	4	2	1 AC 2 AC 2 B.				5	3	
		Stirling	25		15	5			3	2							1
	4	Halifax	37		25	7	1		1	2	1 B. 1 B. 1 E.						
	5	Bomben	11*		7	3				1	1 AC 1 AC						
		Lincoln	9		3	4				1	1						
	TOTAL		194		131	29	6	4	14	9	5	4	1	6	5		
WALL	2	Blenheim	2*		2												
WALL	2	Blenheim	2*		1			1									
WALL	2	Blenheim	2*		1					1 B.							
WALL	3	Stirling	2*		2												
WALL	4	Halifax	3*		3												
			215	4	136	29	2	7	4	14	9	2 AC 4 B.	4	1 E	6	5	

* Not fitted T.M. 1335

+ Freshmen

† Both Flak and fighter damage

Total Abortive 25

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 20/21st JUNE, 1942

Meteorological Advice Submitted to the Command

- 1. 0915 hours. Germany:- Fine with local industrial haze in North except that some layer cloud is likely to persist in Heligoland Bight area and adjacent coastal strip including Hamburg. Generally small amounts of cloud in Central and South Germany.
- France:- Generally fine with moderate visibility but small amounts of strato-cumulus clouds probable near coast of N.W. France.
- Home Bases:- Fine with mist patches in valleys.
- 1245 hours. Emden must now be included in area where layer cloud may persist. Otherwise no change.
- 1700 hours. Emden:- Small amounts of cloud.
- Home Bases:- Local visibility troubles but not affecting many stations in any Group except 91 Group where fog will be fairly general by dawn.

Executive Orders

2. Weather conditions over Emden were expected to be rather more favourable than on the previous night and it was decided to follow up the attack which had already been made with another. A number of sorties were sent out by 2 Group to attack enemy aerodromes. Their targets were selected with the object of hampering the enemy's night fighter operations against our bombers attacking Emden.

Sorties

- 3. 193 sorties were despatched on this night, 185 of them to attack Emden. For details of the operations see attached table.
- 4. 23 (11.9%) of the sorties were abortive. 19 of these were due to technical troubles, 2 to flak and 1 to an enemy fighter, and 1 aircraft on intruder operations was unable to locate its target.

Moon

5. The beginning of the attack on Emden coincided with the setting of the moon which was 41% of full. The intruder attacks were made shortly before moonset.

Weather at Home Bases

6. There was cloud in the North but none in the South of the Home Base area. Visibility deteriorated locally but most bases remained fit.

EMDEN

Plan of Attack

7. Zero hour was at 0115. 15 aircraft were detailed to drop flares blindly on T.R. 1335 fixes over the target, 2 at zero hour followed at three minutes intervals by 5 other pairs and then 3 single aircraft. Continuous illumination from 0115 to 0142 was thus aimed at. The remainder, carrying the maximum conical incendiary load made up with the heavier types of H.E., were to spread their attack evenly over the period 0117 hours to 0145 hours, identifying

.../ the target

the target visually but confirming their position by T.R. 1335 fix. All aircraft were to approach the target along the B lattice line from West to East.

Weather

8. Over the target there were well broken bands of strato-cumulus, average 3-5/10 but a number of aircraft report no cloud. There was ground haze, visibility being 1-5 miles. En route large amounts of strato-cumulus were encountered over the North Sea.

Results

9. 159 (86%) of the 185 aircraft despatched claim to have bombed the target dropping 131 tons of H.E. and 195 tons of incendiaries.

10. The timing of the flares was close to that planned except that there was a gap from 0136 hours to 0140 hours and the illumination continued until 0145 hours. Reports by aircraft which took photographs of the target area with bombing indicate that the earlier flares were well placed, lighting up the shipyards, but that the later ones were mainly dropped a few miles to the South over the Coast.

11. In all 47 aircraft obtained photographs with bombing which showed ground detail. 4 of these show the docks of Emden and 10 more have been plotted within five miles. Most of the remaining photographs which have been plotted lie 10-15 miles to the West and South West of the Target.

12. The evidence from the night photographs suggest that only a moderate proportion of the attacking force were successful in identifying the target. This is borne out by daylight reconnaissance which shows that damage was less extensive than that done in the highly successful raid of the 6/7th June. Near the Binnen Hofen 2 small sheds and a workman's dwelling hut have been destroyed and 7 small buildings damaged. In the town a large industrial building and 2 smaller ones have been gutted, and a building, possibly a warehouse, partially burnt out. Near the Appelmarkt an area of commercial residential property of more than an acre has been devastated and about 20-25 buildings in other parts of the town have been destroyed.

13. All except 13 of the attacking aircraft bombed between 0115 hours and 0130 hours, the prescribed period for the attack. 1 aircraft was early, bombing 0108 hours, and 12 were late, 11 of them 10 minutes or less. One straggler however bombed at 0212 hours.

Casualties

14. 6 (3.2%) of our aircraft are missing from this operation and 14 (7.5%) suffered damage to varying extents, there being 8 cases of serious damage (C, AC, B, E) 5 of which were not due to enemy action. Of those aircraft which were damaged 6 (3.2%) were hit by flak and 2 by enemy fighters. In all 7 attacks were made on our aircraft and there were 11 other interceptions. There was apparently considerable night fighter activity by the enemy on this night and of our losses can probably be attributed to enemy fighters.

15. On this night, again, the heavy aircraft had a larger proportion damaged and show a greater percentage missing than the medium aircraft. The percentage (3.5%) missing for the heavy aircraft was, however, normal for this part of Germany in similar conditions of weather and visibility, whilst the percentage of medium aircraft missing was subnormal at 2.9%.

Summary

16. This raid was only moderately successful, probably because ground haze made target identification difficult. Although useful damage was done the total amount was not large.

17. The missing rate was about average, in spite of a large night fighter effort by the enemy.

.... / Intruders.

3.

Intruders

18. 5 Blenheims set out on intruder operations, 3 to attack Leeuwarden aerodrome, 1 each to Twente and Ardorf aerodromes. The aircraft attacking Twente and Ardorf were both successful in accomplishing this mission, their bombs falling on the airfields. One of the aircraft despatched to Leeuwarden failed to find the primary, and the remaining two were prevented by light flak, combined in one case with an approach by an enemy fighter, from dropping their bombs on the target and had to jettison.

Leaflets

19. 2 of the 3 aircraft despatched on leaflet dropping operations carried out their allotted task, but the remaining one had to return early owing to a technical defect.

EC/S.26342/1/ORS.
28th July, 1942.

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary				Result not known	Casualties				Interceptions		
				Primary	Primary Area	Reached Target Area		Over Enemy Territory			Not over Enemy Territory	Missing	Killed by Flak	Killed by E.A.	Not due to E.A.	Attacked	Not attacked
						Bombed other Target	Abortive	Bombed other Target	Abortive								
ENEMY	1	Bell II	12 *		11				1			1 E 1 M.	1 L			4	
		Bell III	15		15			1	1						1	2	
		Bell IV	13 *		12			1									
	3	Bell III	50		44			1	3	2	1 n.	2 G		3	3		
		Stirling	21		13		1		5	2			1 B 2 AC				
	4	Halifax	27		25				1	1	1 n.			1			
	5	Hamden	12 *		11					1			1 AC		1		
		Lancaster	24		18				5	1	2 n.		1 E		1		
	TOTAL		185		159		1	2	16	1	6	6	2	6	7	9	
	ENEMY	2	Blenheim	3 *				2		1		2 n.				2	
ENEMY	2	Blenheim	1 *	1													
ENEMY	2	Blenheim	1 *	1													
ENEMY	4	Halifax	1 *	1													
ENEMY	5	Hamden	1 *	1					1								
			193	2	161		3	3	17	1	6	1 E 7 n.	2 G 1 AC	1 E 1 B 3 AC 1 "	7	11	

* Not fitted with T.R. 1335

+ Freshmen

Total Abortive 23

MOST SECRET.NIGHT RAID REPORT NO. 91COPY NO. 116BOMBER COMMAND REPORT ON NIGHT OPERATIONS 21/22nd JUNE, 1942Meteorological Advice submitted to the Command

1. 0915 hours. Germany:- H.W. Coastal area, good chance of no cloud, certainly very well broken. Inland, fine with haze. Bight area, broken strato-cumulus cloud.
- France:- West coast, cloudless.
- Home Bases:- Good apart from local visibility troubles.
- 1215 hours. Germany:- Strong probability of little or no low cloud in Eiden area and over Frisian Islands.
- France:- Cloudless in Lorient area with haze.
- Home Bases:- No change.
- 1630 hours. All areas:- No change, but fog patches in Channel may make landfalls awkward.

Executive Orders

2. After the heavy scale effort of the two previous nights only a small number of sufficiently rested crews were available and a limited mining operation was decided upon.

