SUMMARY OF DISCUSSIONS

OF THE

SEVENTH MEETING OF THE NAT SYSTEMS PLANNING GROUP

(Dublin, 17 February - 1 March 1971)

(PARIS OFFICE EDITION)

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INTRODUCTION

1. On the invitation of the member from Ireland of the North Atlantic Systems Planning Group, its Seventh meeting was held in the "Royal Marine Hotel" in Dun Laoghaire near Dublin, from 17 February to 1 March 1971 under the Chairmanship of Mr. J.F. Sapin, member from France.

2. On 1 March, in the morning the group met in closed session in order to discuss matters of internal interests to the group only and Agenda Items 4, 5 and 7. The consideration of the other Agenda Items was conducted in full meetings of the Group with the exception of Agenda Item 1, which was entrusted to two working groups, one of them dealing with short-term improvements to the ATS system in the NAT Region and the other with its long-term development. The working group dealing with short-term improvements was chaired by Mr. R. Howley and the other working group was chaired by Mr. G. Jones and, part-time, by Mr. T. Ó Dalaigh, all from Ireland.

3. Mr. P.G. Berger from the European Office of ICAO in Paris served as secretary of the meeting.

AGENDA

Item 1 : Review of the organization of the NAT track structure with particular reference to the needs of traffic from terminals to the North and South of the main flow.

Item 2 : Review of the situation with regard to the use of composite separation.

Item 3 : General review of the situation with regard to the introduction of SST operations in the NAT Region.

*Item 4 : Determination of the future work programme of the Group.

*Item 5 : Arrangements for the next meeting.

Item 6 : Any other business.

*Item 7 : Election of the next Chairman.

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*Reserved for consideration by members of the Group only.

LIST OF PARTICIPANTS

Note : Names marked with an asterisk are those of Members of the Group

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Summary of Agenda Item 1 : Review of the organization of the NAT track structure with particular reference to the needs of traffic from terminals to the North and South of the main flow.

GENERAL

Introduction

1.1 When considering this agenda item the Group agreed that this should basically be done under two aspects :

a) To study possibilities for the immediate technical and operational improvement of the ATS system in the NAT Region ;

b) To study those possibilities for long-term changes to the air navigation system in the NAT Region, likely to render it more efficient.

1.2 As regards the immediate technical and operational improvements, the Group agreed that under this item the following specific problems should be reviewed :

a) The modification and extension of the organized track system to better cater for air traffic now operating South of it or joining it at points other than the entry points into the NAT Region ;

b) The traffic situation in the Reykjavik FIR and plans for its improvement ;

c) The integration of air traffic departing from aerodromes close to the NAT boundary into the flow of North Atlantic traffic ;

d) Co-ordination between oceanic and adjacent continental ACCs ;

e) The ATS inter-area communication requirements between oceanic ACCs and their technical implementation.

1.3 As to the long-term changes to the NAT air navigation system mentioned in paragraph 1.1 b) above, the Group agreed that this should cover the following aspects :

a) A review of the statistical data provided by the NAT Traffic Forecasting Group (NAT/TFG) with a view to proposing those changes to the air traffic forecasts which will render them more useful for system planning purposes ;

b) A review of the possibilities for long-term changes to the organized track system both as regards its extent in space as well as its capacity ;

c) The determination of the type of data required to decide on the feasibility and desirability of implementing a semi-fixed or fixed ATS route structure in specific parts of the NAT Region.

General comments on the NAT ATC system

1.4 In meeting the requirement for a basic review of the NAT organized track system, expressed in Recommendation 10/14 of the NAT V RAN Meeting, the Group wished to have it noted that the present ATC system used in the NAT Region has been developed over the last 15 years. Despite unavoidable shortcomings and occasional malfunctions it constitutes, at least in concept, the most equitable compromise as far as planning of individual flights and the practical operation of an ATC system is concerned and this in conditions where a large number of diverging, if not opposing, interests are present. In addition, experience has shown that because the system is operated, as well as exploited, by a comparatively large part of the aviation community, it was not responsive to radical and abrupt changes. It was therefore believed that any changes to the system could only be effected in an evolutionary manner and with adequate lead time.

