

THE FOLLOWING INFORMATION HAS BEEN OBTAINED FROM P/W AS THE STATEMENTS HAVE NOT AS YET BEEN VERIFIED, NO MENTION OF THEM SHOULD BE MADE IN INTELLIGENCE SUMMARIES OF COMMANDS OR LOWER FORMATIONS, NOR SHOULD THEY BE ACCEPTED UNTIL COMMENTED ON AIR MINISTRY INTELLIGENCE SUMMARIES OR SPECIAL COMMUNICATIONS.

GERMAN NIGHT FIGHTERS.

A REVIEW OF CURRENT GERMAN TACTICS.

1. Three recent A.D.I.(K) Reports, Nos.508, 599 and 620, have described current German night fighter tactics in some detail and have shown how the night fighter force, robbed of much of its early warning and at the same time the victim of extensive radio countermeasures was, up to the beginning of October 1944, forced into improvisation in its tactics.
2. This report has been compiled with the object of examining the extent to which the Germans have varied their tactics during October and November to meet the continued and successful countermeasures employed by R.A.F. Bomber Command.
3. The present information has been obtained from a pilot, a radar operator and a W/T operator of 3/N.J.G.2 shot down in Holland on the night of November 29th, and from a pilot of the same Staffel shot down in Belgium on the following night.
4. These prisoners confirm the fact that the situation at the end of November remained much the same as in early October; the following paragraphs therefore, whilst adding little to present knowledge of German tactics, have their value in showing the situation as it was on the more recent date.

Present Use of SN 2.

5. A re-examination of the conditions under which the night fighters are operating their search equipment shows that, at least in the neighbourhood of a bomber stream, interference by jamming is such as to render the SN2 completely useless. Resort to the alternative frequencies - of which there are two - had in P/W's experience made not the slightest difference; he described the disturbance as taking the form of grass on both sides of the traces on the range and bearing tubes.
6. These P/W expressed the opinion that of late Bomber Command has been making less use of window in favour of airborne jammers known as Rausch-Sender (see A.D.I.(K) 599/1944 paras.73 - 76); little interference from Window has in fact been experienced recently by crews of I/N.J.G.2.
7. Like their predecessors, the present P/W were not seriously disturbed by the prospect of Window jamming; recent recommendations had

laid down that under certain conditions the aircraft blip could be distinguished through the Window disturbances by the difference in their relative rates of movement down the SN 2 display.

8. In some of the aircraft of I/N.J.G.2 an attempt has been made to reduce the effects of electrical jamming by mounting the SN 2 aerial diagonally instead of vertically; these P/W had, however, no first-hand knowledge as to whether this expedient did or did not improve the situation.

9. An indication of its lack of success may be that during October the Gruppe Signals Officer had told the new aircrews that a new version of SN 2 was in course of development but that meanwhile they would have to make the best of present conditions and take advantage of periods when jamming was not present.

10. The Signals Officer did not divulge the name of the new apparatus, neither did he tell the crews when they could expect it to be introduced into operations; gossip in the Staffel had it that the new apparatus would be the SN 3.

11. The Gruppenkommandeur of I/N.J.G.2, Hauptmann RATH, now publicly claims to have been a life-long adherent of "cat's eye" night fighting and avers that all his victories have been achieved without the use of search equipment.

12. It is perhaps worth repeating that, as far as these prisoners knew, there is no question of re-introducing the Lichtenstein; one P/W, stated that that apparatus has completely fallen out of use and is not even employed in training.

SN 2 as Tail Warning.

13. Since the introduction of SN 2 into operations, all prisoners interrogated have stated that that apparatus in its present form is capable of giving a tail warning, although at a comparatively shorter range than its forward capabilities.

14. In I/N.J.G.2 there has recently been a further development in the improving of the tail warning; at the beginning of November new deliveries of Ju.88 G-6's began to arrive with an aerial array for tail warning installed at the extreme end of the aircraft tail unit.

15. This array consisted of one dipole carrier similar to those used for the normal SN 2 forward array, but with the dipoles placed in a horizontal position.

16. By the end of November, the Gruppe possessed some ten aircraft equipped in this manner; these P/W had themselves had no experience with this innovation but had understood that a picture only appeared in one tube of the SN 2 display - they thought the azimuth tube.

Naxos and H2S.

17. Some time in early October, crews in I/N.J.G.2 began to complain amongst themselves that something had gone wrong with Naxos; whereas

until that time it had been considered entirely efficient, and they had always been able to count upon obtaining large numbers of H2S contacts from a raiding force, they had now begun to obtain so few contacts as to arouse the suspicion that the R.A.F. had come to know about Naxos and was playing tricks with it.

