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G.A.F. SIGNALS INTELLIGENCE IN THE WAR - IX

Norway and the Northern Convoy Routes.

1. In this series dealing with various aspects of the G.A.F. Signals Intelligence service in the war, it had been intended to conclude with the eighth report. Since the issue of the first report, however, another P/W has become available who had a comprehensive knowledge of signals activities in the Norwegian area throughout the war. It has therefore been found possible to add the present report, the ninth and final in the series.

2. The gradual expansion of signals intelligence based in Norway, and the Allied activities which it covered, are followed in this account from year to year from the time of the invasion of Norway onwards. In order that ready comparisons of the extent of that expansion may be made each year is dealt with separately, and maps showing the situation at various intervals during the war are appended.

1940.

NUCLEUS OF THE ORGANISATION.

3. Soon after the invasion of Norway in May 1940, signals intelligence personnel from W-22 at Husum were formed into a new unit and sent to operate at Oslo. This new unit was named W-Leit 5 and, subordinated to the Höherer Nafü of Luftflotte 5, formed the nucleus of the projected signals intelligence service in Norway; its initial strength was that of a Trupp, but by the autumn was to be increased to a Zug (platoon).

4. The function of W-Leit 5 was to act as the central organisation in Norway for the comprehensive monitoring and evaluation of all enemy R/T and W/T traffic in the North Sea area, and the watching of R.A.F. Coastal Command operations against the West coast of Norway. Information was to be passed to the higher signals intelligence authorities in Germany, who in return fed W-Leit 5 with such data on Bomber Command radio traffic as was of value to the Norwegian area. The unit did not itself undertake interception work, but confined its activity to organising the various intercept units and evaluating their results.

5. The first intercept unit, W-25, was set up at Trondheim, Skatval at the end of May with the strength of a Trupp, and also operated a H/F Adcock D/F set on Örlandet. This unit covered W/T traffic of 18 Group Coastal Command and W/T and R/T traffic from aircraft carriers, its intercept results being passed to W-Leit 5 at Oslo.

6. At the same time, W-25 was to make a local evaluation of its intercepted signals and pass the results to a specially appointed signals intelligence officer attached to Fliegerkorps X, so that the latter could amplify its air situation picture. Actually the greater part of the material passed by W-25 to the Fliegerkorps consisted of intercepts from reconnaissance aircraft of 18 Group.

7. At the end of August, W-25 was moved from Skatval to Stavanger, partly owing to the concentration of 18 Group's attention to that part of Norway and partly in order to be near Fliegerkorps X headquarters, which had meanwhile moved to Stavanger.

8. At the beginning of July another intercept Kompanie, 9/Ln. Regt. 2, had moved into Norway and had been put into operation at Naerland, near Stavanger. This unit employed an Adcock D/F station, whilst rhomboid intercept installations were planned and partly constructed during the latter part of the summer.

9. 9/Ln. Regt. 2 was to intercept the W/T traffic of 15 and 18 Groups and the H.F. R/T traffic of the fighters operating in the North of the U.K.; parallel with W-25 at Stavanger, this unit was to pass its intercept results to W-Leit 5 at Oslo and at the same time to make a local evaluation for the benefit of Fliegerkorps X.

10. In October the Signals Intelligence service in Norway began to take shape with the formation of an Abteilung, III/Ln. Regt. 5, subordinated to the Höhere Nafü of Luftflotte 5 both operationally and in its organisation. In December, 9/Ln. Regt. 2 at Naerland was renamed 9/Ln. Regt. 5.

11. The listening chain was completed by the subordination of W-22 at Husum (Schleswig Holstein) to III/Ln. Regt. 5. The duties of W-22 were essentially the same as those of W-25 and 9/Ln. Regt. 5, namely to feed W-Leit 5 with the results of its observations.

12. Owing to the lack of adequate D/F equipment in Norway at this time, and in order to ensure a full cover of Coastal Command operations, Husum also had to monitor 15 and 18 Group traffic. In addition, it shared with 9/Ln. Regt. 5 the task of covering the schools and ground networks of Coastal Command.

13. Once the full interception equipment of 9/Ln. Regt. 5 had come into operation at Naerland, W-Leit 5 was able to fulfil its primary tasks of controlling the coverage of the intercept station, evaluating the intercept results collected from the

outstations by teleprinter tie-lines and distributing the resulting intelligence to all interested commands and units.

14. A situation report compiled from current messages and documents was produced each day, and every fourteen days a consolidated report was issued containing the more long term intelligence on strength and locations of enemy units, types of aircraft and tactics, and the identities of units being employed on specific operations.