1.5 The above was however not meant to imply that improvements to the system were not possible both as regards the operation of the system as well as its traffic capacity and the Group had the firm intention to exploit any possibility which offered itself in this respect.

1.6 In this context it was noted that the growth of air traffic originating from or destined for the Iberian Peninsula and points east thereof because of the longer range aircraft introduced into service over the last number of years has accentuated previously existing problems and posed a number of new ones which require early solution. A detailed study on the requirements of this traffic had been presented to the Group by Spain which contained a particularly interesting section on the meteorological aspects influencing the traffic flow in the NAT Region. However, since this study had only been made available to the Group at the time of the meeting there had been insufficient time to review it in detail. It was therefore agreed to retain it as supporting documentation for the next meeting of the Group when the question of the organization of the traffic flow in the NAT Region would, once more, be reviewed.

1.7 Apart from the problems posed by the joining of the traffic from the Iberian Peninsula with the central East-West flow of air traffic across the North Atlantic there remained still the problem of flights which, due to their origin and destination were obliged to cross one or more of the heavily used traffic arteries in the NAT Region.

1.8 Furthermore, there remained the problem of the overall capacity of the organized track system in the North Atlantic which, despite efforts by all concerned, did, on an average, not reach more than about 60 or 65% of its theoretical capacity in part due to the random nature of the traffic flow.

1.9 The suggestion was made that the use of more uniform MET data for flight planning purposes, as well as for traffic flow planning, by both the operators and the air traffic control services concerned may be of assistance and it was expected that developments now under way in the MET field may assist in achieving this objective.

1.10 The Group noted that there was still a disturbingly high number of occasions where certain oceanic control centers did not receive flight plan information, and subsequent departure messages, on NAT flights at all or too late to permit proper integration of the flights concerned into the planned flow of air traffic (see also paragraph 6 below).

1.11 Since it was now intended to apply composite separation on a limited scale as of 1 April 1971 within the organized track system, the Group briefly considered the effect this could ultimately have on the problem of joining or crossing traffic, once it was applied on a more extended scale. As a first appreciation, the Group came to the conclusion that the effect of composite separation on the flow of air traffic within the organized track system will be, to reduce the problems now posed by joining air traffic since that part of the organized track system catering for the main East-West flow of air traffic may be reduced in geographical extent thus leaving more space for the establishment of additional organized tracks South of it, or for tracks outside the system.

1.12 As regards the problem of traffic crossing the organized track system in relation to the use of composite separation, the Group felt that it was still too early to come to any valid conclusions at this time. It was therefore agreed that the present practice of using FL 280,

FL 290 and FL 390 in the area covered by the organized track system for this purpose should be retained until sufficient practical experience had been gained which permitted a new review of this question. This was based on the fact that a study by the United Kingdom had shown that this procedure provided for a more equitable distribution of economic penalties between aircraft in the organized track system and those crossing it.

1.13 As regards the problem of joining and crossing traffic operating between North-West Europe and points in the Caribbean area, the Group believed that this could best be resolved by arrangements whereby better coordination of such flights and earlier receipt of flight data on them is ensured through appropriate arrangements between the OACs and the adjacent ACCs concerned.

SHORT-TERM IMPROVEMENTS

Modification and extension of the organized track system

1.14 The Group noted that, since the NAT V RAN Meeting, appreciable improvements had been made regarding the integration of air traffic originating from points on the Iberian Peninsula and east thereof into the flow of air traffic operating within the organized track system in the NAT Region. However, the extent of the penalties to aircraft, operating on this axis, resulting from deviations either in flight level or in route or in both from those requested in their flight plans was still proportionally higher than that of aircraft entering the NAT Region at the entry points of the organized track system. The Group noted that the same might apply in respect of traffic from other areas and agreed that efforts of all concerned would have to be continued in order to eventually obtain a more equitable distribution of economic penalties amongst all aircraft forming the entire traffic flow across the North Atlantic.