18. Up to the end of November, nothing had been said officially by any of the senior officers, but the opinions of radar and W/T operators may be summarised as

- (a) that H2S is not being used to the same extent as formerly,
- (b) that the R.A.F. has an H2S of a new type or with a new frequency, and
- (c) that in some way Naxos is being jammed.

19. Of the 25-30 aircraft in the Gruppe, about half are equipped with Naxos.

Flensburg.

20. About ten of the aircraft of I/N.J.G.2 are equipped with Flensburg and according to these prisoners it frequently occurs that Ju.88-G is delivered with this apparatus installed.

21. Crews are at a loss to understand why the Flensburg is still being delivered since the apparatus has fallen out of use. At one time attempts were made to remove the internal part of the equipment to save weight in the aircraft, but a sharp reprimand came from higher quarters and it was duly put back. At all events, official instructions on present intentions with the Flensburg are entirely lacking.

22. It is perhaps worth repeating that the present radar operator P/W had been told by one of the experienced W/T operators of a possible use of the Flensburg as a warning of enemy aircraft.

23. It was said that a Monica signal always appeared within two limits on the Flensburg display; any signal appearing on either side outside those limits was an indication of either a ground radar pulsation, that from an SN 2 or from Allied A.I.

24. There was said to be no method of distinguishing between the three types of signal, but it would be possible to obtain an indication of whether a transmission originated from below, above or at the same level. In this way, it was claimed, Flensburg at least gave an indication that another aircraft, possibly a Mosquito using A.I., was in the vicinity.

25. One of the present crews had Flensburg installed in their aircraft but they had never taken an opportunity to try out the recipe described above.

SIGNALS TRAFFIC.

German Reaction to Continued Countermeasures.

26. The fact that at the beginning of October the German night fighter force was reduced to only one reliable signals channel - the high

powered W/T beacon commentaries - was reported in A.D.I.(K) 599/1944 para.46 et seq. The present interrogations, whilst producing little that is new, have once again confirmed that the situation with night fighter signals was as previously reported and, in fact, remained little changed at the end of November.

27. In I/N.J.G.2 the W/T operators had been experiencing exactly the same difficulties as in the other units recently examined; the present P/W stated that they too had found the Divisional and Gruppe commentaries on the M/F and H/F bands seriously jammed from about the middle of September, and they too had been forced to resort to the Divisional commentary put out by the high-powered W/T beacons.

28. On rare occasions, it has been possible to hear the Gruppe morse commentary (Gruppen Tastführung) through the jamming but results are in the majority of cases so uncertain that operators waste no time and go straight over to the beacon commentaries; the latter present no difficulties.

29. These P/W described the jamming note on the Fu.Ge.10P frequencies as being a rising and falling whistle. The VHF frequency band of 38.4 - 42.5 Mc/s has fallen completely out of use for the purposes of commentaries, but in the FuGe.16 was still used at take-off and for landing at the base of the unit at Kassel.

30. Thus, the present situation is that the night fighter Gruppen can no longer operate as units, but each individual crew must judge the situation for themselves from the information given by the beacon commentary and must themselves decide whether they shall attempt to intercept the bombers or give up the chase; if the search equipment is jammed, and the homing equipment produces no reactions, then the night fighter operation is reduced to the level of a Wilde Sau sortie.

31. One further complication which arises when the Gruppe commentary is inaudible is that crews listening to the Divisional commentary from the high-powered beacons often miss orders given to aircraft of the Gruppe, with the result that recall orders are frequently not heard and much effort is wasted in aircraft flying about aimlessly.

32. Eventually, when the attack is over and jamming has been withdrawn, crews will return to the Gruppe frequency and then belatedly hear the orders to return to base.

33. It is perhaps worth adding that the aircraft of I/N.J.G.2 have not been flying by the Himmelbett (Würzburg-Freya controlled) method.

RECONNAISSANCE AND LEADER AIRCRAFT.

Definition.

34. The prisoners were able to clarify the question of the so-called formation leader (Verbandsführer) described somewhat inadequately by previous P/W and reported in A.D.I.(K) 599/1944 paras.90-97.

35. It transpires that two separate categories of aircraft with totally differing functions are employed; one, known as the Aufklärer

(Reconnaissance) has the duty of taking off before the main formation and of contacting and reporting on the composition and movements of the bomber stream.

36. The other aircraft, the Verbandsführer, is the leader of a night fighter formation and, in an attempt to keep the unit together, that aircraft transmits periodical D/F signals, on to which the others are supposed to home, and which in theory have the effect of keeping the formation together.

37. Neither system has recently been working satisfactorily, largely owing to the jamming of signals channels. Nevertheless, in I/N.J.G.2 nightly preparations were made for putting reconnaissance and leader aircraft up, should Divisional Headquarters decide that it was necessary.