15. Thus, from the late summer of 1940 onwards, intercepts of great value to G.A.F. reconnaissance units were regularly passed to the Operations Staff of Luftflotte 5. All important intelligence was immediately sent to Abteilung I of O.K.L.

INTERCEPT ACTIVITIES.

16. Observation of 15 Group radio traffic was essential for providing the G.A.F. reconnaissance and coastal units with a picture of the air situation in that Group's sphere of operations. The watch on 18 Group by W-25 and 9/Ln. Regt 5 aimed at keeping a check on its strength and dispositions.

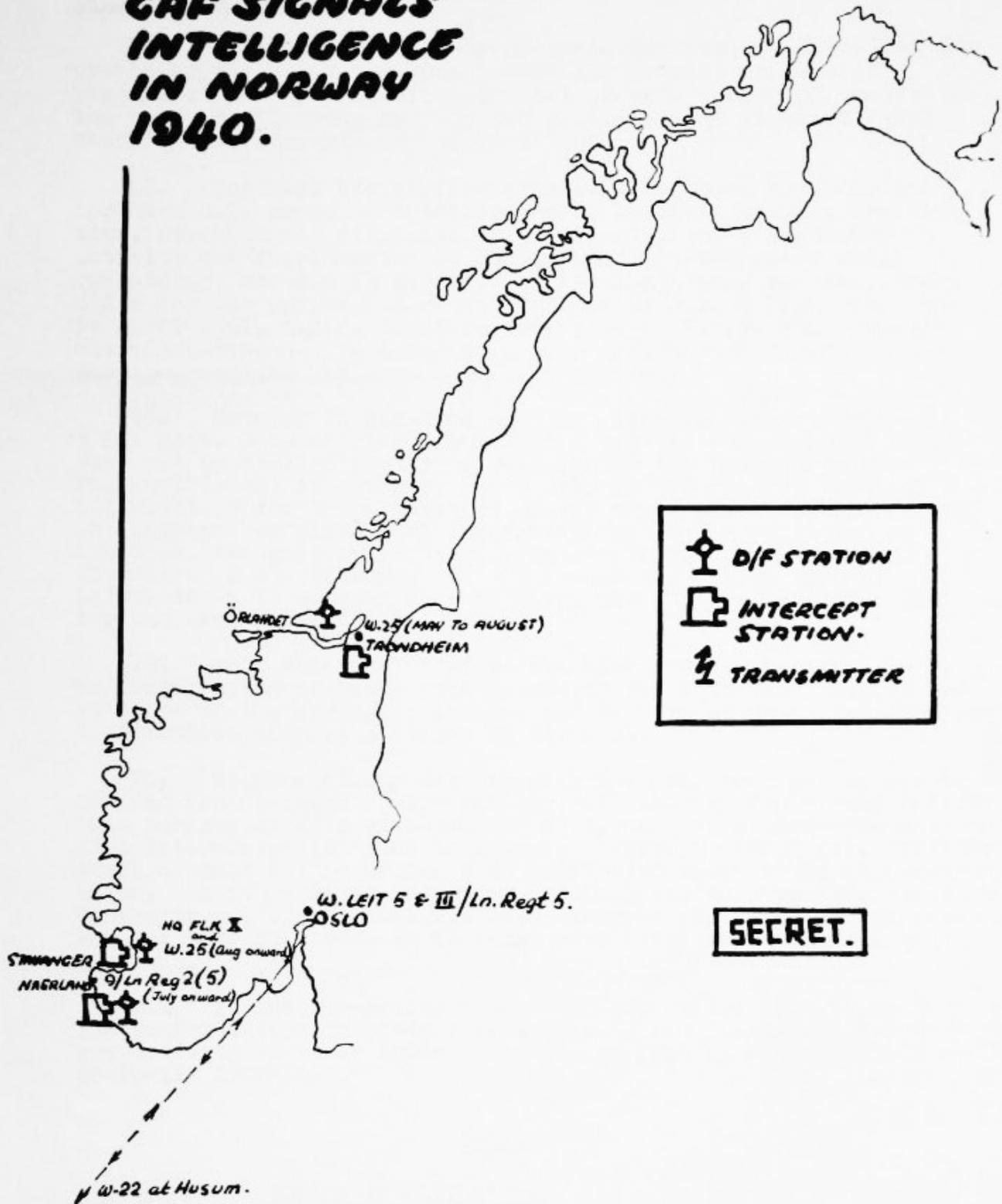
17. The H.F. R/T traffic of R.A.F. fighters based in the northern U.K. produced intelligence on defence tactics, organisation, strength and dispositions. This particular listening activity was supplemented by the D-Funker (interpreter radio operators), carried in aircraft of the long-range reconnaissance units for the purpose of evading attack by Allied fighters. When in April 1941, R.A.F. fighters converted to V.H.F. this practice was discontinued. In the late autumn of 1940 the O.T.U.'s in Scotland and the Midlands were also covered.