1.15 The Group considered three ways of improving the situation with regard to air traffic joining the organized track system :

a) Procedural arrangements between all oceanic and continental ACCs adjacent to the NAT Region which permitted the earliest possible coordination of all flights intending to operate in the NAT Region in order to obtain an optimized traffic flow ;

b) The reservation of a selected number of flight paths within the organized track system for use, on a priority basis, of air traffic joining the organized track system at points other than its principal entry points in the NAT Region ;

c) The long-term complete or partial revision of the basic concept of the organized track system.

1.16 Amongst the 3 possibilities mentioned above, it is obvious that the one indicated in paragraph c) could not provide any short-term improvement. Between the two remaining possibilities the Group clearly preferred that listed in a). However, this presupposes not only a very clear understanding of the Oceanic control techniques by all ATC units concerned but also the existence of continuously reliable ATS inter-area communications between all ACCs concerned and the provision of equally reliable air-ground communications permitting the OACs to establish early contact with NAT flights prior to their entering the NAT area in order to negotiate the appropriate oceanic clearance.

1.17 Unfortunately, the Group found that, for the westbound traffic from the Iberian Peninsula, and as far as the ATS inter-area speech circuit between Shanwick and Santa Maria OACs was concerned, this condition was not yet met.

1.18 The Group felt that, taking into account the increasing demand on the air traffic control system in the NAT Region, it was now essential that a communication problem, which had been known to exist for some years, should be resolved. Should the palliative measures, mentioned in paragraph 1.30 , prove inadequate the States concerned (Portugal and the United Kingdom) should pursue the matter without delay so as to ensure a speedy solution to the problem.

1.19 In the meantime, the Group agreed that, until such time as the above fully reliable communication requirements were met in a satisfactory manner and agreements could be based on the possibility mentioned in paragraph 1.15 a) it would be obliged to propose the adoption of the possibility mentioned in paragraph 1.15 b) above to cater for traffic originating from the Iberian Peninsula during peak traffic periods. This should be done under the following conditions and with the understanding that they also required the provision of reasonable ground-ground communications between the OACs concerned :

a) Based on weather forecasts and on peak period track information supplied by the operators, Santa Maria OAC will calculate a minimum time track (MTT) extending from Oporto to New York (Oporto having been chosen as the approximate mid-way point between Lisbon and Santiago), and this will be transmitted to Shanwick OAC in sufficient time for consideration when the organized track system is established.

b) If during the establishment of the organized track system it is found that this MTT will not conflict, separationwise, with the southernmost track available to westbound flights in the organized track system as established by Shanwick and Gander OACs, it will be included as a further track in the appropriate track message issued by Shanwick OAC. It can then be joined, at an appropriate point determined by Santa Maria OAC, by flights originating both in the Lisbon and Madrid FIRs.

c) Should it, however, be found that the MTT Oporto-New York conflicts, separationwise, with the southernmost track available to westbound flights in the organized track system established by Shanwick and Gander OACs, it will be aligned so as to join this track at a convenient point, to be agreed during the establishment of the organized track system and this will be indicated in the appropriate track message by Shanwick OAC. The available flight levels for westbound flights on that track will then be shared for assignment to flights between Shanwick and Santa Maria OACs in accordance with the following :

   i) Shanwick OAC will assign FL 350, on a priority basis, to flights using that track and entering the Shanwick Oceanic CTA at the entry point of this track. Assignments by Santa Maria OAC of this flight level to flights operating on the joining track will only be made after prior coordination with Shanwick OAC.

   ii) Santa Maria OAC will assign FL 310 on a priority basis, to flights using the joining track. Assignments by Shanwick OAC of this flight level to flights using the Southern track from its entry point in the NAT Region will only be made after prior coordination with Santa Maria OAC.

iii) The use of flight levels normally reserved for eastbound flights on the track established in accordance with b) or the joining track established in accordance with c) above will only be made, both by Shanwick and Santa Maria OACs, after prior coordination with Gander and/or New York OACs as applicable.