Sorties

3. 58 sorties were despatched on this night. For details of the operations see the attached table.
4. 7 (12.1%) sorties were abortive. In one case this was due to inability to locate the target area and in the remainder to technical defects.

Moon

5. The moon, which was 52% of full, set during the course of these operations.

Weather

6. The weather, generally, was fine and visibility was good in all mining areas, though a certain amount of sea haze, thickening at times to sea fog, was reported in the Heligoland Bight. Visibility at Bases was moderate apart from local mist in South Yorkshire and Lincolnshire.

Mine-laying

7. 48 (86%) of the 56 sorties engaged in mine-laying claimed to have laid 126 mines in their allotted areas off the Frisian Islands and the French Atlantic Coast. The majority of these aircraft were able to verify their positions by means of pinpoints before dropping their mines, but a few relied solely upon a T.R. fix.
8. Of the 17 successful sorties which carried an auxiliary bomb load 2 attacked aerodromes and 2 attacked fleetships, but no results were observed. The remainder brought their bombs back as they were unable to find suitable targets.
9. 1 (1.8%) of our aircraft is missing from this operation, but none sustained any damage. There are two observations suggesting that the missing aircraft was shot down in the Lorient area by light flak which was moderate to intense with a few searchlights co-operating.

Leaflets

10. One aircraft dropped leaflets in the Le Treport - Albert - Furnes areas and one in the Rennes area.

BC/S.26342/1/OPS.
27th July, 1942.

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary					Casualties			Interceptions		
				Primary	Primary Area	Reached Target Area		Over Enemy Territory		Not over Enemy Territory	Missing	Dan. by Flak	Cas. by E.A.	Not due to E.A.	Attacked	Not attacked
						Bombed other Target	Abortive	Bombed other Target	Abortive							
BOMBAY-IPC	1	Well. IV	12 *		10					1						
	3	Well. Ia	1 *		1											
		Well. III	21		20					1						
	5	Hampton	9 *		5		1		1	2						
		Lancaster	13		12					1						
	TOTAL		56		48		1		1	5			1			
SAPLENS	3	Seirling	1+		1											
	5	Hampton	1+*		1											
			58		50		1		1	5			1			

* Not fitted with T.R. 1335

+ Freshmen

Total abortive 7

MOST SECRET

NIGHT REPORT	AIR MINISTRY WAR ROOM	
	- 5 AUG 1942	
	TIME	HOURS
	BOPT NO. /6	

5 AUG

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - JUNE 22/23RD, 1942.

189

Meteorological Advice Submitted to the Command

1. 0915 hours. N. Germany:- Fine, industrial haze, otherwise moderate to good visibility.
- S. Germany:- Local thunderstorms.
- France:- Fine, moderate to good visibility.
- Home Bases:- Fine apart from chance of thunderstorms in Yorkshire.
- 1245 hours. Germany:- Along the N. Coast some medium cloud is now expected, but it is likely to be well broken. Elsewhere, as before.
- 1700 hours. Emden:- Now some risk of 10/10 cloud, but only small amounts, less than 5/10, most likely. If it is desired to make certain of some target a selection should be made further inland. Some haze, but exact extent uncertain.
- Home Bases:- Only local visibility troubles due to smoke except in 4 Group where frontal conditions will give cloud base 1500 ft. locally and visibility 1500 yds. Local thunderstorms likely in Midlands and N.E. England.

Executive Orders.

2. Weather conditions being favourable it was decided to use all available aircraft for an attack on that part of Emden which had escaped heavy damage during previous attacks.

Sorties

3. 239 Sorties were despatched, of which 227 were ordered to attack Emden. For details see the attached Table.

4. 25(10.9%) sorties were abortive. The reasons were as follows:-

Technical Failure	19	Caught in Searchlights	1
Illness	3	Navigational Failure	1
Attacked by fighter	1	Iceing	1

Moon

5. The moon was 63 % of full. The attack on Emden was planned to finish a few minutes before moonset.

Weather at Bases

6. There were small amounts of cloud at bases, but visibility remained moderate apart from local patches of mist and fog.

...../Plan of Attack

BDENPlan of Attack

7. 15 Wellingtons of 3 Group were detailed as a flare carrying force. They were ordered to drop their flares on a prescribed T.R. fix at stated times with the object of illuminating the target area from zero hour (0115) to zero + 25. The main force, carrying maximum economical load of incendiaries made up with the heavier types of H.E., were to attack between zero and zero + 30, the best crews leading. The route to the target crossed the enemy coast at Schiermonnikoog and the return was via Alkmaar.

Weather Experienced

8. Cloud, which was 10/10 in places over the North Sea, broke east of 5° E and the target area was completely cloudless. Visibility was good and the small amount of ground haze was not sufficient to hamper visual identification of the target.

Results

9. 196 (86%) aircraft claimed to have attacked the primary target area and 176 of these bombed within the prescribed half hour. 130 tons of H.E. and 265 tons of incendiaries were dropped by these aircraft. 3 flare carrying sorties were abortive and 1 was 5 minutes late in dropping its flares. The remainder adhered fairly closely to their allotted times and it appears that illumination was provided from Zero to Zero + 20 with only one break of about 2 minutes. Many crews reported that the flares were very helpful and that several sticks illuminated the target area. Others were dropped to the West and S. West of the town and made it easy to recognise the coast line of Dollart Bay. Small scattered fires were reported to have been started 0120 and later some of these were seen to merge. Crews arriving after 0140 reported large fires raging and the consensus of opinion seems to be that most of these were in the S.W. of the town near the dock area.

10. 90 aircraft took photographs with bombing showing ground detail. 50 of these have been plotted within five miles of the aiming point and 11 of these show the target. It appears from the photographs that a high proportion of aircraft reached the vicinity of Bden, but that the density of bombing on the actual target was moderate. A number of photographs within 5 miles show open country, mostly to the West of the town and 15 are close to the Larrelt and Wybelsum decoys. The Larrelt decoy was certainly active and probably attracted a part of the attack. On the other hand the Uphusen decoy to the N.E. of Bden, which was also active, appears to have received little attention.

11. It appears, however, from subsequent daylight reconnaissance that considerable damage was inflicted on both the town and docks. The most important incident is the complete destruction by fire of a group of industrial buildings, probably the main portion of Cassens shipyard. At the Nordseewerke and the Government yard a stores building and 4 small sheds have been destroyed and West of Hafenbecken No. 3 a large building and 6 huts have also been destroyed or severely damaged. At Bden-Pewsum railway station the main office building, 4 large goods sheds and a group of small buildings have been burnt out and at the Outer Harbour Station the main buildings and a warehouse have been severely damaged. About 7 other small industrial buildings and the main building of the Hamburg-Amerika Line have been destroyed or severely damaged. About 35-40 residential, commercial or public buildings in the town have also been destroyed, mainly by fire, as well as 40-50 workman's dwellings on Kaiser Wilhelms Polder.

Other Targets Attacked

12. One aircraft which made 3 runs over the target but on each occasion was coned by searchlights eventually dropped its 4000 lb. bomb on Borkum town causing a large fire.

...../Casualties

Casualties

13. 5 (2.2%) of our aircraft are missing from this operation and 11 (4.8%) suffered damage to varying extents - there were 4 cases of serious damage (Cats. AC, E.) 2 of which were not due to enemy action. Of those aircraft which were damaged 6 were hit by flak and 2 by enemy fighters.

14. The average missing rate for this area under similar conditions of weather and visibility is 5.5%. The missing rates of the heavies at 2.6% and of the mediums at 1.9% are therefore considerably below the average and the damage received was also light.

15. There appears to have been fair activity by enemy fighters, 4 attacks being reported and 11 other interceptions - there was also considerable flak and searchlight activity. The low missing rate may probably be due to the high degree of concentration achieved in the target area.

Summary

16. 227 aircraft were ordered to attack Emden using the "Shaker" flare technique. In the good weather which prevailed the plan of attack was adhered to fairly closely and 196 aircraft claimed to have attacked the target. While it appears, from the evidence of night photographs, that a number of aircraft bombed to the West and S.W. of the target area where decoys were active considerable damage was inflicted on the docks and town of Emden, notably at Cassens shipyard and Emden-Pewsum Station. The casualties were less than half the average for this target under the prevailing weather conditions.

Intruders

17. 7 Blenheims of 2 Group successfully located and bombed their primary targets, Ardorf and Leeuwarden aerodromes. In most cases the bombs were seen to burst inside the aerodrome perimeter. One aircraft, unable to find the primary, attacked an unidentified aerodrome.

Leaflets

18. 2 Stirlings dropped leaflets over the Rouen, Loos, Cartrai, and St. Valery areas.

BC/S.26342/1/ORS.
27th July, 1942.

