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G.A.F NIGHT FIGHTERS.

R.A.F. BOMBER COMMAND COUNTERMEASURES
AND THEIR INFLUENCE ON GERMAN NIGHT FIGHTER TACTICS.

1. The information contained in this report was obtained from a pilot and W/T operator of 7/N.J.G.4 and a W/T operator of 5/N.J.G.1 who were captured after a night operation over Western Germany on October 6th.
2. These are the first prisoners from operational night fighter units to have been interrogated since the German night fighter force retired behind its own frontiers, and although none of them had more than seven operations to call upon for their experience, they were able to provide a fairly complete picture of tactics now being employed.
3. If these two units can be taken as representative, it is evident that the German night fighter force, rather than calling the tune in the interception of R.A.F. night attacks, is now being forced more and more to improvisation. Its tactics are being governed to an increasing extent by the effective countermeasures against its Radar and signals system, and the Germans are quickly reaching a point where they must choose either a radical change in their methods of interception or continued improvisation on the present lines.
4. The present report outlines the tactics now being employed by II/N.J.G.1 and III/N.J.G.4 and shows how, with their signals systems and interception equipment seriously upset by R.A.F. countermeasures, those units are groping for a solution to their ever increasing problems of intercepting the bomber force.

TACTICS OF INTERCEPTION.

Methods Employed.

5. Whilst II/N.J.G.1 is flying free-lance patrol (Ungeführte Zahme Sau) from the Cologne area III/N.J.G.4, unlike other night fighter units recently examined favours Geführte Zahme Sau. This method depends on D.R. navigation by the aircrews, and on simultaneous tracking by the ground control at Gruppe headquarters, with the addition of a measure of signals control from the same source.
6. Some of the aircraft of 7/N.J.G.4 are also flying by the old type of Himmelbett (G.C.I.) control, the system of the night fighter box controlled by a plotting table, using data from two Würzburgs. On each

night the number of aircraft which may fly by that method - usually two or three - is announced, and any of the less experienced crews, within the limits of the permitted number, may do so if they wish.

7. Other forms of control, such as Egon or "Y", are not practised in the two units under review.

Early Warning and Readiness.

8. Since the night fighters have retired to Germany at least those units based on the western borders have been robbed of the greater part of their early warning system, with the result that the aircraft, at least of the two Gruppen examined, cannot be put into the air at such an early stage of an impending attack as was previously the case.

9. Recently, therefore, crews have been kept at immediate readiness night after night from dusk until dawn, whatever the weather. Even when the nightly met. briefing indicates that flying conditions make night fighter activity impossible, that state of readiness must continue.

10. In cases where an attack was known to be underway but the probable course of the bombers had not been established, the night fighters have in the past been put up and ordered to orbit a given point near the base airfield, the aircraft being stepped up to 3,000 metres at intervals of 100 metres whilst orbiting. When the point of interception had been decided upon, the aircraft were given an initial bearing by the Gruppe commentary.

11. Since the retreat to Germany, there has been little or no orbiting of the airfield or of beacons by the aircraft of these two units. These P/W were insistent that no standing patrols are now flown, and that the night fighters do not take off until warning of an impending attack is received; occasionally, however, crews are kept in their aircraft at immediate readiness until the situation has been clarified.

12. Upon receiving the first warning from Divisional Headquarters, the aircraft have recently been directed immediately on to a bearing to meet the bomber force. In III/N.J.G.4 at Mainz/Finthen, the whole of the Gruppe - an average effort of 25 aircraft - is usually airborne within 20 to 24 minutes, the first aircraft taking off within about 8 minutes of the first corning.

Weather Conditions.

13. The daily briefing of aircraft consists mainly of a summary of weather conditions for the ensuing night, and when the "Weather Frog" reports the prevalence of clouds, the main topic is the possibility of the degree of icing conditions, the worst enemy of the night fighter.

14. In the opinion of P/W, the Germans have never found a satisfactory de-icing system for the night fighters; the Me.110 is without de-icing equipment, whilst the Ju.88 is fitted with the "Kärcher Ofen" - a petrol-burning heater unit - which, however, is not efficient at high altitudes.

15. If a cloud layer is deep and dense, but without icing conditions, the night fighters will operate even if the cloud base at their own airfield is as low as 100 metres; after operations a landing can if necessary be made at another airfield where conditions are more favourable.