18. Beacons in Scotland and the Midlands were covered by 9/Ln. Regt. 5 at Naerland from 1940 until the end of 1943. This work was controlled partly by W-10 (later the Leitstelle der Funkaufklärung) in Germany and partly by the Höherer Nafü of Luftflotte 5 for the benefit of G.A.F. units operating from Norway. The Kompanie supplied such information as it had collected on location, recognition signals, signals strength and method of operation of the beacons, and was frequently called upon by Luftflotte 5 to suggest uses to which such beacons could be put for the benefit of the G.A.F.

19. Meteorological traffic was also covered by 9/Ln. Regt. 5, and intercepted messages were passed to the interested G.A.F. Met. stations in the Norwegian theatre and to W-22 at Husum for further distribution amongst stations in Germany.

20. Responsibility for breaking the Syko messages of Coastal Command reconnaissance aircraft lay with W-22 at Husum, and for this purpose traffic of 16 and 19 Groups and other networks were also intercepted in order to increase cryptographic depth. This traffic could not be broken with sufficient speed to be of tactical value, but it provided long-term intelligence on types, squadrons, dispositions, operational methods, distress signals and

GAF SIGNALS INTELLIGENCE IN NORWAY 1940.



SECRET.

accidents. Results were forwarded in collated form to interested units on day plus one.

21. In the succeeding years W-22 was called upon to an increasing extent to cover various R.A.F. and U.S.A.A.F. formations. The breaking of other types of codes and cyphers was undertaken centrally by W-10.

1941.

EXPANSION OF SIGNALS INTELLIGENT.

22. In April 1941 R.A.F. fighter units in the North of England discontinued the use of H.F. R/T and converted to V.H.F., thus robbing German signals intelligence of a fruitful source of intelligence. From early summer, therefore, arrangements were made to experiment on the West coast of Norway with V.H.F. receivers and various types of aerial arrays; in the autumn V.H.F. experimental flights were carried out in the direction of the East Coast of Scotland with an aircraft specially provided by O.K.L., but results were disappointing.

23. By the summer, intercept equipment in use in Norway comprised 1 L.F. and 3 H.F. Adcocks as well as 5 intercept rhomboid installations. The function of the latter was to D/F ground transmissions with low signal strength, as well as the traffic of 15 or 18 Group aircraft operating at extreme ranges from the intercept stations.

24. The three H.F. Adcock stations were employed respectively for 15 Group, 18 Group and other radio traffic from unknown ground stations; the L.F. Adcock covered Coastal Command reconnaissance traffic, beacons and all other traffic from unknown ground stations.

25. In the autumn another radio interception Trupp, Wo-Hammerfest, commenced operations. This unit was to test reception conditions in northern latitudes for the purpose of covering bases in Iceland and the traffic of Allied long-range reconnaissance aircraft. The unit met with many difficulties, amongst which were the extreme remoteness of the unit and consequently poor communications and lack of D/F equipment. Reception conditions proved unreliable on account of atmospheric conditions. By the end of 1941 no solid results had been achieved.

26. In the meantime the organisation of signal intelligence in Norway was being developed. A signals intelligence officer was attached to the operations staff of Luftflotte 5; by the end of the year all signals intelligence units in Norway were subordinated to the Höherer Nafü Luftflotte 5, and all came under the administrative command of Ln. Regt. 5.

27. During this year the channels of communication of W-Leit 5 at Oslo were improved and at the close of the year comprised teleprinter lines to Berlin, Husum, Naerland, the G.A.F.

exchange at Oslo and between Naerland and Husum. Direct telephone lines were also installed to Luftgau Norway and the Naval Command at Oslo.

1942.

D/F BASE ATLANTIC.

28. The most notable development in signals intelligence in Norway during 1942 was the establishment in the summer and the preliminary organisation of a chain of intercept stations, known as D/F Base Atlantic, for the covering of Atlantic signals traffic. This chain was to comprise stations at Bodö, Örlandet, Naerland, Husum (Germany) and Brest, with Naerland as the central point.

29. The D/F Base Atlantic did not begin operations as an entity until the early summer of 1943, but its main functions were to supply an increased number of plots on 15 Group aircraft on convoy escort, and to watch the anti U-boat flying boats.