Note: The "a priori" distribution of FL between Shanwick and Santa Maria OACs shown in i) and ii) above may be inverted by mutual consent between the two OACs concerned.

d) In addition, if required, Santa Maria OAC may establish a further published track south of that established in accordance with b) or c) above. Apart from meeting the lateral separation criteria with respect to both, the joining and the southernmost track of the organized track system, this track will have to be situated entirely within the Santa Maria CTA to the South of its northern boundary. Its extension beyond the Santa Maria CTA will however have to be coordinated with all OACs concerned and it will have to be notified to Shanwick OAC for inclusion into its track message. The establishment of this track should be made dependent on the expected traffic density and full account should be taken of the need for flexibility of flight planning and the provision of the most advantageous flight path to aircraft operating along random tracks in the Santa Maria and New York CTAs.

Note: The conditions specified in paragraphs a) and b) above and in the first part of paragraph c) will, most likely, also be applicable when arrangements in accordance with the possibility mentioned in paragraph 1.15 a) can be concluded.

Traffic situation in the Reykjavik FIR

1.20 When considering this subject, the Group recalled that this had already been discussed at the NAT V RAN Meeting (Recommendation 10/15 of NAT V RAN refers). It was also noted that it had subsequently been the subject of discussions between Iceland and IATA which had been held in Iceland in June, 1970.

1.21 Even though the general application of 20 minutes longitudinal separation between turbo-jet aircraft in the NAT Region had helped to alleviate the traffic problems in the Reykjavik FIR, there remained nevertheless a number of difficulties which resulted from the crossing of traffic flows and by polar and sub-polar flights and those bound for, or originating in Iceland and bound for destinations in Europe and North America. In addition, the northernmost track of the organized track system, and occasionally also the next adjacent track to the South extended quite frequently into the southern part of the Reykjavik CTA, resulting in an appreciable increase in air traffic operating in this CTA.

1.22 As a consequence, Iceland therefore repeated its proposal made at the NAT V RAN Meeting, to provide the Reykjavik ACC with secondary surveillance radar since it was believed that this could materially assist in resolving the traffic problems posed. As to the technical realization of this project it was explained that this could most economically be obtained by the use of an existing SSR facility which would only have to be remoted to the site of the ACC and that this could be accomplished in the Spring of 1972.

1.23 The Group felt that, while the provision of radar, including SSR, was always desirable from a purely operational point of view, it was nevertheless in the same position as the NAT V RAN Meeting since the question of financing this project inevitably raised its cost/benefit aspect and the information provided at this time by Iceland still did not permit to appreciate this aspect fully. It was therefore agreed that, under these circumstances the Group could only express an opinion as to the operational advantages which may be derived from such a facility, but that it would have to leave the assessment in relation to the expected initial and recurring costs, supported by joint financing, to the appropriate bodies within ICAO which would have to be approached by Iceland.

1.24 As regards the operational advantages of an SSR in Iceland, the Group believed that these could be the following, provided the use of the SSR met the conditions specified in paragraph 12.2.1.2 of Doc 7030 for its use without the back-up by an associated primary radar :

i) It could assist in the resolution of conflicts posed by traffic on crossing tracks when the crossing point was situated within the reliable range of the SSR ;

ii) It could assist in the expedition of arriving and departing traffic at Icelandic airports and its integration into the flow of overflying air traffic ;

iii) In those cases where tracks of the organized track system were within radar cover it could be used to shift traffic on such tracks onto higher flight levels once this was possible from the aircraft performance point of view, thus providing additional flight levels on the track or tracks in question, which could, for example, be used by that traffic wishing to join the organized track system from the North.

1.25 It was also pointed out that the provision of better ATS inter-area communications with Stavanger ACC and better VHF air-ground communication coverage especially within the South-eastern part of the Reykjavik FIR could facilitate better planning of the flow of air traffic and more efficient coordination.