16. In considering the expedience of operating in icing conditions, the depth of the ice layer will be taken into consideration; it is possible that the night fighters may risk climbing steeply through an icing area, if it is not too thick, to operate at higher and clearer altitudes. If the bombers are penetrating below a cloud and ice layer, the night fighters will most certainly be sent up to intercept.

17. In this connection P/W were told of a recent Bomber Command attack on Essen, when cloud was at 10/10ths between 3,000 and 7,000 metres and when no German night fighters were put up. Each of these P/W immediately gave his opinion that the non-appearance of the night fighters was certainly due solely to icing conditions.

Navigation.

18. During recent weeks when the period of early warning has been considerably reduced, all crews of a Gruppe are given the same initial course before taking off; thus, once all aircraft of the Gruppe are airborne, they are strung out on one and the same track in a form of line ahead.

19. The crews fly by D.R., and the loose formation is simultaneously tracked on a map at Gruppe headquarters. If, in the light of the movements of the bomber force a change of course is necessary, a new bearing will be given to all aircraft simultaneously through the Gruppe commentary.

20. All crews are given strict orders to navigate by D.R., and to accept the Gruppe orders if these differ from their own calculations, so that the tracker at Gruppe headquarters can be reasonably certain that the night fighters are in fact where he believes them to be. The older crews, in spite of this order, are given to "cutting off corners" in the hope of making a quick interception; in such cases the Gruppe commentaries is obviously useless, and such crews must thereafter depend on the Divisional or Reich commentaries and fly free-lance patrol.

21. These crews who stick to their orders are finding D.R. navigation extremely difficult, since this duty falls on the W/T operator, who has his signals and Radar duties to attend at the same time. It is therefore unlikely that the initial formation will be maintained much longer than the completion of the first leg.

22. If this tactic works according to plan the string of night fighters should be brought up to the bomber stream on a parallel or nearly parallel track. At the correct moment, and in accordance with D.R. tracking at headquarters, the night fighters will be given a new bearing which turns the whole line on to the bomber stream in a broadside. By this method at least some of the night fighters must contact the bomber stream with the aid of their S.N.2 equipment.

23. According to P/W, navigation by the night fighters is at present of a low standard, particularly in cloudy weather when ground visual aids are not available. It is evident, however, that the Germans intend to continue operations on these lines, for in III/N.J.G.4. which is equipped with the Ju.88, the crew is to be augmented by a Navigator/W/T Operator, whilst the present W/T Operator will be solely responsible for the Radar equipment.

24. A few weeks ago several experienced observers from bomber units arrived at Finthen, and these men are at present being instructed in night fighting navigation. With the crew of four, the Radar operator will be placed next to the pilot and the Navigator/W/T Operator will sit to back to the pilot whilst the B/M will sit - or squat - in the remaining space.

Contacting the Bomber Stream.

25. It is perhaps worth noting that the pilot of III/N.J.G.4., who had made seven operations, had never succeeded in contacting the bomber stream, and the Gruppe itself had only claimed one victory since August 8th; that victory was when we attacked Darmstadt or Frankfurt in mid-September.

26. All P/W agreed that the only way to contact the bomber stream is to obey the Gruppe commentary until such indications as target markers, German night fighter flares, Flak and searchlight concentrations or aircraft going down in flames are seen. Unless the flares are spoof, the bombers will sooner or later be contacted by these means.

27. According to P/W, crews are wary of flares, as they have learnt that these may spoof target markers put down to draw unsuspecting night fighters into a Mosquito trap.

28. Providing that the S.N.2 is not too badly jammed by Window, the final contact by the night fighter is made by variations of height of about 1,000 or even 2,000 metres whilst making use of the search gear; this tactic usually commences at as much as 50 km. from the bomber formation, in the hope that a straggler may be picked up. Another reason for this change of height is that in recent raids the heights given by the commentary have been extremely inaccurate, and the height has frequently been corrected on suggestions from such night fighter crews as have made contact with the bombers.

29. The aim in theory is to intercept the bomber stream at its head; this is the only part of the stream of which the precise position is given in the commentary and crews do not, therefore, attempt any finesse regarding the point of entry into the stream. In the words of the present pilot: "We are damned glad to get into the stream, no matter how we do it".

30. Lectures are, of course, given to crews on how to avoid Window and tail warning devices, but P/W pointed out that under present conditions the theory of the lecture room is extremely difficult to put into practise, and a hit or miss method of entry is all that can be hoped for.