V.H.F. TRAFFIC.

30. The experiments in V.H.F. interception begun during 1941 were continued but with little success. Various types of antennae were tried at different locations, and the special aircraft continued spasmodic flights towards the East Coast of Scotland, mainly to test antennae and to check up on new kinds of transmissions.

CONVOY TRAFFIC.

31. During the autumn it was decided that the interception Trupp, Wo-Hammerfest, was serving no useful purpose.

32. The interception Trupp established at Hammerfest during 1941 had supplied useful data on reception conditions in Northern Norway, but as far as operational results were concerned, no useful purpose was being served and the unit was withdrawn. Shortly afterwards, however, another similar unit began to operate at Svanvik.

33. Conditions for operation at Svanvik were found to be more favourable than at Hammerfest, besides which, the former station was provided with a D/F Adcock, and during the autumn the Trupp was busy with traffic from the two Allied convoys, P.Q.18 and 19.

34. From this traffic two main facts were elicited. The first was that some of the flying boats had transferred from Sollum Voe to Murmansk, whence they were flying anti U-Boat patrols. The second new fact was that the R/T traffic from land-based or escort carrier fighters could be intercepted and D/F'd.; in this way additional data to those from normal reconnaissance sources could be supplied to supplement the air situation picture.

35. Signals intelligence was particularly valuable in providing security to German naval forces passing along the Norwegian coasts.

CHANGES IN ORGANISATION.

36. In the autumn another intercept Kompanie, the 8th, was added to III/Ln. Regt. 5.

37. Training of its new personnel began towards the end of the year, and its eventual duties were to man the D/F Base Atlantic in Norway, to monitor Allied North Sea convoys and to watch for new British and Russian traffic on the northern front.

38. At the end of the year W-Leit 5 at Oslo was renamed 14/Ln. Regt. 5, whilst W-22 at Husum became 15/Ln. Regt. 2.

39. Communications facilities of 14/Ln. Regt. 5 were further increased during 1942, and at the end of the year consisted of the following:-

- 1 Teleprinter line to Gefechtsstab of Luftflotten Kdo. 5.
- 1 Teleprinter line to G.A.F. exchange, Oslo.
- 1 Teleprinter line to Naerland.
- 1 Teleprinter line to Husum.
- 1 Teleprinter line to Berlin.
- 1 Teleprinter line from Naerland to Husum.
- 1 Telephone line to G.A.F. exchange, Oslo.
- 1 Telephone line to Ln. Regt. 5.

40. The teleprinter line between Naerland and Husum which had been established in 1941 was used on occasions for D/F squad traffic, but as the same line had to be used for all other purposes this was not entirely satisfactory.

1943.

8/LN. REGT. 5.

41. The training and expansion of 8/Ln. Regt. 5 continued until the spring, when the 3rd Zug was ready for operations and was sent to Svanvik. Two D/F Adcocks were constructed so that both East and West D/F'ing could be carried on simultaneously.

42. An advance Trupp of the 8th Kompanie was sent to investigate the terrain in the Alta-Bardufoss area with a view of determining a final position for intercept operations. Bardufoss was found suitable so far as convenience and communications were concerned, and two Züge of the Kompanie soon followed.

43. Intercept Trupps of 8/Ln. Regt. 5, with D/F sets at Svanvik, Bodö and Örlandet, were put to covering all Allied W/T and R/T traffic in the North Sea and from Iceland Base and North Sea convoys. The Kompanie was also commissioned by W-10 to intercept all U.S. traffic, the results of which were to be transmitted to W-10 direct and without preliminary evaluation.

44. At times the Kompanie produced excellent results, especially in the interception of unknown U.S. traffic, but operations in general suffered from frequent atmospheric disturbances and a lack of any results which had value for immediate operations.

45. The Zug at Svanvik enjoyed far more favourable conditions than the unit at Bardufoss; besides the valuable work which it performed in following North Sea convoys it investigated radio conditions in the northern area. Its assistance and advice were sought for important tactical operations in the area.

D/F BASE ATLANTIC.

46. As already stated, the main function of the D/F Base Atlantic was to D/F or plot aircraft of 15 and 18 Groups, with a secondary function of D/F'ing unknown radio stations.

47. Inadequate communications between Oslo and Brest, however, made the immediate use of the information from Brest impossible, its only advantage being in its value for subsequent confirmation.

48. On the whole, the Base proved its worth as it supplied Fliegerführer Atlantik and B.d.U. with regular intelligence on strength, tactics and area of operation of convey escorts and of the aircraft of 15 Group, besides, providing B.d.U. with data which often led to successful U-boat attacks.