Integration of air traffic departing from aerodromes close to the NAT boundary into the flow of North Atlantic traffic

1.26 The Group felt that the application of a procedure whereby NAT flights contacted the OACs of entry into the NAT Region as early as possible on appropriate air-ground communication channels for the negotiation of their oceanic clearance had led to a situation whereby in some instances the ATC clearance was determined on a "first call, first served" basis rather than on the "first come, first served" rule. While this had no serious effects on flights departing from points situated geographically far away from the NAT boundary, since all of those flights were contacting the OACs when reaching approximately the same area, this appeared however to penalize flights departing from points situated close to the NAT boundary when they requested their clearance only shortly prior to take off. A case in question quoted was that of Shannon where departing aircraft were frequently suffering penalties on account of this situation.

1.27 The Group therefore agreed that measures should be taken to avoid such penalties by issuing clearances to such aircraft in appropriate time ahead of their planned departure time (a time somewhere in the order of 45' was mentioned). This would however have to be done on the understanding that those aircraft, unable to meet their estimated time of departure within agreed tolerances, would be unlikely to be cleared via the track and flight level requested in their flight plan. The Group refrained from entering into further detailed consideration of any specific cases since it was obvious that, for each location concerned, so many local factors have to be

considered that, apart from the above general principles, it would not be possible to list them in detail. They were therefore left to appropriate bilateral arrangements between the ATC units concerned.

1.28 In certain situations, aircraft departing from aerodromes close to the boundary of the NAT Region incurred severe penalties due to their inability to reach the flight level specified in their oceanic clearance prior to arriving over their entry point into the Oceanic CTA. Such penalties could be considerably reduced by the use of radar, available to continental ACC's in the oceanic CTA close to the NAT boundary. The Group hoped that, whenever this is possible, States concerned will provide for the necessary arrangements, if required in consultation with other States concerned.

Coordination between oceanic and adjacent continental ACCs

1.29 Consideration of the problems posed by the integration of the air traffic from the Iberian Peninsula into the general flow of NAT traffic as well as a number of other cases had clearly illustrated the need for the closest possible coordination between OACs and the adjacent continental ACCs and this not only for the resolution of specific problems but also in order to promote a wider understanding between the controllers of the ACCs concerned of their respective operating techniques and control concepts. In this respect, the Group noted Recommendation 10/32 of the NAT V RAN Meeting and endorsed its intent fully with a hope that States concerned would take all necessary measures to permit its full application.

ATS inter-area communication requirements and their technical implementation

1.30 When considering this subject the Group restricted its review to those requirements which had either not been implemented or which, while implemented, did not satisfy all requirements. The outstanding case of difficulties in this respect was believed to be the ATS inter-area communication circuit between Santa Maria and Shanwick OACs. Further to the views expressed in paragraph 1.18 above, the Group felt that this circuit should be provided as a direct controller-to-controller speech circuit with the highest possible reliability. It was noted that both Portugal and the United Kingdom, were now engaged in the installation of new communication equipment to serve this circuit and that this new equipment was expected to be brought up into operation by mid-March 1971. Only then would it be possible to determine whether this equipment met the operational requirements or whether a new technical solution would have to be sought.

1.31 With respect to the direct ATS speech circuit between Santa Maria and Gander OACs the Canadian member informed the Group that this is now being actively studied by Canada and that they expect shortly to approach Portugal with a view to reaching agreement on the implementation of this circuit, possibly by the use of HF/SSB techniques.

1.32 With regard to a direct ATS speech circuit between Santa Maria OAC and San Juan, (to be provided by switching at New York) the US Member stated that this was required in order to permit timely coordination of air traffic originating in the Caribbean area with that operating in the Santa Maria CTA. In addition, the US Member stated the desirability for a direct ATS speech circuit between New York and Shanwick OACs which, in his opinion could also materially assist in the better coordination of the North Atlantic traffic flow and the operation of the organized track system.