Attack.

31. The range at which the night fighter opens fire with its forward armament is determined by the pilot himself; whilst some will close in as near as 50/60 metres, the more cautious will open up at a range of 200/250 metres. P/W considered, however, that the normal range might be taken as 100/150 metres.

32. Recognition of the target aircraft is usually by the silhouette in light conditions or moonlight, and by the four exhaust flames in darkness.

33. The present P/W repeated the statement made by previous P/W, namely that the only effective evasive tactic for a bomber about to be attacked is a steep diving turn to port or starboard - preferably the latter - which is on the night fighter pilot's blind side.

34. These P/W could add nothing to previous comments on the Schräge Musik upward firing armament, but they stated that once this armament could be brought to bear it was extremely effective; one officer had claimed a kill with two rounds from the 20 mm. cannon.

35. They stated that the Ju.88 G-1 carried one drum of 50/60 rounds for each cannon; in that type of aircraft the drums cannot be charged in the air, but this quantity of ammunition is ample for one sortie.

36. In this connection, P/W had heard that some night fighters are now being armed with two 30 mm. upward firing cannon in place of the 20 mm.; with this new armament the barrels protrude 12" to 16" above the fuselage and at an angle of 85°.

Flak.

37. With two exceptions - orbiting areas and airfields where aircraft are taking off and landing - there are no restrictions imposed upon the Flak in any part of Germany. Night fighters which chase a contact through a Flak area, therefore, do so at some risk to themselves.

38. Old and experienced crews who flew in the days when the use of the FuGe 25a or Verey signals enabled them to quieten the Flak are unhappy about present day conditions, but P/W claim that younger crews who have never known any but these conditions are not particularly perturbed. P/W added that of course a night fighter would only enter a Flak area if it already had an S.N.2 contact; no night fighter would venture unnecessarily in such areas.

39. In orbiting areas, the night fighters will be given a ceiling of, say, 3,000 metres; any unidentified aircraft above that height will be fired on in spite of the night fighters below. The Flak units are usually informed of orbiting areas in advance by the Flak Liaison Officer attached to the night fighter unit.

40. Flak areas in the neighbourhood of airfields occupied by night fighters are forbidden to the aircraft when taking off or landing.

I.F.F.

41. For a considerable time there has been a popular belief amongst night fighter crews that the R.A.F. is homing on to FuGe 25a transmissions, and crews of II/N.J.G.1 and III/N.J.G.4, including the present P/W, were no exception.

42. It is difficult to understand how the belief has arisen, since crews were officially told that the R.A.F. has no equipment with which to home on to the FuGe 25a, and orders are that the apparatus must be kept on at all times during flight.

43. In spite of these orders many crews are still switching off their FuGe 25a during sorties, and when on one occasion one of the present crews was shot down by Flak, they had the instrument turned off at the time. At the subsequent enquiry one of the first questions asked concerned the FuGe 25a, but the crew, fearing punishment, maintained that it had been switched on all the time.

44. In addition to the fear that R.A.F. aircraft can home on to FuGe 25a, night fighter crews, including these P/W, have serious doubts as to its efficiency as an I.F.F. instrument.

45. On one of their earlier operations one of these crews was shot at by Flak in spite of the FuGe 25a being turned on, and almost immediately after the W/T operator switched it off the Flak stopped firing. Other crews in both units have repeatedly been fired on both with the FuGe 25a on and off, with the result that the majority has come to the conclusion that as far as the Flak is concerned it does not matter whether the FuGe 25a is used or not and that it is therefore better to leave it off and enjoy the added advantage of not being homed at by R.A.F. aircraft.

SIGNALS TRAFFIC.

Gruppe Commentary.

46. The Gruppe commentary of both units reviewed was put out on the 3000/6000 Kc/s. frequency band and was received by the aircraft on the FuGe 10-P. In III/N.J.G.4 there were usually one main and two alternative frequencies; until quite recently it was usually found that the main frequency was not jammed.

47. The W/T operator of I/N.J.G.1 stated that on such occasions as the Gruppe R/T commentary was jammed he could call his control with the codeword "Schwingen sie Hammer", whereupon the commentary continued in Morse on the same frequency; in this way W/T operators could often hear the Morse Commentary through the jamming.