38. The functions of these two aircraft described in turn below.

Verbandsführer (Formation Leader).

39. The Verbandsführer aircraft is normally flown by an experienced senior officer such as the Kommandeur or a Staffelkapitän, and his aircraft always takes off with the main force of the Gruppe.

40. When ordered to take off, the aircraft of the Gruppe fly an initial course in the normal manner. Thereafter the duty of the Verbandsführer is to transmit a periodical D/F signal of two minutes duration at 10, 15 or 20 minute intervals, together with a pre-arranged single code-letter; the aircraft of the formation are expected to home on these signals and thus maintain a compact formation.

41. The code letter and the exact times at which the D/F signals shall be transmitted are arranged at nightly briefings.

42. In I/N.J.G.2 the D/F signals were given on the long wave band of the FuGe.10, with the addition of short-wave R/T or W/T instructions by the Verbandsführer to the formation on changes of course and height; only the leader aircraft was permitted to transmit.

43. The leader aircraft supplemented the R/T orders by the firing of prearranged verey signals as a guide to the bomber stream.

44. The Verbandsführer system had one serious disadvantage in that the D/F signals when given at the longer intervals, had the effect rather of scattering the formation after the first leg of a course from base, since the aircraft of the formation were apt to zig-zag across the leader's track at each succeeding D/F signal.

45. Up to the middle of September the Verbandsführer procedure could be said to be operating fairly satisfactorily, but when jamming of the frequency bands of the FuGe.10 commenced, its operation became impossible and in I/N.J.G.2 the procedure was dropped.

46. Divisional orders to operate a Verbandsführer still stand, and a routine daily briefing on procedure and callsigns was still held with I/N.J.G.2; Hauptman RATH, the Kommandeur, openly admits, however, that,

under present conditions he has no intention of operating a Verbandsführer and by holding the briefing he is merely obeying Divisional orders in the spirit.

Reconnaissance (Aufklärer aircraft).

47. The duty of the Aufklärer aircraft is to make contact with the bomber stream with the help of ground control, Naxos and SN 2, and then to report directly and solely to Divisional headquarters on its composition and movements. The Aufklärer is usually one of a number detailed daily from the ordinary night fighter Units.

48. In I/N.J.G.2 the crews of from one to three aircraft equipped with Naxos were briefed nightly to stand by for Aufklärer duties; orders to take off came from the Division, and once airborne the aircraft operated entirely under Divisional control on a special frequency known as the Aufklärer Welle.

49. Once the Aufklärer had served its purpose of contacting and reporting on the raiding force, that aircraft, on orders from the Division, assumed the duties of a normal night fighter.

50. It usually happened that orders to the Aufklärer to take off preceded those to the main force by anything from ten minutes to one hour; the Aufklärer detailed in I/N.J.G.2 were sometimes ordered up singly, whilst at other times two or three took off together. If no orders came from Division, then the Aufklärer took off with the main force and operated as normal night fighter.

51. Since the beginning of October, the Aufklärer aircraft, although briefed and standing by nightly, had not been ordered up by Division. These P/W were of the opinion that of late the channels of "Y" control had been so seriously disturbed as to make the procedure impossible in Western Germany. Additionally the air situation had recently been so confused that nothing more could be done than to order the main force of night fighters to take off at the last moment - and very often too late to be of any use.

TACTICS OF INTERCEPTION.

52. The following paragraphs of necessity take the form of notes and additions to the account given in A.D.I.(K) 599/1944. The methods used in I/N.J.G.2 have been found to follow the same principle as those used by other units; the present P/W were, however, able to clarify several points and to enlarge upon others.

Readiness.

53. Standing patrols were not flown by I//N.J.G.2; as with other units examined recently, a met and signals briefing was held each evening and crews remained at readiness in the crew-room during the whole of the night or until such a time as they were called on the Tannoy laid on in the room.

54. The aircraft were lined up at a dispersal and the engines were only started up after a crew or crews had been called to take off. In this

case the first aircraft could be away within 8 minutes of the crew being called; it had occasionally happened that crews were detailed to sit in the aircraft, but with the engines still.

55. Should an order to take off prove to be a false alarm and the aircraft be ordered to return, crews resumed their original state of readiness and the fuel tanks of the aircraft which had returned were immediately topped up ready for another start.

56. In the case of double sorties being flown, crews who returned to their base airfield after the first sortie resumed their original state of readiness. Such aircraft as landed on other night fighter bases, however, were temporarily attached to the unit which they visited, and received signals briefing as though they belonged to that unit.

Take-off.

57. There is no predetermined point at which the night fighters are put up to meet a raiding force, and sources of early warning of bomber penetration are, of course, unknown to the majority of operational crews.