1.33 With regard to the provision of a communication link between Reykjavik and Stavanger ACCs by a switching arrangement at Prestwick ACC, the UK Member informed the Group that, due to the technical arrangements of the circuits Prestwick-Reykjavik and Prestwick-Stavanger, it was probable that this switching could not be effected in Prestwick but would have to be done in London. Technical measures to permit this switching were being investigated in the United Kingdom as was the practicability of providing the necessary additional circuits from Stavanger to London.

1.34 In this context the Group also briefly reviewed the situation with regard to the AFTN and the receipt of flight plan information and departure messages for NAT flights from areas outside the NAT Region. It was noted that, on the European side, the situation appeared to be fairly satisfactory. In fact, Shanwick was missing flight plans or departure messages on only about 5% of all flights originating in Europe and handled by that center. With respect to Reykjavik and Santa Maria OACs, the situation appears to be identical to that stated for Shanwick.

1.35 Similarly there was no serious communication problem on the North American side of the North Atlantic except the one mentioned in paragraph 6 below which was however not related to the technical operation of the AFTN.

1.36 On the other hand, there was unanimous agreement on the highly unsatisfactory situation with regard to the transmission of flight plans and departure messages from the Caribbean area to either North America or Europe and it was hoped that necessary measures would be taken to improve this situation as early as possible.

LONG-TERM IMPROVEMENTS

Review of the statistical traffic data provided by the NAT Traffic Forecasting Group (NAT/TFG)

1.37 In accordance with Recommendation 1/1 of the NAT V RAN Meeting, concerning the work of the NAT/TFG and Recommendations 3/2 and 3/3 dealing with its continued activities, the Group reviewed the draft of the latest traffic forecasts provided by the NAT/TFG, covering the period from 1971 to 1980. In doing so, the Group had before it a paper prepared by the United Kingdom Member which dealt with a number of difficulties in the designation of categories of traffic in the forecast which were noted during the NAT V RAN Meeting and a study made available by the Member from Canada which contained a study of the North Atlantic traffic flows resulting from an analysis of traffic data obtained from the Gander OAC.

1.38 The Group noted that certain States experience difficulties in relating the traffic forecasts so far provided by the NAT/TFG to technical systems planning in the region. The forecasts provided little or no information on main axes along which traffic was operated in the NAT Region and therefore provided little information on the technical problems to be expected as far as capacity requirements and ATS problems caused by joining or crossing flows of air traffic were concerned.

1.39 In addition, the Group also noted the point made in paragraph 1.4.2 of the NAT V Report (Doc 8879, NAT/V, page 1-2 refers) that, if the forecasts prepared by the NAT/TFG were oriented too exclusively along economic lines there might eventually be a duplication of effort in this field between the activities of the NAT/TFG and those of ICAO made in accordance with its Assembly Resolution A 16-22.

1.40 As a consequence the Group made a detailed review of the ten-year air traffic forecasts, as now prepared by the NAT/TFG, and agreed to make a number of suggestions for changes and improvements which should be brought to the attention of the NAT/TFG by the members of the NAT/SPG from Canada, the United Kingdom and the USA. Should agreement be reached on the application of new or modified working methods this would enable the OAC's concerned to collect the necessary data in sufficient time so that the forecast for the period 1972 to 1981 could be prepared accordingly. Meanwhile, existing data collections should continue.

1.41 As regards the various proposals themselves, the Group agreed the following:

1.41.1 The forecast by the NAT/TFG, covering the period from 1971 to 1980 should be published without change.

1.41.2 The definitions of the various periods to which the forecasts are related, i.e. the "busy period", the "busy day" and the "busy hour" should remain unchanged, except that if the "busy period" on one of the traffic axes specified below occurs at a time other than July and August, this should be taken into account and quantified in the forecast.