48. The Gruppe commentary was put out by II/N.J.G.1 from a mobile van equipped with FuGe 10 and FuGe 16 with the addition, P/W thought, of an amplifier. The FuGe 16 was however, more often than not u/s, and the airfield transmitter was used when starting and homing.

49. In III/N.J.G.4 there was also a mobile van, but in P/W's experience this was never used and the airfield transmitter was the source of the commentary put out by that Gruppe.

50. Up to the beginning of October 1944 the two units under review, although suffering considerable inconvenience from British jamming of their channels of R/T and W/T control, were able to circumvent the jamming fairly successfully by the employment of large numbers of alternative frequencies and differing sources of control.

51. On the night of October 2nd and 3rd, however, the R/T operator of II/N.J.G.1 found that the whole of the medium frequency band of the FuGe 10 was jammed, as was the whole of the V.H.F. frequency band. After some ten minutes of trying to pick up the Gruppe, Divisional and other commentaries, he switched over to the M/F band and picked up the commentary on one of the Reichluftflotte beacons.

52. Upon returning from this sortie, this W/T operator found that the eleven other crews of the Gruppe who had operated on that night had experienced the same difficulty, and the Gruppe Signals officer thereupon demanded a written report from each W/T operator.

53. The jamming noise on both the 5000/6000 Kc/s. and the 38.4/42.5 Mc/s. bands was described by P/W as sounding rather like a kettle boiling, with the lid rattling in a high pitched tone.

54. Instructions in Morse on the 5000/6000 Kc/s. band can be heard through the jamming when the aircraft is over or near its ground control, and for this reason III/N.J.G.4, which has only operated recently within an area of 150 km. of its base at Mainz/Finthen, has not been troubled to such an extent as II/N.J.G.1, which has been operating much further afield from its control at Köln/Ostheim.

55. W/T operators of that Gruppe have found the FuGe 16 useless, because within two or three minutes of the first words being spoken in an operation, the whole frequency band is jammed; in many aircraft, therefore, the FuGe 16 is no longer carried as being useless extra weight.

56. The whole M/F band was also jammed with a high pitched whistle, but these P/W claimed that they could still hear the Reichluftflotte beacons. They stated that the latter beacon commentaries were now the only real source of control left to the night fighters, and that once these had been effectively jammed, the whole signals system would completely break down.

Beacon Commentaries.

57. The Reichluftflotte W/T beacons in Central and West Germany - those with names - only operate, according to P/W, during British night attacks. These beacons transmit the Reich commentary in Morse in the following sequence:-

- (1) Dash - for D/F'ing
- (2) Beacon characteristic.
- (3) Letter C - called the Trennung, separating signal.
- (4) Commentary:

- (a) A single figure denoting height of head

58. Early in October, W/T operators were told that one of these beacons in each Jagd Division was to transmit instructions to the aircraft under its control in a special code, in addition to the normal Reich commentary. Thus, for example, if a bomber stream were flying towards Hannover and part of the force detached itself on a southerly course, Jagd Division 3 would call in the night fighters under its control through the medium of this beacon to deal with the new situation.

59. In case of all R/T and W/T channels being jammed or otherwise disturbed, homing instructions to the aircraft were also transmitted through this medium.

60. The code for these beacons was changed at the same time as the Funk Befehl (Tactical W/T Code), which on an average was about once a week. This beacon code consisted of single letters some of which with their meanings one of the present P/W was able to remember:-

C = Zurückkehren (Return).

B = Fliegen Sie nach 649 (Fly to 649)
649 The code number is that of an airfield.

MOS = Mosquito attack; when aircraft of
631 Ju.88 and ME.110 units hear this,
they return to base, or they may
be ordered to land at the nearest
airfield.

AGZ = Angriffsziel 631 (Target 631). The
number in this case is that of
Darmstadt airfield, meaning that
Darmstadt is the target of the
bombers.

61. Another single letter, which P/W could not remember, signified "Tune in to frequency of Jagd Division 1". Upon receiving this instruction, the W/T operators would first try the short wave frequency of J.D.1 and, if unable to receive the latter, would go over to the frequency of the high powered beacon of that Division.

62. This contingency would occur when there was no bomber penetration in the territory of Jagd Division 3, and when an attack was taking place over the territory of J.D.1. The W/T operators of units of the 3rd Division would remain tuned in to the last Division beacon until ordered to revert to their own divisional beacon.