49. During the year the communication facilities of the Örlandet, Bodö and Svanvik D/F sites remained unsatisfactory, but nevertheless they contrived to make valuable contributions to the intelligence picture.

ANGLO-SWEDISH COURRIER SERVICE.

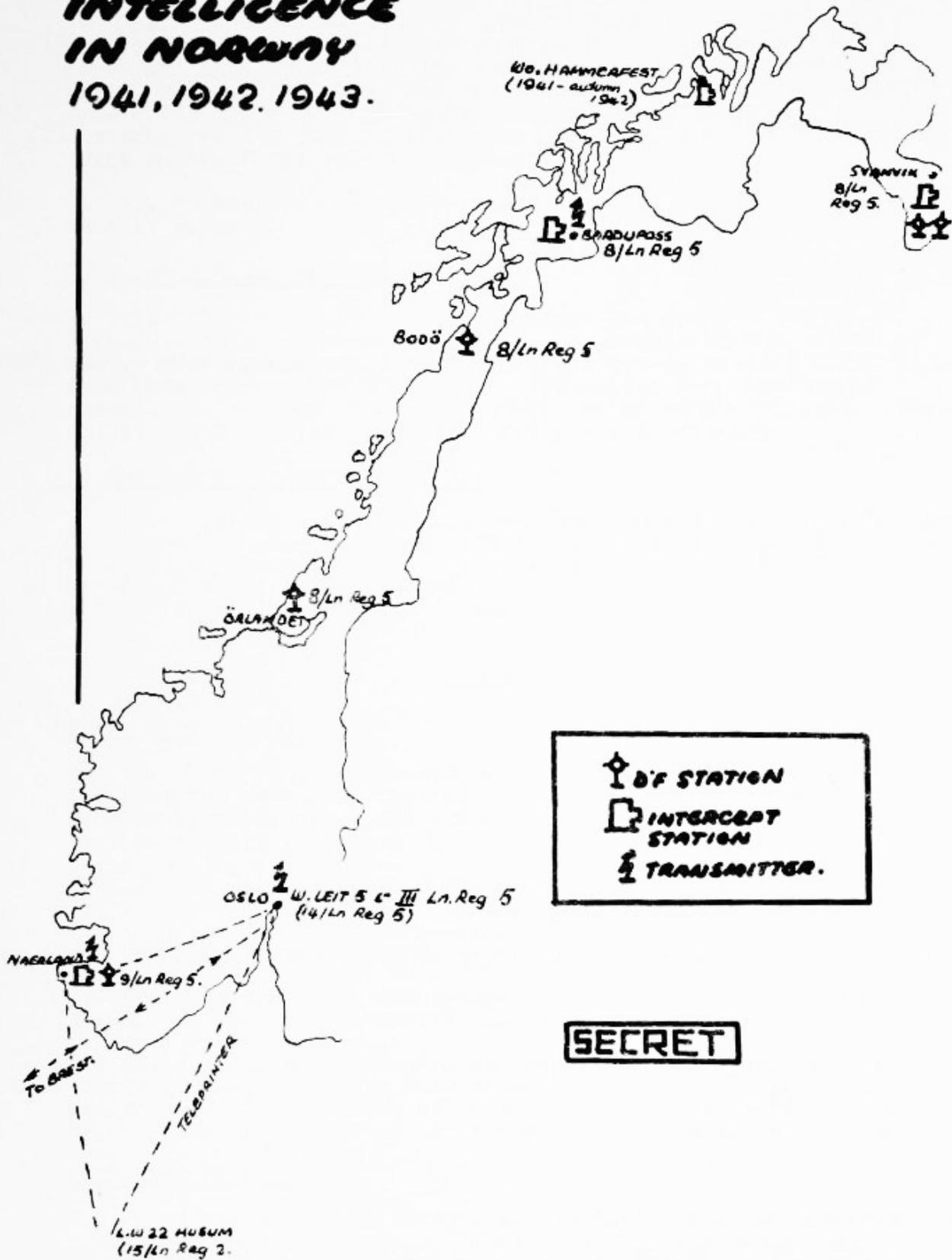
50. In the course of the year an intercept cover was put on the Anglo-Swedish courier service, and the monitoring was developed to such an extent that daily reports on numbers of aircraft operating, bases and, towards the end of the following year, the squadron strength.

TRANSATLANTIC FERRY SERVICE.