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary				Result not known	Casualties				Interceptions		
				Aircraft claiming to attack		Reached Target Area		Over Enemy Territory			Not over Enemy Territory	Missing	Damaged by Flak	Dam. by E.A.	Not due to E.A.	Attacked	Not Attacked
				Primary	Primary Area	Bombed other Target	Abortive	Bombed other Target	Abortive								
ROSEN	1	Well.Ic	15 *		11			1	2		1	1 m.	1 m.		2		
		Well.II	11 *		11				2				1 AC		1		
		Well.III	15		13				2					1	4		
		Well.IV	25 *		23				1		1				1		
	3	Stirling	38		31				6		1	1 m.		1			
		Well.III	76		65	1		1	7	1	1	2 AC 3 m.	1 E		3		
	4	Halifax	26		25		1					1 m.		1			
	5	Lancaster	11		10												
Hampden		8 *		7					1								
TOTAL			227		196	1	1	2	21	1	5	2 AC 4 m.	2 m. 1 E 1 AC 1 m.				
DIVERSERS	2	Blenheim	10 *		7		1	1		1					1		
LEAFLETS	3	Stirling	2+		2												
TOTAL			239	7	198	2	2	2	22	1	5	2 AC 4 m.	2 m. 1 E 1 AC 1 m.	4	11		

* Not fitted with I.R. 1335 + Freshmen Total abortive 26

MOST SECRET

1.446E

NIGHT RAID REPORT NO. 93

P.K.

COPY NO. 16

BOMBER COMMAND REPORT ON NIGHT OPERATIONS: 27/28th JUNE, 1942 UG/942

Meteorological Advice Submitted to the Command

1. 0915 hours. Estimated midnight position of coast of Germany: - 54°N, 5°E - Ostend - Le Havre.
- Germany:- Some patches of medium cloud but probably only small amounts and possible isolated thunderstorms overland in North. Over North Sea just north of German Coast, patches of fog.
- Home Bases:- Generally fit but thunderstorms likely in North and possible further South.
- 1230 hours. No change from 0915 hours except that fog not expected along Frisian Islands but likely further out to sea. Any outbreak of thunderstorms will be of scattered type and not widespread.
- 1645 hours. Frisian Islands:- Fine apart from a little medium cloud.
- Lorient:- Fine.
- St. Nazaire:- Fine, but patches of cumulus cloud possible.
- Roquefort:- Fine.
- Home Bases:- Midland spoke trouble in 91 Group by dawn. Slight risk of low stratus in North Norfolk. Local thunderstorms possible but unlikely in East and South East England during evening. Otherwise no difficulties.

Executive Orders

2. It was necessary to rest the majority of the crews and service the aircraft and the night's activities were limited to an operation aimed at laying 100 sea-mines in various minefields. Freshmen crews in need of bombing experience were sent to attack St. Nazaire, their attack being timed to cover mining in the vicinity.

Sorties

3. 67 sorties were despatched. For details of operations see attached table.
4. 20 (30%) of the sorties were abortive. 6 of them were due to technical defects, 11 (5 minelaying, 6 St. Nazaire) to inability to locate the target, 2 to navigational errors, and 1 to sickness of a member of the crew.

Moon

5. The moon was above the horizon during these operations and 73% of full.

Weather

6. At Home Bases there were variable amounts of cloud, mainly less than 5/10, with base about 3,000 feet. Visibility was moderate.
7. Small amounts of layer cloud and good visibility were experienced in the target area and en route by aircraft laying mines near the Frisian Islands.

.... / 8. Over St. Nazaire

8. Over St. Nazaire and the neighbouring minelaying areas there were small amounts of layer cloud and good visibility except for ground haze inland. Larger patches of layer cloud were encountered over the Channel en route.

Minelaying

Results

9. 39 (75%) of the 52 aircraft detailed to lay mines did so in the positions allotted to them and another in an alternative, 88 mines being laid in all. Most of them were able to obtain visual pinpoint but a small number fixed their position by T.R. 1335.

10. Auxiliary bomb loads were carried by some of these aircraft and 4 carried out attacks with them. The targets attacked were Dinant aerodrome by 2 aircraft, a 4,000 ton stationary cargo ship and a concentration of light flak and searchlights on the northern French coast.

Casualties

11. 2 (3.9%) of our aircraft are missing from this operation and 4 received damage to varying extents. There were two cases of serious damage, one (Cat. AC) due to enemy action and the other (Cat. E) not due to enemy action.

12. There were no attacks reported by enemy fighters but accurate and moderately intense flak was experienced. Searchlights operating independent of flak were in evidence at Terschelling. It is not possible to determine cause of the loss of two missing aircraft which were Wellington II's of 1 Gr.

St. Nazaire

13. The ground haze over this target prevented all except 3 of the 14 fresh which took part in this operation from seeing enough ground detail to enable them to drop their bombs. Of the 3 which did attack, 2 claim to have seen their bombs bursting in the docks. The other stated that he was able to recognise the coast line and thought that his bombs had fallen close to or in the dock area.

14. One of the aircraft taking part in this operation crashed in this country on its return and had to be written off, and another was seriously damaged on landing.

Leaflets

15. Leaflets were successfully dropped over Angers by a single aircraft detailed for this task.

23/24th June, 1942.

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary		Result not known	Casualties				Interceptions					
				Primary	Primary Area	Bombd other Target	Abortive		Bombd other Target	Abortive	Missing	Dan. by Flak	Dan. by E.A.	Not due to E.A.	Att-acked	Not attacked		
MINELAYING Frisian Islands	1	Well. Ic	11 *		7		2											
		Well. II	4 *		4													
		Well. IV	4 *		4													
St. Nazaire	3	Well. III	20		17		2											
Lorient	5	Hampden	9 *		3		1	1		1			1 E					
Gironde Estuary	5	Lancaster	4		4							1 n.						
		TOTAL	52		39		1	5		1		2	3		1			
ST. NAZAIRE	1	Well. Ic	2 *				1		1									
		Well. II	3 *	2	1													
	3	Well. III	5 *				3			1	1			1 E				
		Stirling	4 *				2			2				1 AC				
	TOTAL	14 *	2	1		6		1	3	1			2					
LEAFLETS	5	Lancaster	1 *		1													
			67	2	41		1	11		2		7	1	2	1 AC		2 E	
												2 n.			1 AC			

* Not fitted T.N. 1335

+ Freshmen

Total abortive 20

— Cause not known possibly enemy action

193

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, 24/25th JUNE, 1942

Meteorological Advice Submitted to the Command

1. 0915 hours. Estimated midnight position of cold front is (1) $63^{\circ}N. 8^{\circ}E$ - Hamburg - Ruhr - N. France (2) $63^{\circ}N 8^{\circ}E$ - N. Yorkshire - N.W. Scotland.

Germany:- Much strato-cumulus cloud moderate visibility in north behind front. Thunderstorms near the front and south of it, west of $10^{\circ}E$. East of $10^{\circ}E$. fine.

France:- Thunderstorms in east and north-east; well broken cloud in west and north-west.

Home Bases:- Variable amounts of cloud; moderate visibility.
- 1230 hours. Meteorological reconnaissance shows little cloud over North Sea, indicating less cloud than previously forecast along northern coast of Germany. Otherwise no change.
- 1650 hours. St. Nazaire:- Good breaks in cloud, possibly almost clear. Well broken cloud en route.

Home Bases:- No troubles expected.

Executive Orders

2. Conditions over more important targets were not good for bombing and partly for this reason, and partly to give units an opportunity to build up their strength for a major operation, the night's effort was confined to an attack on St. Nazaire by fresher crews. This target was in the area with the best weather conditions and at a range which suited the experience of the crews.

Sorties

3. 21 sorties were despatched to St. Nazaire. For details of operations see attached table.
4. 4 sorties were abortive, 2 owing to technical defects and 2 owing to haze over the target.

Moon

5. The moon was above the horizon and 82% of full during these operations.

Weather

6. There were small amounts of cloud and some ground haze over the target. At Home Bases and en route there were variable amounts of cloud with the base not below 2,000 ft.

Results

7. 11 of the 21 aircraft despatched to St. Nazaire claim to have identified their target and dropped their bombs across the docks. 5 more state that their bombs fell in the neighbourhood of the docks, but they were not certain that they actually fell on the target.
8. Photographs showing ground detail were taken with bombing by 7 aircraft. Two of these show the docks, but no bursts are visible. The remaining 5, 4 of which have been plotted within 5 miles of St. Nazaire, all show open country, and in one of them a stick of bombs can be seen bursting in fields. It

.../ accordingly

accordingly appears probable that only a limited proportion of the bombs dropped actually fell in the docks.

Casualties

9. 1 aircraft received minor flak damage. Flak, both light and heavy and of varying degrees of accuracy was encountered both over the target and from various other places in Brittany. There were two encounters with enemy fighters but in neither of these was our aircraft attacked.