63. In Mosquito attacks when these are recognised as such, no commentary is broadcast by the beacons.

64. The beacon used for the 3rd Division's code instructions was Kurfürst, and up to October 6th this beacon had not been disturbed, neither had its position been moved; P/W had been told, however, that it was shortly to be moved further East.

65. The beacon Ida has, according to P/W, been moved from its former position to a point S.S.E. of the visual beacon Ida, and now stands

approximately at pinpoint 50° 30' N., 7° 45' E.; the beacon Kuli since being overrun by Allied advance, has not been replaced.

66. Spoof R/T instructions have a limited success amongst the less experienced W/T operators, but those operators soon learn by experience to recognise a strange voice almost immediately; since the complete jamming of R/T from early October, however, this question hardly arises, at least in Western Germany.

COUNTERMEASURES AGAINST S.N.2.

Window.

67. The present P/W confirmed the effectiveness of Window counter-measures against the S.N.2 search equipment. Operators are now being told that Window is completely effective if the night fighter is at a range of more than 2,000 metres from a target aircraft; at ranges of less than 2,000 metres a skilled operator can distinguish between the Window blips and that of the bomber.

68. The theory is that the night fighter closes in on the Window at a higher speed than on the bomber, and that the Window blips would therefore travel quickly down the S.N.2 display, whilst the aircraft blip would remain more or less stationary. These P/W, however, were of the opinion that an operator would have to be gifted with a high degree of skill to be able to follow these suggestions, unless, of course, the Window cloud was not too dense.

69. They stated that if Window were only thrown by the bombers, it would be comparatively easy to home on to the Window cloud and thus find the bomber stream, but since the high-flying Mosquitoes had also taken to throwing Window the night fighters could no longer depend on finding the bombers by that method.

70. Thus, in the present circumstances in which Window clouds are widely spread and do not necessarily indicate the presence of the bomber stream, it is extremely difficult, if not impossible, to home on to the bomber stream with S.N.2. alone when Window is present; night fighter crews are, therefore, depending more and more upon the visual indications described earlier in this report.

71. One P/W stated that with the S.N.2 jammed by Window, it frequently happened that a crew would only know that they were in the bomber stream from the air disturbance caused by the slipstreams of the bombers.

72. The question has been asked whether it is likely that as a result of jamming of the S.N.2, the Lichtenstein will be re-introduced to the night fighter units. This has not so far occurred in II/N.J.G.1 and III/N.J.G.4 and these P/W thought it highly unlikely, since the Lichtenstein had in the past been just as thoroughly jammed as is the S.N.2 now.

Electrical Jamming.

73. The Germans are firmly convinced that the R.A.F. is jamming the S.N.2 electrically. One of the present P/W had himself experienced what

he thought to be such jamming, and had reported this on his return; he was told that it was caused by a "Rauschsender" (Noise Jammer).

74. The other W/T operator had also been told the same story early this year, but he then understood that the effect of the jamming on the display was inconsiderable. In August, this P/W was told officially that it was possible to home, albeit inaccurately, on to the jammer aircraft by switching off the S.N.2 transmitter circuit and using the receiver only.

75. The jamming produced "grass" on both sides of the trace of both the range and bearing tubes, and he was told that the "grass" extended above or below and to left or right of the trace, according to the range and bearing of the jamming aircraft.

76. On the night of October 7th, this P/W experienced a similar display on the S.N.2, and made an attempt to home on to what he thought to be the jamming aircraft, but without any result.

MUTUAL INTERFERENCE OF S.N.2's.

77. The S.N.2 of one night fighter will interfere with reception in another if the two aircrafts are within S.N.2 range of one another. The disturbance takes the form in the S.N.2 display of continuous wiggling lines on both height and range tubes; for this reason an eliminator circuit has been installed, controlled by a knob in the bottom left-hand corner of the S.N.2. panel, and W/T operators have instructions to make use of this knob if interference occurs.

78. According to these P/W, it is generally accepted that the eliminator makes not the slightest difference; neither of these two W/T operators had themselves used it.

79. It was stated that, providing there are not more than two other aircraft using the S.N.2 within S.N.2 range of a given night fighter, the aircraft blip can be read through the disturbance on the display, but within a range of 2,000 metres, even the interference produced on the display by one other S.N.2 night fighter is such that the aircraft blip is extremely difficult to see.