51. In the spring, W-10 ordered Husum to undertake the interception of all Allied transatlantic ferry traffic in the North and East Atlantic; the results were to be evaluated by 14/Ln. Regt. 5 at Oslo. The object was to establish the approximate daily figures of aircraft ferried, their density on the various stretches of the outward and return flights, and the types of aircraft employed for varying purposes.

52. Results were teleprinted daily and also distributed in monthly reports.

GAF SIGNALS INTELLIGENCE IN NORWAY 1941, 1942, 1943.



SYKO AND A.R.C. MESSAGES.

53. The breaking of Syko messages was carried out by 15/Ln. Regt. 2 at Husum until Syko was dropped in the middle of 1943. When A.R.C. was introduced considerable initial difficulties were encountered, but by the end of the year some measure of success was achieved and was further increased during 1944. These results were used strategically but never tactically.

IMPROVEMENTS IN COMMUNICATIONS.

54. In the course of the year the Kompanien at Oslo, Naerland and Bardufoss were equipped with transmitters in case of breakdown in landline communication. 15/Ln. Regt. 2 became the relay station for the re-transmission of messages to superior and related signals intelligence units in the Reich.

1944.

RE-ORGANISATION.

55. The year saw considerable changes in the G.A.F. Signals Intelligence service as a whole in its attempt to create a homogeneous organisation. The units in Norway brought into the scheme were renamed as follows:-

14/Ln. Regt. 5 became 1/Ln. Abt. 355.
8/Ln. Regt. 5 became 2/Ln. Abt. 355.
9/Ln. Regt. 5 became 3/Ln. Abt. 355.
15/Ln. Regt. 2 became 5/Ln. Abt. 357.

56. At the same time W-10, the controlling station in the Reich, was renamed Leitstelle der Funkaufklärung.

57. As an anti-invasion measure a mobile listening Zug was created, consisting of a contingent of W/T and R/T operators and evaluators. The unit was responsible to the Fliegerführer and was to be ready to operate at the focal point of an invasion attempt.

MOVEMENTS OF UNITS.

58. The intercept station set up during 1943 at Bardufoss and manned by 8/Ln. Regt. 5 (2/Ln. Abt. 355) had shown only partially satisfactory results due to bad reception conditions. The changing war situation made the station redundant as the unit at Svanvik was sufficient for the Northern area so that in the spring the Bardufoss station was moved to Halden.

59. At the same time 15/Ln. Regt. 2 (5/Ln. Abt. 357) was becoming monopolised by the Leitstelle der Funkaufklärung for duties in defence of the Reich, and consequently became of less value to signals intelligence in Norway.

60. After the Allied invasion in France the D/F Base Atlantic suffered the loss of its left wing at Brest and then the loss of the Svanvik base through the evacuation of Northern Norway. In the course of

1944 the entire strategic evaluation of Coastal Command traffic was taken over by the evaluation Kompanie of the Leitstelle der Funkaufklärung which was supplied with intercept data by 5/357 at Husum.

V.H.F. AND H.F. INTERCEPTION.

61. The experiments which had been made during 1941 and 1942 with the object of intercepting Allied V.H.F. traffic were finally abandoned in 1944, although the increasing weight of 16 and 18 Group attacks made the use of V.H.F. receivers on the West coast more necessary than ever.

62. Changes which took place in the W/T traffic of 18 Group during 1944 caused some difficulties to the Germans, but on the other hand the combined use of R/T and W/T by Allied forces approaching the Norwegian coasts restored the possibility of obtaining vital intelligence.

63. In such cases as the latter, the W/T intercepts could not be used for direct fighter control but a running commentary on events could be passed to the fighter control officer, detailing direction, probable intentions, tactics and strength.