10. A Stirling crashed on its return to this country, the crew being killed.

EC/S.26342/1/ORS.
28th July, 1942.

24/25th June, 1942.

Target	Group	Type	No. of sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary				Result not known	Casualties				Interceptions		
				Primary	Primary area	Reached Target area	Bombed other Target	Over Enemy Territory	Not Over Enemy Territory		Missing	Down by Flak	Down by E.A.	Not due to E.A.	Attacked	Not Attacked	
ST. CLÉAIRE	1	Hell IV	6 *	4	2												2
	3	Stirling	6	4	1				1	1	1		1 m.		1 E *		
	5	Hampden Lancaster	3 * 4	1 2	2	2											
			24	11	5		2		1	1			1 m.		1 E		2

* Not fitted T.R. 1335

Total abortive 4

7 Cause not known, possibly enemy action

~~TOP SECRET~~

NIGHT RAID REPORT NO. 95

COPY NO. 16

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, JUNE 25/26TH, 1942.

Meteorological Advice Submitted to the Command

1. 0915 hours. Estimated midnight position of fronts (1) S.E. England - Brussels - Cologne - 55°N. 14°E. (2) N.W. Alps - Nurnberg - Danzig.
Germany:- In North, generally cloudy with some breaks; between the fronts variable amounts of cloud; near front (2) thunderstorms.
France:- Well broken cloud in North West; variable amounts in North East, scattered thunderstorms in South East.
Home Bases: Variable amounts of cloud; moderate visibility.
- 1300 hours. Germany:- Strato-cumulus over North Sea coast, with breaks inland but not likely to be less than 5/10.
Home Bases: Strato-cumulus base 1,500 - 2,000 feet.
- 1700 hours. Germany:- There is an even chance of less than 5/10 cloud in North West Germany.
Home Bases: Strato-cumulus not low enough to be troublesome; visibility adequate.
- 2100 hours. Bremen:- Chance of less than 5/10 cloud is 50/50. The strong wind in the target area will favour a comparatively rapid passage of strato-cumulus across the target.

Executive Orders

2. Base conditions were excellent and with an even chance of finding less than 5/10 cloud over the target and a good moon to help it was decided to make an attack on an exceptionally large scale on Bremen. This target was chosen for an attack on this scale because of its importance as one of the submarine building centres which was within comfortable range in the period of darkness available. Aircraft were sent on special reconnaissance of the target area and the area up wind of it. The reports received led to the conclusion that although the target was not clear of cloud at the time of the reconnaissance the chances of a good clearance with only small amounts of cloud were high, provided that there was no shift in the wind.

3. Coastal Command co-operated by sending a force of Wellington and Hudson aircraft to Bremen and a few Blenheim aircraft of Army Co-operation Command also joined in the attack.

4. 2 Group, assisted by Army Co-operation Command carried out intruder operations on the largest possible scale, beginning at dusk, with the object of keeping the enemy's night fighters on the ground as far as possible. Intruder operations forming part of the general plan were also carried out by Fighter and Coastal Commands.

Sorties

5. 963 sorties were despatched on this night, 904 of them to Bremen. For details of the operations see the attached table.

6. 157 (16.3%) were abortive. The causes were as follows:-

	<u>Bremen</u>	<u>Intruders</u>
Technical defects	76	1
Unable to identify target	35	12
Enemy fighter attack	5	1
Flak	2	1
Sickness	3	-
Late take-off	2	-
Cause not stated	19	-

Moon

7. The moon was above the horizon and 91% of full.

Weather at Home Bases

8. There was little or no cloud and moderate visibility in the Home Base area on this night.

BREMENPlan of Attack

9. The attack against Bremen which was to be carried out with the co-operation of Coastal Command was to last 65 minutes commencing at 0120 hours. The aircraft were to be divided into three waves - an advance force of Gee aircraft, a main force and a rear force of heavy aircraft. The route laid down was Base - Egnond - Target - Osterholz Scharnbeck - 54° 15' N. 05° 00' E - Base. The minimum bombing height was 8,000 feet and aircraft were to gain speed and lose height immediately after bombing. All aircraft were to turn for home at 0230 hours whether they had dropped their bombs or not. The maximum number of night photographs were to be taken and two experienced crews of each of 3, 4 and 5 Groups in the rear force were detailed to make a visual report on the results of the attack and also to take night photographs. Aircraft of 5 Group were to carry 50% incendiary bombs and 50% heavy G.P. and H.C. bombs. Hudson aircraft of Coastal Command were to carry the maximum number of 100 lb. A.S. bombs, and Wellington aircraft of Coastal Command were to carry maximum loads of 500 lb. G.P. bombs. All the remaining aircraft were to carry the maximum load of incendiaries, made up as necessary with the heavier types of G.P. and H.C. bombs. As large a proportion as possible of the incendiary bombs were to be of the 4lb. type.

10. The first wave was to consist of 50 Stirlings and 50 Halifaxes who were to attack the centre of the town from zero hour to zero + 10 minutes, and they were to be followed by all the GEE Wellingtons of 1 and 3 Groups between zero + 10 mins. and zero + 20 mins.

11. The Main force were instructed to bomb between zero + 20 mins. and zero + 55 mins. except for the aircraft of Coastal Command which were to attack the Dochimag submarine building yards between zero + 30 mins. and zero + 50 mins. The remainder of the main force was to attack as follows:-

All remaining aircraft of 1 Group	The South end of the docks
All remaining Wellingtons of 3 Group	The town centre
All aircraft of 5 Group	Focke-Wulf aircraft works
All aircraft of 91 Group	The S.E. end of the town
All aircraft of 92 Group	The south end of the docks

12. The rear force consisted of all the Stirlings and the Halifaxes not included in the first wave. The Stirlings were to attack the town centre. The Halifaxes were to divide their attack evenly between the south end of the docks and the S.E. end of the town.

13. Aircraft were instructed to proceed to Wilhelmshaven, Emden, Bremerhaven or Vegesack and bomb one of these towns if the primary target could not be identified.

Weather

14. Owing to a change of wind the weather over Bremen did not clear and throughout the raid the target was covered by thin layer cloud, in which there were only occasional small breaks. Similar conditions were experienced en route.

Results

15. 661 (73%) of the 904 aircraft despatched claim to have attacked Bremen, dropping 450 tons of H.E. and 697 tons of incendiaries. In addition 71 of the 102 aircraft despatched by Coastal Command claim to have bombed Bremen, dropping a further 46 tons of H.E. bombs. Owing to the cloud very few aircraft were able to see any ground detail and those which did merely caught glimpses of built-up areas or of rivers. The first wave, which were all GEE aircraft relied almost entirely on fixes to determine their position, and 117 of them bombed completely blind. These aircraft started fires which quickly grew to a considerable size and formed the chief means of identifying the target for the aircraft which came later, although 3/4 of the rear force however bombed blindly on GEE fixes. The fires are reported to have grown throughout the raid and occasional aircraft caught glimpses of burning built-up areas. One Halifax, which came down below the cloud base at 3,000 feet to drop its bombs, reported that there were considerable fires burning in the town. In view of the fact that the glow on the clouds from fires started by aircraft bombing blind on GEE fixes, was the chief means used by later aircraft to identify the target, it may be said that the results achieved on this raid were mainly due to the use of GEE as a blind bombing device.

16. Only 2 of the aircraft of 5 Group who were given the Pocke-Wulf works at Neuenland as their target claim to have found them with certainty and bombed them. Both these aircraft report a fire in the buildings on the side of the aerodrome and it is therefore probable that one at least of the aircraft bombing through cloud hit this factory. The rest of 5 Groups aircraft state that they bombed Bremen on GEE fixes, E.T.A. and the glow of fires, continued in some cases by glimpses of built-up areas through gaps in the cloud. 58 of them bombed blind on GEE.

17. Owing to unfavourable weather conditions only 2 aircraft returned photographs showing ground detail taken with bombing, but neither of them have been plotted. Daylight reconnaissance on the following day revealed that a part of the force had overcome the difficulties of the weather and bombed the target, inflicting useful but limited damage. The most important item is probably the serious damage inflicted on the Pocke-Wulf works at Neuenland. A large block measuring 340 x 250 feet believed to be the Machine or Press shop has received a direct hit, probably from a 4,000 lb. bomb and has been almost completely wrecked. A nearby building 250 ft. long has been damaged by blast, and 4 other buildings have also suffered in various degrees.

18. About 40 industrial or commercial buildings in different parts of the city have been destroyed and a further 20 damaged. There is, however, no serious incident in the docks area. Damage to business and residential property is more extensive. It is most serious in the Ostertors district where there are seven areas of destruction caused mostly by fire. The largest of these covers 40 acres and altogether they total 27 acres in which approximately 140 buildings have been destroyed or severely damaged. In addition about 30 buildings in the Altstadt and 80 in the Neustadt have also been destroyed, most of them by fire.