80. As an example of mutual interference, the W/T operator of II/N.J.G.1 had heard that about two months ago 40 to 50 night fighters equipped with S.N.2 were sent to intercept some bombers over the Ruhr. The S.N.2's of the night fighters interfered with one another to such an extent that not a single contact was made. P/W himself had not taken part in this operation, but was told about it on the following day.

NAXOS.

A Lecture on Naxos.

81. Early in 1944, one the present P/W attended a lecture given to I/N.J.G.4 at Florennes by an officer from Werneuchen. The lecture was accompanied by a film, which showed the development of the Naxos display as the aircraft closed in on its H2S target.

82. The lecturer claimed to have made the film himself under operational conditions, and furthermore claimed to have shot down two H2S aircraft with the sole aid of Naxos; it was emphasised that, although the aircraft carried S.N.2 in addition to Naxos, the former was switched off throughout the flight.

83. The film showed the Naxos display initially with two spots of light when the first contact was made at a range of 70 km. As the Naxos aircraft closed in, the spots multiplied and spread round the circular traces of the tube; the circle was completed when the aircraft was directly below the H2S aircraft and at a range of 50 metres.

84. The lecturer was most enthusiastic as to the possibilities of the Naxos and foretold that it would displace all other night fighter aids in attacking H2S aircraft.

85. The type of Naxos shown in the film was the "Z", and the lecturer mentioned two newer and improved types known as the "Naxos-Post" and another which P/W had forgotten.

Equipment in I/N.J.G.4.

86. In April 1944, two of the present P/W were at Werneuchen, where for about a month they carried out flight tests on Ju.88's equipped variously with Naxos, S.N.2 and Flensburg. Of 20/24 aircraft which P/W tested in that time, about 16 or 18, equipped with both Naxos and S.N.2, were delivered to I/N.J.G.4; the aircraft which had no Naxos had both S.N.2 and Flensburg.

Equipment in II/N.J.G.1 and III/N.J.G.4.

87. It has already been reported that II/N.J.G.1 is equipped throughout with the Me.110, with the exception of one Ju.88 G-1 in the Gruppenstab; this latter aircraft was equipped with the Naxos, but had been u/s since early September.

38. Crews were told that the Me.110 was slow enough without having its speed further reduced by the Naxos, but they were nevertheless led to believe that their Gruppe was soon to be equipped with the Ju.88 in order that Naxos might be employed. Up to the 6th October there was no sign of the Ju.88's.

89. In III/N.J.G.4 some of the Ju.88's had begun to be sent some weeks ago to, P/W thought, Werneuchen to have Naxos installed. On October 4th or 5th, at least one of these aircraft had been returned to Finthen equipped with Naxos.

Leader Aircraft.

90. When, up to mid-August, II/N.J.G.1 was based at Deelen, the Naxos-equipped aircraft flown by the Gruppenkommandeur was employed as a shadowing aircraft to home on to H2S transmissions of incoming bombers and to report their position and composition to the Gruppe.

91. This shadowing aircraft was known as the Führer (Leader), or sometimes the Aufklärer, (Reconnaissance), and at the first indications

of an R.A.F. attack it took off early - before the remainder of the Gruppe - and made contact with and flew with the bomber stream.

93. The Division in turn passed such information as was necessary to the night fighter Gruppen under its control, and this information was received by the latter on the Tannoy system.

94. When the night fighters took off to intercept the bombers, the information from the leader aircraft was put out in the form of a Gruppe commentary; the night fighters could not communicate with the leader aircraft. P/W did not know if the ordinary commentary was ignored and all dispositions were made solely on the basis of the shadowing aircraft's reports, or if other sources of information were used simultaneously as a basis for the Gruppe commentary; he rather inclined to the former.

95. Reports by the leader aircraft continued during a raid and included details such as flares laid, Flak being encountered, and any aircraft shot down in flames.

96. Once the interception force had been led to the bomber stream with the help of the leader aircraft, the latter dropped flares of varying combinations of colours to mark any turning points of the bomber stream, at the same time informing the Divisional headquarters. The night fighters were simultaneously ordered by their ground control to fly on to the flares, or to fly on a specific bearing from these flares.

97. The pilot from III/N.J.G.4 believed that in some units the jammer aircraft communicate direct with the night fighters under their control, and issue vectoring orders to them. In all cases however, once the night fighters have been brought up to the bomber stream, the leader aircraft is informed by the Division, and thereafter it assumes the function of an ordinary night fighter.