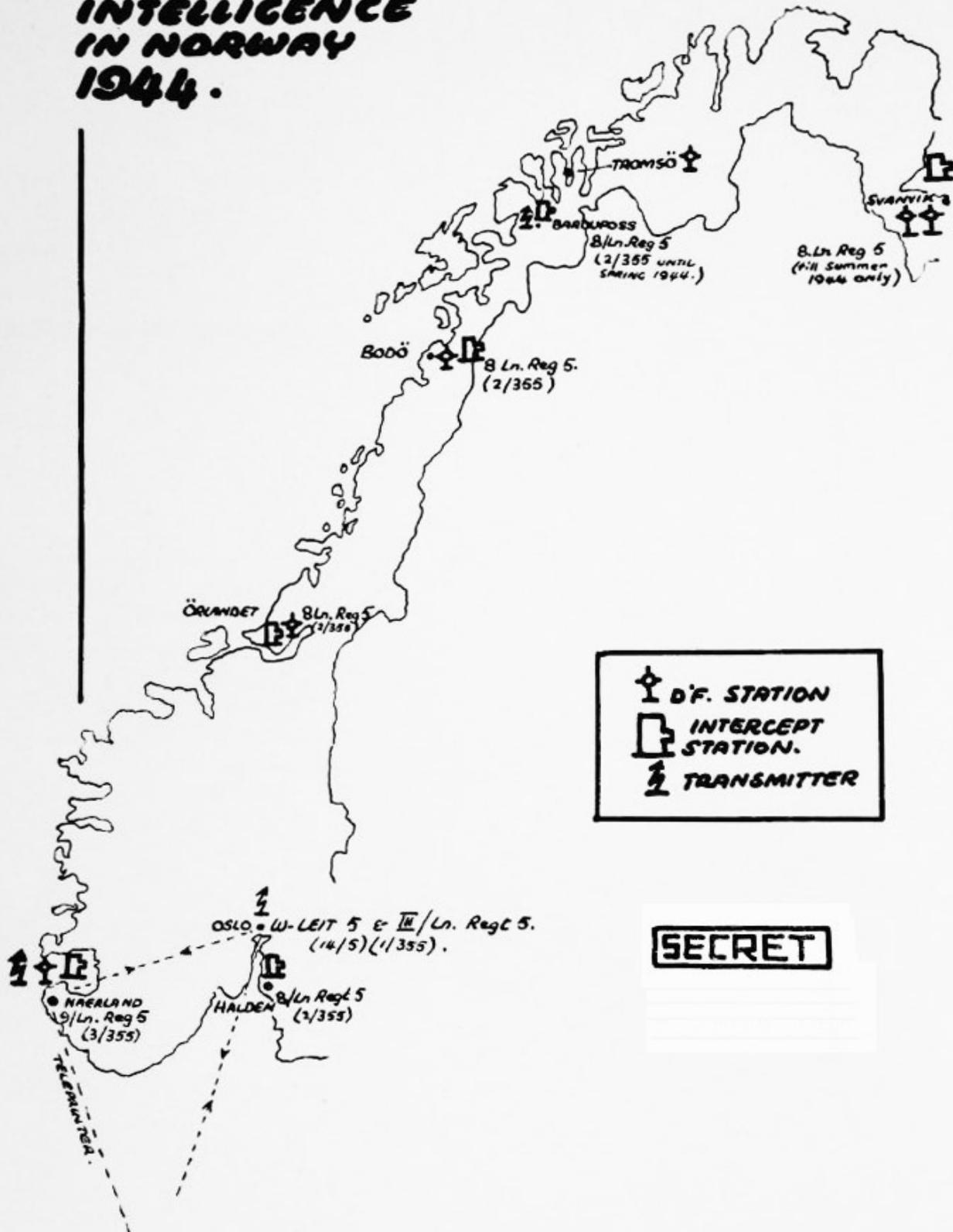
64. During the year, 2/Ln. Abt. 355 at Halden was engaged in such tasks as covering U.S. W/T traffic and R.A.F. Bomber Command tactics for the benefit of O.K.L. W/T traffic of T.A.F. aircraft was also covered for practice, and 16 Group was intercepted when it operated against the South Coast of Norway. The Kompanie later covered training and part of the coastal network, as well as D/F'ing minelaying and supply dropping activity in the Norwegian area.

65. After the re-organisation of the G.A.F. signals service early in 1944, the radio command stations (Funkbefehlsstellen) established at the divisional and sector reporting centres for the use of the radio observation and jamming services were also used by the Signals Intelligence units for the relaying of messages to higher authorities. At the same time efforts were made to develop the tactical evaluation organisation to the utmost; to that end a close co-operation with radio observation (Fu.m.B.), aircraft reporting and jamming services was achieved.