19. 7 aircraft were early, none of them more than 6 minutes, however, and 7 were late, but none of these more than 10 minutes. In all, therefore, 731 aircraft attacked within a period of 80 minutes.

Other Targets Attacked

20. Aircraft which were unable to identify Bremen bombed a number of other towns in North West Germany including Wilhelmshaven, Bremerhaven, Emden, .../Vegesack

Vegeasack, Oldenburg, Cuxhaven and Hamburg. All these were also covered almost completely by cloud and in most cases bombing was done on GEE fixes or E.T.A. Large fires are reported from the Wilhelmshaven and Emden areas. Other aircraft which had to return early bombed aerodromes in Holland.

Casualties

21. 44 (4.9%) of Bomber Command aircraft are missing from this operation and 65 (7.2%) received damage to varying extents, 22 cases being serious (Cats. AC, B and E). Of those aircraft which were damaged, 43 (4.8%) were damaged by flak and 10 (1.1%) were damaged by fighter attack, and in 12 (1.3%) cases (including 1 Lancaster damaged by an incendiary bomb dropped from another aircraft) the damage was not due to enemy action. There was 94 (10.3%) interceptions of which 26 (2.9%) developed into attacks; 4 enemy fighters are claimed as believed destroyed and 4 others are claimed as damaged.

22. In addition to the 44 Bomber Command aircraft missing from this operation 5 Coastal Command aircraft did not return.

23. There was moderate inaccurate heavy flak and intense light flak both of which came mainly from along the line of the river. Searchlights, however, was mainly ineffective owing to the presence of considerable cloud.

24. The reports made by our returning aircraft giving details of aircraft seen shot down indicate that at least 7 aircraft were shot down by flak over the target area. Losses en route due to enemy action appear to have been distributed about equally between flak and fighter, and to have been incurred mainly on the way into the target, the ratio of losses due to enemy action of the inward and outward journeys being approximately 5:1.

25. An analysis of the proportions of heavy and medium aircraft missing and damaged is given in the table below

Type	Sorties	Missing	Damaged by flak	Damaged by fighter	Non-Enemy Causes
Heavies	312	4.2%	7.7%	1.3%	1.3%
Medium	592	5.2%	3.2%	1.0%	1.4%

26. The higher percentage loss rate of the medium aircraft is however caused entirely by the missing Wellington '0's and Whitleys of 91 Group. The loss rate for the remaining medium aircraft is in fact only 2.5% of sorties despatched and similarly the missing rate for all aircraft apart from the Wellingtons of 91 Group was only 3.2%. The 'heavies' again show a higher missing rate than medium aircraft, excluding those of 91 Group, but the figure is inflated by Halifax losses at 6.4%; apart from Halifax losses the missing rate for heavies is low at 2.6%. Damage by flak is also significantly higher for all the heavy aircraft and particularly for Halifaxes.

27. Although the missing rates for 91 Group for both types of aircraft are high, there is no definite evidence to show that the excessive losses experienced were due entirely to enemy action. The following table gives a comparison between the missing rates, damage rates and interceptions for each type of aircraft flown by 91 Group and the corresponding details for the remaining medium aircraft.

Aircraft	Sorties	Missing	Dam. by Flak	Dam. by Fighter	Non-Enemy causes	Attacks	Other Interceptions
Whitleys of 91 Gp.	32	12.5%	3.1%	3.1%	0%	3.1%	3.1%
Wellington '0's of 91 Group	155	11.0%	3.2%	0.6%	2.6%	4.5%	2.6%
All remaining medium aircraft	385	2.6%	2.9%	1.0%	1.0%	2.6%	9.1%

28. This table shows that neither type of aircraft flown by 91 Group reported greater enemy action damage than the medium aircraft flown by the other Groups, and that a larger percentage of interceptions of 91 Group's aircraft resulted in attacks.

29. 5 aircraft came down in the sea whilst returning from this operation of which 3 - 2 Wellingtons and 1 Whitley - belonged to 91 Group. It is known that this was due to petrol shortage in one case. One of the crashes of 91 Group Wellingtons was also caused by a forced landing due to fuel shortage. 21 of the 24 aircraft of 91 Group which were missing for this attack had 100% pupil crews. Weather conditions were very bad and the wind experienced differed from that forecast. In such conditions there would be considerable difficulties in navigating accurately, particularly for inexperienced crews flying aircraft not fitted with GEE. Inaccurate navigation would not only cause losses owing to fuel shortage but also getting out of the main traffic stream would expose aircraft to individual attention from the enemy's defences. The Wellington Ic and Whitley aircraft of 91 Group are amongst the slowest types used on this raid and lone aircraft of these types would therefore be comparatively easy targets both for the enemy's flak and fighter defences.

Summary

30. An unfortunate change of wind produced much cloud over the target and consequently the amount of damage done in Bremen was not large considering the scale of the attack. Useful damage to industrial property was inflicted, however, and in particular the Focke-Wulf aircraft factory was hit and sustained considerable damage. The first wave of attackers found the target by means of GEE and it was the fires started by these aircraft which were mainly instrumental in guiding those which followed. It was therefore owing to GEE that there was any concentration of attack on Bremen.

31. The losses on this occasion were above average, owing to a very high loss rate for 91 Group. It is probable that this was mainly due to inaccurate navigation in difficult weather conditions by inexperienced pupil crews.

INTRUDERS

32. 44 aircraft of 2 Group and 15 of Army Co-operation Command working under the operational control of 2 Group carried out intruder operations, beginning at dusk with attacks by Boston and Mosquitos. In addition Fighter Command carried out intruder activity as part of the same plan. The following is a summary of this activity giving the times of the attacks or patrols.

St. Trond	0155	(B)	Deelan	0030 - 0135	(F)
Hannstedt	2315	(B)	Twente	0100 - 0221	(B)
Gilze Rijen	0027-0040	(F)	Alkmaar	2315	(B)
	0125-0200	(F)	Leeuwarden	2320	(B)
Eindhoven	0025-0050	(F)		0031- 0055	(B)
	0135-0215	(F)		0202 - 0222	(B)
Venlo	0100	(B)	Jever	2323	(B)
	0159	(B)	Ardorf	2320	(B)
Valkenburg	2320	(B)		0041 - 0125	(B)
Schipol	0040 - 0300	(F)	Vechta	0057 - 0124	(B)
Soesterburg	0050 - 0300	(F)	Schleswig	2327	(B)

(B) By Bomber Command Aircraft (F) By Fighter Command Aircraft

33. Low level attacks at dusk by Boston flying in formation were made on 7 aerodromes. In only 2 cases, Valkenburg and Ardorf, did the whole formation find and bomb the target. In all the other attacks one aircraft at least was not able to bomb, either because of losing the formation in the darkness or because the target was recognised too late and the aircraft swung wide when turning in to attack. The formation sent to Gilze Rijen aerodrome was unable to find the target because of darkness. At these aerodromes which were attacked bombs fell on the runways and aerodrome buildings.

34. 2 Mosquitoes were sent to attack Stade aerodrome and 2 more to attack Schleswig aerodrome. One attacking Schleswig was successful but the others all failed to find their primary owing to the darkness.

35. It is probable that better results would have been achieved by the attacks if they had been timed to take place a quarter of an hour earlier when there was slightly more light.

36. Light intruder operations against 6 aerodromes were undertaken by 31 Blenheims, 18 of which claim to have bombed their primary targets. Attacks, by one or more aircraft, were delivered on all the aerodromes to which these aircraft were despatched and bombs are said to have fallen across the airfields and on aerodrome buildings.

Other Targets Attacked

37. A number of these aircraft which failed to locate their primary target bombed alternatives which included other aerodromes in the Low Countries, a railway junction near Leeuwarden and the town of Dornum.

Casualties

38. 2 Blenheims are missing from intruder operations, and 1 Blenheim 3 Bostons sustained flak damage. One of the Mosquitoes hit an obstruction near Stade aerodrome and received Cat. B damage, and one of the Bostons attacking Leeuwarden received Cat. A damage from bomb blast.

BC/S. 26342/2/ORS.
15th August, 1942.