58. In the experience of these prisoners, the order to take off was occasionally accompanied by a note as to the position and direction of the bomber force, but often, as on the last sortie of the 4R + RL on the night of November 29th, the night fighters were simply ordered to make for a given high powered W/T beacon and to await further orders.

59. In the days before the Gruppe commentary was jammed, the aircraft were sent to assemble over or near their base airfield, after which orders were given as to course and height to meet the bombers. Under present conditions, each crew or batch of crews ordered into the air is given an initial course which takes them to a beacon, or which is calculated to bring them directly to the bomber stream. If, after the first leg, no contact is made, the crews must do the best they can from the beacon commentary.

Navigation.

60. Navigation in I/N.J.G.2 follows the general practice amongst German night fighters in that an attempt is made to navigate primarily by D.R. with the additional help of ground navigational aids; it was stated that at present the only reliable aids were the visual and radio beacons.

61. One of the present P/W had the idea that some aircraft of the Gruppe, including those of the Kommandeur and Staffelführer, were using Bernhardsine as an additional aid, but he could give no further details. He had understood that the method of determining a position was by means of a succession of sine curves along a horizontal base, with a series of figures at the points where the curves struck the base line.

Contacting the Bombers.

62. These prisoners repeated that no attempt is or can be made to operate in any specific part of the bomber stream, and under present

conditions crews are content to have found the bombers at all, no matter how or where.

63. Once in the stream the night fighter crew will attempt to remain there, and it is only if chased off by a Mosquito or through lack of fuel or other defects to the aircraft, that the pilot will deliberately leave the stream again.

64. The commentaries are broken off as soon as an R.A.F attack has finished - at least as far as the recent shallow penetrations have been concerned - and the question as to whether the returning bomber shall be followed on their homeward track lies entirely with the night fighter crews, and depends largely upon the amount of fuel remaining in the aircraft.

65. There are no restrictions as to how far beyond the German border the night fighters shall fly, but these P/W pointed out that after the bomber attack is over, the night fighter has no commentary to help him.

I.F.F.

66. At the beginning of November the Signals Officer at I/N.J.G.2 announced that the R.A.F. had equipment for homing on to FuGe.25a transmissions; he nevertheless told crews that the order to keep the I.F.F. switched on must stand, but he added the order that the apparatus should be turned off when leaving German territory.

Armament - German and R.A.F.

67. The rear armament of one M.G.131 in the Ju.88 G-6 is intended solely for defensive purposes. The majority of crews felt that this armament was an unnecessary extra weight, and these P/W themselves had never heard of a case where it had been used in combat.

68. As far as R.A.F. armament is concerned, crews in I/N.J.G.2 at least have no knowledge of the use of radar aids by R.A.F. gunners. These P/W stated, however, that tracer fire from a bomber has distinct deterrent effect upon all but the most hardened night fighter crews.

Petrol.

69. There has been no noticeable shortage of petrol in I/N.J.G.2 and according to these P/W there have been no orders to economise. The sole indication of any shortage was a recent restriction in SN 2 practice flights by day.

Night Rocket Phenomena.

70. The question has been asked as to whether the Germans are using jet propelled aircraft at night. These prisoners had not heard of the use of this type of aircraft and were inclined to ridicule the suggestion.

71. They themselves had seen rocket traces at night and had attributed these to rocket Flak; they had had to draw their own conclusions, however, since officially they were told nothing.

72. One of the present pilots had twice encountered enormous flaming masses over Berlin some time ago; he had at first thought these to be aircraft going down in flames, but on the second occasion he was close enough to make a careful observation and could see that the rate of fall was too slow for a crashing aircraft. Again, he had been told nothing officially.

THE NIGHT FIGHTER'S DIET.

73. The fact that night fighter crews must now depend more and more upon good night vision has prompted an enquiry into the measures being taken by means of diet and drugs to maintain a standard of night vision in I/N.J.G.2.

74. The familiar black pills formerly distributed to night fighter and bomber crews in the G.A.F. were absent in this unit. The normal diet of the night fighter was given by one of the present P/W as follows:-

Breakfast: 30 grammes of butter,
White bread,
One egg,
50 grammes of sausage,
½ litre of fresh milk,
Ersatz coffee.

Lunch: Soup; varying from meat and vegetable to
noodle.
Meat and 2 veg.,
Pudding (occasionally}.

Supper: 45 grammes of butter,
80 grammes of sausage,
Black bread,
Jam or artificial honey,
8 cigarettes

75. When returning from a sortie, the night fighter is given the following special issue:-

25 grammes of chocolate,
25 grammes of coffee beans (real),
2 packets of boiled sweets,
1 cake of dried fruit,
Biscuits.

A.D.I.(K). and U.S.
Air Interrogation.
30th December 1944

S.D. FELKIN
WING commander