1.41.3 Contrary to present practice, efforts should be made, and appropriate methods developed by the NAT/TFG, which will permit a more reliable forecast for the first five years of the ten-year period in order to provide more useful data for technical and operational planning of the air navigation system in the NAT Region. As regards the period from the 6th to the 10th year of the forecast period, the Group felt that in this case it would be adequate if a broad indication of expected developments were given showing possibly the low, mid and high figures depending on the assessment made. In addition it was suggested that the low, mid and high figures for the 6th to the 10th year should be shown as "projection figures" rather than forecast figures in order to underline their different status as far as reliability was concerned as compared with those for the first 5 years of the forecast period.

1.41.4 When making the above request the NAT/SPG was fully aware of the fact that this suggestion, when applied, would mean a considerable departure from present methods used by the NAT/TFG. It felt however that this, together with the proposals in the paragraphs below, would render the forecast much more useful as a technical planning tool. The forecast figures for the first five years could be used to permit planning for any necessary procedural and technical changes to the air navigation system brought about by changes in traffic flows. The projection figures for the later periods of the forecasts could be used as a basis for long-term planning of ATC systems.

1.41.5 As far as the question of relating air traffic to specific traffic axes in the NAT Region is concerned, the Group suggested that the following method should be used :

both, the North American and the European area, bordering on the North Atlantic should be divided into :

a) 3 originating sectors called the Northern, Central and Southern sector respectively ;

b) 3 destination areas similarly called the Northern, Central and Southern areas.

Note: The geographic regions designated by similarly named sectors and destination areas on the same side of the Atlantic are not necessarily co-incident.

1.41.6 Traffic axes should then be established from each one of the 3 sectors on either side of the North Atlantic to each of the destination areas on the other side, providing a total of 9 axes and traffic should be related to these 9 axes. It was however noted that a study made by Canada indicates that traffic on several of these axes may be zero or near zero.

Note: The schematic arrangement of the 9 axes is shown on page 1-19 split into the eastbound and westbound flow of traffic. On the diagram the letter, following the number of each of the 9 axes, indicates the direction (E = eastbound, W = westbound) and the various axes may be referred to by their designation.

1.42 The assignment of traffic to any one of the axes should be determined by :

a) The originating sector containing the point of entry into the NAT Region, and

b) the destination area determined by the airport of destination on the other side of the North Atlantic

and the definitions of the different sectors and areas are given in the following paragraphs.

1.42.1 On the European side of the North Atlantic the originating sector for westbound traffic is determined as follows :

i) Traffic entering the NAT Region at 10°W and north of 61°N up to and including 73°N and traffic departing from Iceland on a westbound flight is considered to be originating from the Northern sector ;

ii) traffic entering the NAT Region on the Eastern boundary of the Shanwick FIR between 45°N 08°W and 61°N 10°W is considered to be originating from the Central sector ;

iii) traffic entering the NAT Region on the Eastern boundary of the Santa Maria FIR between 36°30'N 15°W and 45°N 13°W and on the boundary of the Madrid FIR between 45°N 13°W and 45°N 08°W (but excluding the traffic crossing precisely at 45°N 08°W) and westbound traffic from the Azores is considered to be originating from the Southern sector.

1.42.2 The destination areas in North America for westbound traffic from Europe are determined as follows :

i) Westbound traffic for airports such as Calgary, Frobisher Bay, Vancouver, Winnipeg, Søndre Strømfjord, Anchorage, Los Angeles, Oakland, San Francisco or Seattle is considered to be proceeding to the Northern area ;

ii) Westbound traffic for airports such as Gander, Halifax, Montreal, Ottawa, Toronto, Baltimore, Bangor, Boston, Chicago, Detroit, New York, Philadelphia and Washington is considered to be proceeding to the Central area ;

iii) Westbound traffic for airports such as Bermuda, Miami, Antigua, Barbados, Nassau and points further South is considered to be proceeding to the Southern area.