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary			Casualties				Interceptions			
				Primary	Primary Area	Reached Target Area		Over Enemy Territory		Not over Enemy Territory	Missing	Dam. by Flak	Dam. by E.A.	Not due to Enemy Action	Attacked	Not Attacked
						Bombed other Target	Abortive	Bombed other Target	Abortive							
BRIDEN	1	Well Ic	18 *		12					3						
		Well.II	28 *		25			1	2		1 AC	1 m.	2 E	1	3	
		Well.III	19		21						1 m.					4
		Well.IV	49 *		44			2		2		1 m.	1 AC		2	1
		2	Chitler	2 *					2							
	91 Group attached to 1 Group	Well Ic	11 *		9					1						
	2	Blenheim	15 *		10				1	4		1 m.				
	Army Co-Op. Command	Blenheim	5 *		4	1						1 m.				
	3	Well.Ic	5 *		5			1	1	2					1	
		Well.III	105		68	10	22	1	3	10	1	3 m.		1 E	2	17
		Stirling	52		44	8	2	1	7	5	3	5 m.	1 AC	1 AC		13
	4	Halifax	88		86	8	2	3	6	9	8	1 m.	1 AC	1 E	4	10
	Whitley	32 *		25	2				1	4	1 m.	1 E		1	1	
91	Well Ic	155 *		111	6		2	8	11	17	3 AC	1 AC	2 E.	7	4	
	Well Ic	155 *		111	6		2	8	11	17	3 AC	1 AC	2 E.	7	4	
92	Bombardier	21 *		20		1	1		1	1					1	
	Whitley	15 *		13						2						
	Well Ic	66 *		45	2			4	13	2	1 AC	1 AC		4	6	

...../over

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary			Casualties				Interceptions			
				Primary	Primary Area	Reached Target Area		Over Enemy Territory		Not over Enemy Territory	Missing	Dam. by Flak	Dam. by E.A.	Not due to Enemy Action	Attacked	Not Attacked
						Bombed other Target	Abortive	Bombed other Target	Abortive							
BRIDEN Focke- Wulf Works	5	Bombardier	26 *	1	21	1		2	1						2	
		Manchester	20 *	1	13			1	4						1	
		Lancaster	69		79	4	1		3	8	1	1 AC		1 AC	1	
		Well Ic	27 *								5 m.		1 m.		4	
TOTAL		504	2	659	43	31	14	36	75	44	43	10	12	26	68	
ST. IROND A/D	2	Blenheim	6 *	1		2	2			1						
HAMSTEDE A/D	and Army	Boston	3 *	2			1									
CHITRE - RIVEN A/D	Co-Op. Command	Boston	3 *			2		1								
VENLO A/D		Blenheim	5 *	4						1						
WALKENBURG A/D		Boston	3 *	3												
CRONIE A/D		Blenheim	5 *	4		1					1 m.					
ALDMAR A/D		Boston	3 *	2		1	1				1 AC					
LEINWEGEN A/D		Blenheim	7 *	2	2	1		1	1					4	1	
LEINWEGEN A/D		Boston	6 *	2		1	2	2			1 m.		1 AC			
JEVER A/D		Boston	3 *	2		1					1 m.					
ARDORF A/D		Blenheim	4 *	1	1			1	1							
		Boston	3 *	3												
VICHTA A/D		Blenheim	4 *	4												
STADE A/D		Mosquito	2 *			1		1					1 E			
SCHLESWIG-JAGEL A/D		Mosquito	2 *	1			1									
			563	33	662	49	40	16	41	76	46	7 AC	1 E	6 E		
												1 A.	5 AC	2 E		
												39 m.	1 A	4 AC		
												3 m.	1 A	1 A		
														1 m		

* Not fitted Gee

Total Abortive 157

Damaged by British Incendiary Bomb.

RAID TRACK AND BOMB PLOT NOT AVAILABLE

MOST SECRET

No. L74401
AIR MINISTRY WREPOFFICE NO. 96
5 AUG 1942 COPY NO. 16
TIME → HOURS
5 AUG 1942

BOMBER COMMAND REPORT ON NIGHT OPERATIONS 26 AUGUST 1942

Meteorological Advice Submitted to the Command

1. 0915 hours. Germany:- Along and near N. Sea Coast, much strato-cumulus cloud. Inland, including Ruhr, some breaks in layer cloud.
- France:- Central and West, small amounts of cloud. Visibility over Continent generally moderate to good.
- Home Bases:- Broken low cloud in North, some medium cloud in South. Visibility moderate to good, but local troubles due to smoke.
- 1240 hours. No change.
- 1710 hours. Frisian Islands:- Variable amounts of strato-cumulus increasing eastwards, but base not below 1500 ft.
- Lorient, St. Nazaire:- Probably no cloud.
- Home Bases:- No worries, cloud variable, possibly low over Midlands. Visibility decreasing slowly, owing to smoke and local mist towards dawn.

Executive Orders

2. Weather over the targets was too bad for bombing operations. A small force of aircraft was therefore detailed for sea mining.

Sorties

3. 39 sorties were despatched on this night. The details are given in Table below.

Target	Group	Type	No. of sorties despatched	Laid mines in Primary Area	Abortive			Dem. by Flak
					Over mining area	Over E. T.	Not over E. T.	
Frisian Islands	1	Well.II	3 *	3				
		Well.IV	12 *	12				
St. Nazaire	3	Well.III	14	14				1 m.
Lorient	5	Hampden	10 *	7	1	1	1	2 m.
TOTAL			39	36	1	1	1	3 m.

* Not fitted T.R. 1335

4. The 3 (7.75) sorties were abortive in one case owing to illness of a member of the crew, in another to inability to identify the target area, and in the third to losing a pinpoint when engaged by ground defences.

Moon

5. The moon, which was 96% of full, was above the horizon during these operations.

.... / weather

Weather

6. Cloud was mainly 10/10, base 1500 feet in the Frisian area, but below that height visibility was moderate except in rain of which some patches were encountered. Off Lorient and St. Nazaire there was no cloud and visibility was good apart from slight haze. At home bases variable amounts of low clouds were experienced but never below 2/3000 feet and visibility remained moderate.

Results

7. 36 (92%) sorties claimed to have laid mines as follows in their allotted areas:-

Frisian Islands	30 mines
St. Nazaire	28 mines
Lorient	7 mines
<u>Total</u>	<u>65 mines</u>

Nearly all crews were able to obtain satisfactory pinpoints before completing their task.

8. Only three aircraft found suitable targets for their auxiliary bomb load. One bombed a flak ship, one dropped them on flak and searchlight batteries at Pointe Louis near Lorient and the third attacked what was believed to be an aerial lighthouse.

Casualties

9. None of our aircraft are missing from this operation. Minor flak damage was sustained by one aircraft at St. Nazaire, and by two more at Lorient where intense light flak with searchlight co-operation was encountered.

BC/S.26342/1/ORS.
30th July, 1942.

BOMBER COMMAND REPORT ON NIGHT OPERATIONS - JUNE 27/28th 1942

Meteorological Advice Submitted to the Command

1. 0920 hours. Southern North Sea and N.W. Germany:- Behind and near warm front overcast with low and medium cloud, occasional slight rain.
Baltic Coast:- Much layer cloud.
Middle & Upper Rhine:- Well broken medium cloud, little low cloud.
South Germany:- Fine.
N.E. France:- Some medium cloud, little low cloud.
W. France:- Small amounts of low cloud.
Home Base:- Generally cloudy, but base above 1000 ft.
- 1230 hours. No change. Cloud over Heligoland Bight and adjacent coast expected in several layers, base of lowest below 1000 ft.
- 1700 hours. Bremen:- 8-10/10 low cloud, base 1-2000 feet, tops 3-4000 feet.
Route to Bremen:- 8-10/10 low cloud falling to 500 - 1000 ft.
Lorient, Gironde:- Little low cloud, 5/10 medium and high cloud.
Home Bases:- Variable strato-cumulus, broken in South, mainly 10/10 in North, base not below 1500 feet. Slight rain in North for return. Local visibility deterioration due to smoke.

Executive Orders

2. Much layer cloud obscured the target areas and the more eastern minefields, but it was thought that advantage could be taken of reasonably good conditions at home bases to make a blind bombing attack at moderate strength, especially as the ample cloud cover would serve to embarrass the defences. Bremen was selected as the target, mainly because submarine building was known to be in progress there. This was accompanied by a small mining effort which had to be sent to western French ports as other minefields were unfit.

Sorties

3. 165 sorties were despatched on this night, of which 144 were ordered to attack Bremen. For details see the attached table.
4. 15 (9.1%) sorties were abortive. In 4 cases this was due to attack by enemy fighters, in 3 cases to icing, and in the remainder to technical defects.

Moon

5. The moon, which was full, was above the horizon during these operations.

Weather at Basca

6. The weather remained fine all night over England with moderate to good visibility. Occasional light rain fell in 4 and 5 Groups at dawn, but the cloud base never dropped below 1000 ft.

BremenPlan of Attack

7. This operation was planned as a blind bombing attack (unless the target proved to be clearly seen and identified) by aircraft fitted with T.R. 1335 was timed to last for 3/4 hour. All aircraft, except the Lancasters which to carry 4000 lb. bombs and incendiaries, were to carry 4 lb. incendiary bombs. The route to the target was laid down so that a T.R. 1335 fix was used as the first turning point. From this position the course was to be set to follow the 'C' lattice line to the position B 4.75, C 39.10 from which the homing route to the target was to be made along the 'B' lattice from West to East.