Night Fighter Flares.

98. These P/W had heard that the Führer aircraft procedure was falling into disrepute, because on occasions considerable time had been lost between take-off of the leader aircraft and that of the remainder of the night fighters, so that in consequence the night fighters had frequently failed to contact the bombers.

99. This story is perhaps strengthened by the fact that more recently, at least in III/N.J.G.4, all Ju.88's have been carrying three or four flares on each sortie. When a night fighter makes contact with the bombers, three flares are dropped in or near the bomber stream as a signal for other night fighters that the bombers have been contacted; the flares indicate the position of the stream.

100. Until early in October these flares were always composite white-red-white, each colour burning for one minute in a varying sequence which was changed from night to night. Just recently, however, crews have been told that new colour combinations of red, white, yellow and green would shortly be coming into use.

Single-engined Fighters with Naxos.

101. Whilst at Werneuchen one of these P/W saw Me 109's and F.W. 190's - which they heard were destined for a "Wilde Sau" unit - equipped with Naxos. In the F.W. 190 the Naxos dome was fixed to the after part of the sliding part of the cockpit cover. P/W could give no further information and had not noticed how the aerial array was mounted, but he was certain that the dome moved back with the cockpit cover.

FLensburg.

102. Neither II/N.J.G.1 nor III/N.J.G.4 have any aircraft equipped with Flensburg, but during the first week of October two new Ju.88 with both Flensburg and S.N.2 were delivered to the 7th Staffel. P/W did not know the reason for this delivery, and he had understood that the Flensburg had fallen out of use.

REACTIONS TO MOSQUITO INCURSIONS.

103. The R.A.F. Mosquito incursions are giving the Germans cause for some serious thought and, according to P/W, much inconvenience and disturbance is being caused both by the intruders and the small attacking forces.

104. Intruders over airfields are, of course, a considerable cause of disturbance, and it is very seldom that a night fighter crew can land on its base in peace. Added to this, there is always a sense of uneasiness amongst crews during sorties, with the result that their efficiency is much impaired.

105. One of the present P/W - the pilot - went so far as to say that he would shoot at any twin-engine aircraft without waiting for a recognition of type, which is strictly against the present rules.

106. The same P/W was of the opinion that at present it is often impossible for the ground warning system to establish whether a penetrating force is composed of Mosquitoes or heavy bombers, and that as a result the night fighters must be put up, if only as a precaution, until such a time as the true composition and intentions of the force are established.

107. When a penetration force has been identified as a Mosquito formation, the Me.110 and Ju.88 night fighters are not put in the air, and the Reichluftflotte W/T beacons do not transmit a commentary. It was suggested by P/W, however, that He.219's were being-put up to intercept Mosquitoes.

108. It has often happened recently that night fighter units have been put in the air to intercept large four-engined bomber formations which have only later been identified as smaller Mosquito formations. This has resulted in much waste of effort, to say nothing of petrol, since the night fighters were recalled as soon as the attacking force was identified.

109. In a recent lecture to III/N.J.G.4, crews were told that a small formation of Mosquitoes could with the help of a special apparatus and a low speed, lead the Germans to believe that a large formation of four-

engined bombers was underway; crews were given no details of this special apparatus.

110. It is interesting that of the seven operations which the W/T operator of II/N.J.G.1 had made, no fewer than three were false calls caused by Mosquitoes. In these sorties the crews had been sent up to intercept four-engined aircraft, and after having been airborne for 1 to 1¹/₂ hours they had been called back to base and told that the supposed heavy bomber force was only a Mosquito formation. The W/T operator of I/N.J.G.4 had made six operations, and of those two were similarly false calls for Mosquitoes, on which the night fighters had been recalled after having been airborne for 3/4 - 1 hour.

111. On one occasion early in October, on the other hand, the aircraft of II/N.J.G.1, at that time based at Düsseldorf, had been stood down after an early warning of a "Mosquito penetration". Soon afterwards, however, cascades of flares were seen falling near the airfield and it was thought that the airfield itself was about to be attacked.

112. The attack was, in fact, on München/Gladbach, and Oberleutnant LAU thereupon took off alone at about 2300 hours. That officer shot down two four-engined bombers and landed again after having been airborne for 22 minutes.

113. The two W/T operators amongst these P/W were sufficiently co-operative to compile diaries of the sorties which they had made; although naturally they could not remember dates with any degree of reliability, their notes include an indication of the inconvenience and waste of ill-spared fuel of which the Mosquito incursions are the cause.