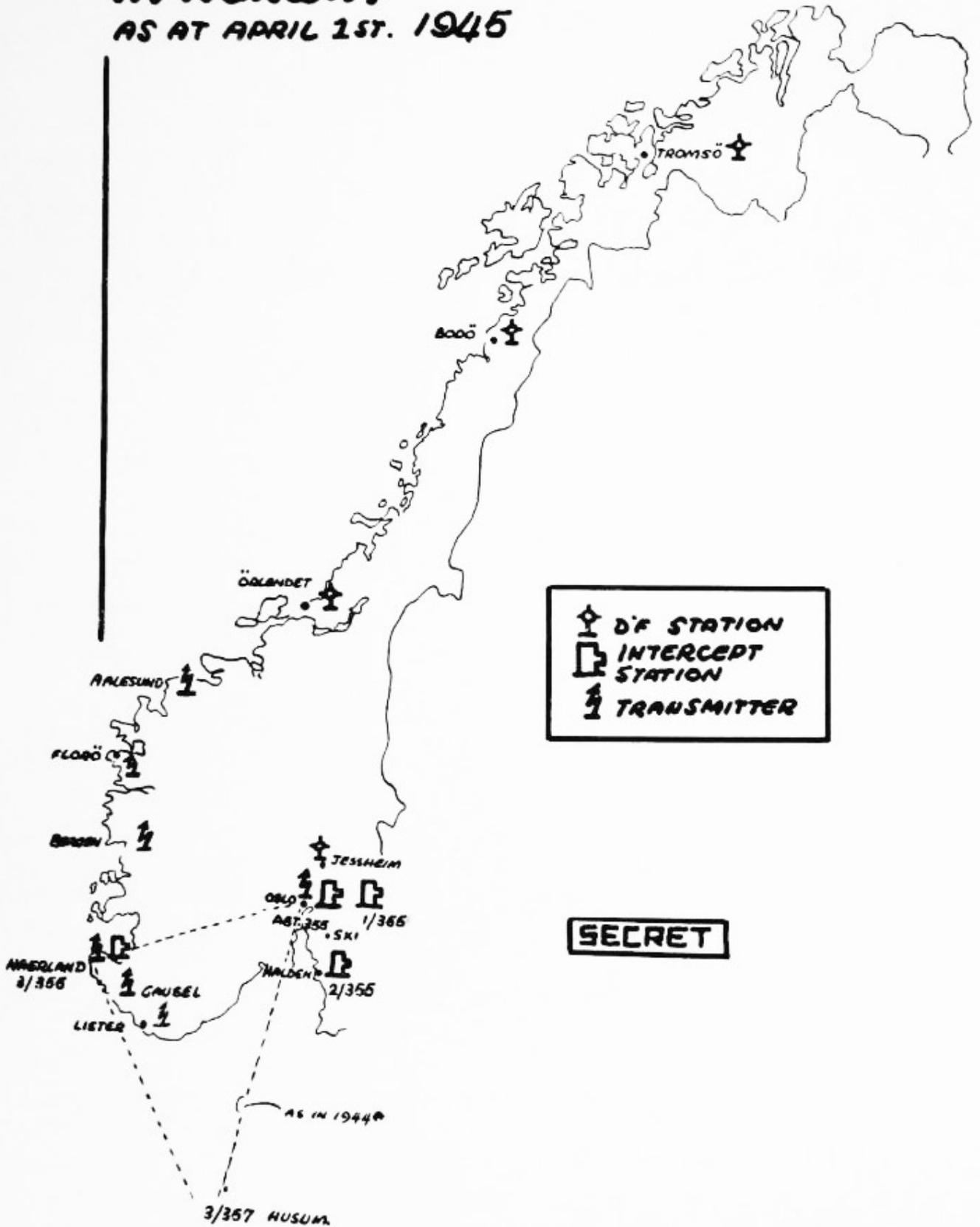
66. The monitoring of fighter O.T.U.'s in the U.K., which had continued since 1940, came to an end in the spring of 1944 when those units converted to V.H.F. At the same time a fuller cover was put on long range reconnaissance training traffic which was closely connected with the increasingly important North Sea convoy traffic.

67. The latter traffic provided intelligence on tactics, state of development, strength in carrier aircraft and the nature of carrier manoeuvres. To deal with the increase in this convoy traffic a liaison officer was attached to Fliegerführer 5 at Bardufoss and an R/T intercept Trupp was established at Tromsö; R/T operators had already been posted to the D/F squads established at Bodö and Örlandet for the purpose of intercepting R/T traffic of carrier aircraft.

CAF SIGNALS INTELLIGENCE IN NORWAY 1944.



GAF SIGNALS INTELLIGENCE IN NORWAY AS AT APRIL 1ST. 1945



1945.

D/F SQUAD TRAFFIC.

68. The radio D/F squad traffic (Funk-Peilkommandoverkehr) instituted at the beginning of the year proved more and more important for assisting the evaluation of 18 Group and Northern convoy traffic and produced invaluable results. An H/F Adcock was set up at Jessheim to supplement the Halden Kompanie's efforts in monitoring Allied Air operations in the Skagerrak, Kattegat and Oslo Fjord and act as alternative D/F base to that at Naerland.

A.D.I.(K) and
U.S. Air Interrogation.
14th November 1945.

S. D. Felkin
Group Captain.