Weather Experienced

8. En route to the target 10/10 layer cloud was encountered over the sea. This broke towards the Dutch Coast but increased again to 10/10 inland over Holland. There was a rain belt 10-15 miles wide off the Dutch coast with local electrical disturbances. In the target area 10/10 cloud persisted between 2000 ft. and 5000 ft. Above this level there was about 5/10 cirrus and visibility was good in the bright moon.

Success of the Attack

9. 119 (83%) sorties claimed to have attacked the target area and all but 5 of these, which were early, dropped their bombs within the prescribed period. Actually 108 aircraft attacked between 0130 and 0200 giving a concentration of 216 aircraft per hour during this period. All crews attacked blindly on a T.R. fix, though one or two claimed to have seen the ground and recognised built-up areas shortly after bombing. 8 navigators stated that a different fix to the one laid down was showing on the instrument at the time bombs were released. In the prevailing conditions it was not possible to make any accurate observation of results, but more than half the crews claimed to have seen fires or the glow of fires through cloud in the vicinity of their release point. A few crews expressed the opinion that these fires were much more concentrated than in the previous attack on Bremen, and that the operation was more successful.

10. No night photographs showing ground detail were obtained during this operation, but a successful daylight reconnaissance was carried out on June 29th. This revealed a fair amount of new damage in Bremen, the most important item being an area of destruction by fire of approximately 7 acres near the Neustadt Guter Bahnhof, where about 11 sheds, probably railway buildings have been destroyed. About 15 small industrial buildings in other parts of the town have been destroyed or severely damaged. The largest concentration of residential damage is at Suder Vorstadt where about 40 - 50 houses in an area of 13 acres have been gutted. There are a number of scattered incidents in other residential areas.

Other Targets Attacked

11. One Halifax which lost height after being attacked by an He. 109 bombed Texel aerodrome, and another which could not climb above 12000 ft. attacked Papenburg. Results were not observed in either case.

Casualties

12. 9 (6.2%) of our aircraft are missing from this operation and 23 (16%) received damage to varying extents. 15 (10.4%) of the aircraft were damaged by flak and 7 (5%) were damaged by fighter attack.

13. The average missing rate for similar conditions of weather and visibility is 2.5%. On this occasion the percentage missing is high - the amount of damage sustained is also considerable.

14. In particular 70% of the damage from flak and fighters was about equally divided between the Wellington IIIs and Stirlings of 3 Group, who also sustained 80% of the fighter attacks reported and 60% of the total interceptions.

15. Flak was reported as being considerably more intense than on previous visits and the enemy's fighter effort was also very active. Of the 119 aircraft who claim to have attacked the Primary area, 59 were from 3 Group; furthermore all these aircraft bombed consistently high where the visibility would undoubtedly be excellent at this time of the year. These aircraft would therefore make good targets for the enemy's fighters which no doubt explained the large number of interceptions reported and damage sustained.

Summary

16. The expectation of considerable cloud over all target areas with fine weather at home bases provided suitable conditions for a blind bombing attack. 144 T.R. 1335 aircraft were therefore despatched to attack Bremen. In 10/10 cloud 83% of the force claimed to have completed their mission successfully and this claim is substantiated by subsequent daylight reconnaissance which revealed considerable new damage on the target. Casualties were above the average for this target in the prevailing conditions and the brunt of them was borne by 3 Group. It is considered that the raid was quite successful and fulfilled the expectations of T.R. 1335 used as a blind bombing device.

Minelaying

17. All the 15 aircraft despatched successfully completed their task of laying mines in the St. Nazaire and Gironde areas. The weather was fine and clear except for slight haze and all crews identified their positions visually with certainty before dropping their mines. 35 mines were laid in the Gironde and 16 off St. Nazaire.

Leaflets

18. 5 out of 6 freshmen crews of 4 Group detailed to drop leaflets carried out their task successfully. The Caen, Chartres, Orleans, Le Mans and Rouen areas were each visited by one aircraft.

BC/S.26342/3/ORS.
10th August, 1942.

Target	Group	Type	No. of sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary				Casualties			Interceptions			
				Primary	Primary Area	Reached Target Area	Bombed other Target	Over Enemy Territory	Bombed other Target	Not over Enemy Territory	Missing	Damaged by Flak	Damaged by Enemy aircraft	Not due to Enemy Action	Attained	Not attacked
BREMEN	1	Hell.III	15		11			1							1	
	3	Hell.III	40		36			1			1	5 n.	1 B 1 AC		4	4
		Stirling	26		21			2	2	1	5 n.	1 E 1 B 1 AC		6	4	
	4	Halifax	39		29			2	1	5	2	4 n.	1 n.	1 n.	1	6
	5	Lancaster	24		20					2	2				1	
	TOTAL			144		119			2	5	9	9	15	7	1	12
MINELAYING St. Nazaire	1	Hell. II	8*		8										1	
Gironde Ekver	5	Lancaster	7		7											
LEAFLETS	4	Halifax	6 +		5					1						
			165		139			2	5	10	9	15 n.	1 E. 2 B. 2 AC 2 n.	1 n.	13	15

* Not fitted T.R. 1335

+ Freshmen

Total Abortive 15

MOST SECRET



A: 174657	WAR ROOM
NIGHT RAID REPORT NO. 98	
6 AUG 1942	
TIME	COPY NO. 16
HOURS	

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

Meteorological Advice Submitted to the Command

1. 0920 hours. North Germany:- Much cloud at medium levels. Near the coast, much low cloud with some breaks. Inland, good breaks in low cloud.
- France:- N. coast, strato-cumulus with some breaks. Inland N.E., broken medium and low cloud. Central and S.W. (including most of West coast), small amounts of cloud.
- Home Bases:- Variable cloud above 1000 feet. Moderate visibility.
- 1240 hours, N.W. Germany :- Much cloud generally especially near coast.
- N.W. France:- Much layer cloud especially over the sea, broken strato-cumulus with medium above in St. Nazaire area.
- Home Bases:- Fit, though slight drizzle is expected.
- 1700 hours Gironde :- Only some high cloud expected.
- St. Nazaire:- Medium and well broken strato-cumulus, with risk of fog in estuary.
- Lorient :- Some fog or low stratus. 8-10/10 strato-cumulus in Havre area will make landfall difficult.
- Home Bases:- No real worries, but base of cloud below 1500 feet. Visibility deteriorating locally to 1 - 2 miles.

Executive Orders

2. Generally cloudy conditions and a full moon gave conditions more favourable to fighters than bombers. Crews were rested except a small number who were given a mining task and some freshmen crews who carried out a bombing operation on the West Coast of France.

Sorties

3. 19 sorties were despatched. For details see the attached table.
4. 5 (26.3%) sorties were abortive. In 3 cases this was due to the aircraft being held in searchlights and therefore being unable to make an accurate bombing run and in the other 2 cases to technical defects.

Moon

5. The moon, which was full, was above the horizon during these operations.

Weather at Bases

6. The weather remained mainly fine with little cloud and moderate visibility but there was sea fog and low stratus cloud in the South West.

...../St/ Nazaire

St. Nazaire

7. 9 of the 14 aircraft sent to St. Nazaire claimed to have bombed the primary target area in good weather conditions. 5 of these crews were confident that their bombs fell in the dock area, though only two reported actually seeing their bursts. Others were prevented from observing results by searchlight dazzle which appears to have been fairly intense, and no crews reported seeing any fires burning. The 2 photographs taken with bombing tend to confirm these claims. 1 shows the target area with bombs bursting West of the Bassin de Penhouet, the other is 1 1/2 miles from the docks.

8. One of our aircraft is missing from this operation. There is evidence of moderate accurate heavy flak with good searchlight cooperation, and 5 aircraft received damage from this cause. 3 interceptions by enemy fighters are reported, 1 of which developed into an attack, in which, however, our aircraft was not damaged. The cause of loss of the missing aircraft cannot be determined.

Minelaying

9. The weather was fine with good visibility in the Gironde Estuary and 3 Lancasters had no difficulty in identifying their position visually to confirm their T.R. fix before carrying out their task. Altogether 15 mines were laid.

Leaflets

10. One Stirling dropped leaflets in the Caen - Laval area.

BC/S.26342/2/ORS.
27th July, 1942.

26/29th June, 1942.

Target	Group	Type	No. of sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary				Result not known	Missing	Casualties			Interceptions			
				Primary Area	Primary Area	Reached Target Area		Over Enemy Territory				Not over Enemy Territory	Missing	Killed	Wounded	Not due to E.A.	Attacked	Not attacked
						Bombed other Target	Abortive	Bombed other Target	Abortive									
ST. NAZAIRE	3	Stirling	4		1		1		1									
		Hell.III*	9	1	2		2	1					1 AC 1 A	1	1			
	5	Lancaster	1	1														
MINING-LAYING Gironde River	5	Lancaster	4		3		1											
LEAFLETS	3	Stirling	1		1													
		TOTAL	19	5	7		4	1	1		1	1 AC 1 A 3 n.		1	2			

* Not fitted with T.R. 1335.