5/N.J.G.1.

114. (1) On 27th August, 1944. Took off from Deelen at about 2230 hours. This crew was ordered to fly direct to the W/T beacon Quelle, because, it was said, a bomber force approaching the Weser estuary from the North Sea was likely to fly to the Hanover/Brunswick area.

This aircraft, about the fifth to take off from Deelen, flew for a time on D.R. whilst the W/T operator listened to the Gruppe commentary. He then switched over to the W/T beacon and used that commentary.

The pilot made a left-hand turn and at the same time heard on the beacon commentary that the bombers were heading for Hannover. By this time, however, petrol was running low and the crew decided to break off; they landed in Oldenburg.

The S.N.2 was u/s from time of take-off.

This crew only learned afterwards that they had been directed by the Gruppe commentary to fly to Mannheim, where an attack was taking place, but since by the time the Mannheim attack had been identified they had switched over to the beacon commentary, they had not heard this order to the Gruppe.

During the afternoon of the day following these raids, an operations officer of Jagd Division 3, Hauptmann KNICKMEIER, came to Deelen and gave all the crews a talk on the raid of the previous night. He told them that the night fighter sortie had been a failure because as soon as he knew that Bomber Command were making two penetrations he had ordered all aircraft of II/N.J.G.1 to break off from the more northerly penetration and to make for the other bomber stream going for Mannheim.

This, he stated, had led to some confusion and, therefore, in the future the night fighters would be allowed to continue to fly according to their first orders, and no attempt would be made to divert them to intercept any subsequent attack.

- (2) Early September. Took off from Düsseldorf at 2225 hours. Objective Stettin - Kiel. Commentary gave false direction of penetration as Weimar. No interception. Landed at Jüterbog.
- (3) Mid-September. Took off from Deelen at 2350 hours. Mosquito attack. Landed at Deelen after $1\frac{1}{2}$ hours.
- (4) Mid-September. Took off from Deelen about 2300 hours. Mosquito attack. Landed at Deelen.
- (5) End September. Took off from Düsseldorf about 2230 hours. Mosquito attack. Ordered to W/T beacon Christa. Landed at Mainz/Finthen. S.N.2 mutual disturbance.
- (6) October 2nd or 3rd. Took off from Düsseldorf at about 2230 hours. Heavy bomber penetration with München-Gladbach as objective. S.N.2 contacts near Münster. Enemy aircraft bombed through gaps in cloud from 4,200 metres. Commentary gave false height. Saw four 4-engined aircraft, but could not close in because they disappeared into cloud. White, red and green cascade flares. Heavy Flak; several aircraft seen going down. Landed at Gütersloh after $2\frac{1}{2}$ hours.
- (7) See A.D.I.(K) 365/1944.

7/N.J.G.4.

115. (1) August 7th or 8th. Airborne landings in Seine Estuary. Took off at about 2300 hours. No contacts; ordered to return after $1\frac{1}{2}$ hours.
- (2) August 9th. Ordered to W/T beacon Mücke, shot down by own Flak and bailed out over Nassolt.
- (3) End August; Took off from Twente. Mosquito attack.
- (4) Mid-September. Took off from Mainz/Finthen at 2300 hours. Flares at Frankfurt or Darmstadt - apparently Mosquitoes. Ordered to land after $1\frac{1}{2}$ hours. No contacts.

- (5) About September 20th. Took off at about 2200 hours. Bombing in Frankfurt area. Saw 4-engined aircraft on opposite track held by searchlights, but did not go after it as it was at a greater height. Window upset S.N.2.
- (6) October 6th. Took off from Finthen at about 2000 hours in direction of Kaiserslautern. S.N.2 electrically jammed; tried to home on jammer without success. Got lost and shot down by U.S. Flak.

Ground Attack.

116. At the closing stages of the French campaign some of the night fighter units, including II/N.J.G.1 and III/N.J.G.4, were given the extra duties of attacking ground targets with their forward armament - duties which proved both expensive in aircraft and unpopular with the crews.

117. Since their return to Germany, neither of these two units had attacked ground targets, but on the night of October 6th an order was re-introduced into II/N.J.G.1 to attack ground targets if any suitable objectives were seen.

A.D.I.(K)
2nd November, 1944.

S.D.Felkin,
Wing Commander.