+ Freshmen

Total abortive 5

BOMBER COMMAND REPORT ON NIGHT OPERATIONS, JUNE 29/30TH, 1942.Meteorological Advice Submitted to the Command

1. 0930 hours. Germany:- N.W. Coastal strip, layer cloud with a few breaks.
Ruhr, some layer cloud, but good breaks expected.
- France :- H.W. Much layer cloud, fog patches. Bay of Biscay local fog patches. Inland, small amounts of cloud.
- Home Bases:- Variable amounts of cloud, moderate visibility. Slight rain probable near cold front.
- 1245 hours. No great change from 0930 hours.
- 1720 hours Bremen:- Amount of cloud doubtful, but much strato-cumulus likely.
- West Norway:- Cloudy weather not likely to clear, base below 1000 ft.
- St. Nazaire:- Hopeful about little cloud.

Executive Orders

2. Targets were expected to be obscured by cloud and all T.R. aircraft, carrying mainly incendiary bombs, were detailed for a blind bombing attack on Bremen.

Sorties

3. 284 sorties were despatched, of which 253 were ordered to attack Bremen. For details see the attached table.
4. 51 (18%) sorties were abortive. In 34 cases this was due to technical defects and 1 each to flak damage, illness and misunderstanding of a signal. Two intruders were unable to identify Looswarden Aerodrome owing to 10/10 low cloud, and 12 which reached Herdla Aerodrome abandoned their mission because of lack of cloud cover necessary in view of the absence of darkness in these latitudes.

Moon

5. The moon, which was 97% of full, was above the horizon during these operations.

Weather At Bases

6. Most Bases remained fit all night. Coastal fog was experienced in the southwest and locally on the south coast and there were some scattered patches of mist. Scattered light rain fell, especially in Lincolnshire, before midnight and there was an outbreak of thunderstorms on a line from Yarmouth to Nottingham about 0400 hours.

BremenPlan of Attack

7. This operation, like that of June 27/28th, was planned as a blind bombing attack, unless conditions were clear, by aircraft fitted with T.R. 1335. It was designed to last for one hour and the best crews were to lead the attack with the effort spread evenly over the period. Maximum conventional incendiary loads were to be carried and those aircraft which were to attack during the second half hour were to carry 30 lb. incendiary bombs. Two turning points on the outward route were laid down and the target was to be approached from West to East along the B lattice line.

...../Weather

Weather

8. Layer and strato-cumulus cloud was experienced on the route to the target East of 3° E. this increased to 8-10/10 in the target area. Visibility was good above the cloud and occasional breaks allowed some crews to obtain a view of the ground, but the majority found the target completely obscured. On the return journey thunderstorms were encountered near the Norfolk coast.

Success of Attack

9. 208 (82%) aircraft claimed to have attacked the primary target area dropping 104 tons of H.E. and 363 tons of incendiaries. The whole attack lasted for 1 hour and 13 minutes, due to a few scattered aircraft arriving early. Actually the concentration achieved during the height of the attack was considerably higher than had been planned. During a period of 23 minutes 184 aircraft dropped their bombs, giving a rate of 480 per hour. Cloud prevented accurate observation of results and practically all aircraft bombed blindly on T.R., but a fair number claimed to have confirmed their position visually after bombing through breaks in the cloud. There were a number of reports of fires or the glow of fires being seen, including three by aircraft which were proved by photographs to have been over the target. Altogether 16 photographs showing ground detail were taken at the time of bombing. 3 of these showed the target and a further one was within 5 miles.

10. Daylight reconnaissance over Bremen on July 1st revealed considerable fresh damage. Sheds at the Neustadt Guter Bahnhof have again suffered serious damage and there are about 5 incidents of destruction to small industrial buildings, including sheds at the Hansa Lloyd Dynamo Works and the Hansa Lloyd Automobile Works. Damage to residential property is scattered and affects about 30 houses in all.

11. Reconnaissance was also carried out over Dalmenhorst on the same day and showed that this town has also been heavily attacked. As this was the first occasion on which Dalmenhorst had been photographed it is not possible to attribute the damage to any one of the series of three raids on Bremen during this week. Damage is almost entirely confined to industrial buildings, namely the Linoloun Factories, Jute and Woollen Spinning Mills and Wool Processing Works. Five separate factories have all suffered severely. Three quarters of a jute factory has been entirely burnt out, two large areas of a Woollen Spinning Mill together covering 10,000 sq. yds have been gutted, and about 8 buildings or groups of buildings in the other factories have been gutted or severely damaged.

Other Targets Attacked

12. One aircraft which was unable to locate Bremen on account of the weather and its T.R. 1335 being unserviceable bombed Hamburg, and one which was late in starting attacked an unidentified town in the Emden area.

Casualties

13. 9 (3.5%) of our aircraft are missing from this operation and 41 (16.2%) sustained damage to varying extents. Of the aircraft which were damaged 30 (11.8%) were hit by flak, 5 (2%) by fighter, whilst the damage to the remaining 6 was not due to enemy action. There were 29 (11.5%) interceptions of which 10 (4%) developed into attacks.

14. Over Bremen moderate to intense heavy flak was reported which was stated to be accurately predicted especially from the North and West of the target. Light flak though intense was not accurate owing to the lack of searchlight co-operation. Accurately predicted heavy flak was also experienced on the way back from Bremen to the Frisians, particularly at Wilhelmshaven, Emden and Oldenburg. Some aircraft of 1 Group which travelled South on leaving Bremen and returned West of Emden reported the absence of flak in that route.

15. From an analysis of observations made by our aircraft it is probable that 5 aircraft were lost to night fighters and 3 to flak.

16. A number of enemy aircraft were damaged by our bombers and it is probable that two were destroyed.

Summary

17. 82% of the 253 T.R. aircraft detailed to carry out a blind bombing/ attack

attack on Bremen claimed to have completed their task successfully. Subsequent reconnaissance revealed that the raid had achieved a fair measure of success, there being several items of new damage in the target area. It was also shown that important damage had been inflicted on Delmenhorst in this or previous raids. The casualties incurred during this operation were about average for this target in the prevailing conditions.

Intruders

18. Only 2 of the 19 intruder aircraft despatched were able to carry out an attack. One bombed its primary target, Vechta Aerodrome, in good visibility and the bombs were thought to have fallen across the florepath, though no bursts were seen. The other aircraft was unable to find Vechta in thick cloud and bombed a nearby built up area. Bursts were seen and it was believed that the bombs fell on a railway.

Mine-laying

19. All 7 aircraft detailed to lay mines off St. Nazaire completed their task successfully. In fair visibility they were able to identify their positions visually. One aircraft aimed its auxiliary bomb load at 3 small ships, but no results were seen.

Leaflets

20. 2 aircraft dropped leaflets in the Paris area and 1 each in the Tours, Bourges and Angers areas.

EC/S. 26342/3/ORS.
11th August, 1942.

Target	Group	Type	No. of Sorties	Aircraft claiming to attack		Aircraft failing to bomb Primary				Missing	Casualties			Interceptions			
				Primary	Primary Area	Reached Target area	Bombed other Target	Over Enemy Territory	Over Enemy Territory		Not over Enemy Territory	By Flak	By Enemy Aircraft	Not due to Enemy action	Attacked	Not Attacked	
BREMEN	1	Well.III	15		13			1		1		2 n.				2	
	3	Well.III	93		75			3		12	2	1 E. 14 n.	1 B. 1 AC 1 n.	2 E. 1 B. 1 AC	5	6	
		Stirling	47		38			1		4	4	5 n.	1 AC	1 E. 1 B.	2	3	
	4	Halifax	34		27			1	2	1	3	3 n.	1 E.			2	5
	5	Lancaster	64		54				2	8		5 n.				1	3
		TOTAL		253		203			2	8	26	9	30	5	6	10	19
VENLO A/D	2	Blenheim	2 *	1		1						1 n.					
LEENWADEN A/D	2	Blenheim	2 *				2										
VENLO A/D	2	Blenheim	2 *							2							
HEERLE A/D	2	Blenheim	13 *				12			1							
MINELAYING St. Nazaire	1	Well.IV	7 **		7												
LE FLERS	1	Well.IV	1 **		1												
	4	Halifax	4 **		4												
			284	1	220	1	14	2	8	29	9	1 E. 30 n.	1 E. 1 B. 2 AC 1 n.	3 E. 2 B. 1 AC	10	19	

* Not fitted T.R. 1335

* Freshmen

Total Abortive 51