1.42.3 On the North American side of the North Atlantic the originating sector for eastbound traffic is determined as follows :

i) Traffic entering the Gander Oceanic or Søndre Strømfjord FIRs North of 58°N 50°W is considered to be originating from the Northern sector. The same applies for departures from Greenland to destinations in Europe ;

ii) Traffic entering the NAT Region at 50°W between 43°N and 58°30'N (including these two points) is considered to be originating from the Central sector ;

iii) Traffic entering the NAT structure at 50°W at 37°N and north of it up to, but excluding 43°N is considered to be originating from the Southern sector.

1.42.4 The destination areas in Europe for eastbound traffic from North America are determined as follows :

i) Eastbound traffic for airports in Iceland, Norway, Sweden, Finland and the USSR is considered to be proceeding to the Northern area ;

ii) Eastbound traffic for airports in Ireland, Denmark, Germany, the Netherlands, the United Kingdom, Belgium, Luxembourg, Czechoslovakia, France, Switzerland, Italy, Greece and Israel is considered to be proceeding to the Central area ;

iii) Eastbound traffic for airports in Spain, Portugal (including the Azores) and North Africa is considered to be proceeding to the Southern area.

1.43 In order to assist the NAT/TFG in establishing its forecast in this way, Canada, Iceland, Portugal, the United Kingdom and the USA should provide it with actual hourly (GMT) traffic data on turbo-jet aircraft for the busy period of July and August of each year as well as other relevant traffic data as outlined in para. 1.41.2 above in accordance with the following :

i) Canada should provide the NAT/TFG with actual traffic data on eastbound traffic entering the NAT Region via the Northern and Central sectors including the data collected by Iceland. However traffic entering the Northern sector and landing in Greenland should be excluded (see paragraphs 1.42.3 and 1.42.4).

ii) Iceland should provide the United Kingdom, for the NAT/TFG, with actual traffic data on westbound traffic entering the NAT Region via the European Northern sector as well as departing westbound traffic from Iceland. It should furthermore provide Canada, for the NAT/TFG, with data on eastbound traffic entering the NAT Region via the American Northern sector and on traffic departing from Greenland on eastbound flights (see paragraphs 1.42.1 to 1.42.4) ;

iii) Portugal should provide the United Kingdom, for the NAT/TFG, with actual traffic data on westbound traffic entering the NAT Region via the Southern sector, including westbound traffic departing from the Azores and traffic entering the NAT Region East of 13°W. However traffic entering the Southern sector and landing at the Azores should be excluded (see paragraphs 1.42.1 and 1.42.2).

iv) The United Kingdom should provide the NAT/TFG with actual traffic data on westbound traffic entering the NAT Region via the Northern, Central and Southern sectors including the data collected by Iceland and Portugal (see paragraphs 1.42.1 and 1.42.2).

v) The USA should provide the NAT/TFG with actual traffic data on eastbound traffic entering the NAT Region via the Southern sector at 50°W from 37°N up to, but excluding 43°N, and via the Central sector at 50°W and at 43°N and up to, but excluding 45°N (see paragraphs 1.42.3 and 1.42.4).

1.44 As regards the presentation of the forecast, revised in accordance with the above proposals, the Group felt that, if possible, it should include the following :

i) Actual traffic data for the busy period of the year preceding the first year of the forecast by the "busy day" and the "busy hour" on each of the 9 axes specified in paragraph 1.41.4 above ; after the introduction into service of supersonic aircraft the tabulation should distinguish between the subsonic and supersonic flows ;

ii) A table, similar to Table 1 in the present forecast containing the total annual traffic forecast for the first five years and projection figures for the sixth to the tenth years of the forecast ;

iii) Forecasts and projection figures during the busy period for the "busy day" and the "busy hour", similar to Table 2 in the present forecast but expanded to cover each of the 9 axes specified in the paragraphs above and for subsonic and supersonic aircraft ;

iv) Tables 6 and 7 in the present forecast should show the distributions for the fifth year only ; separate tables for each of the 9 axes would enhance their value as planning tools.

1.45 Tables 3 and 5 in the present forecast appear to be of little, if any, use for technical and operational planning purposes and consideration could be given to their deletion from future forecasts.

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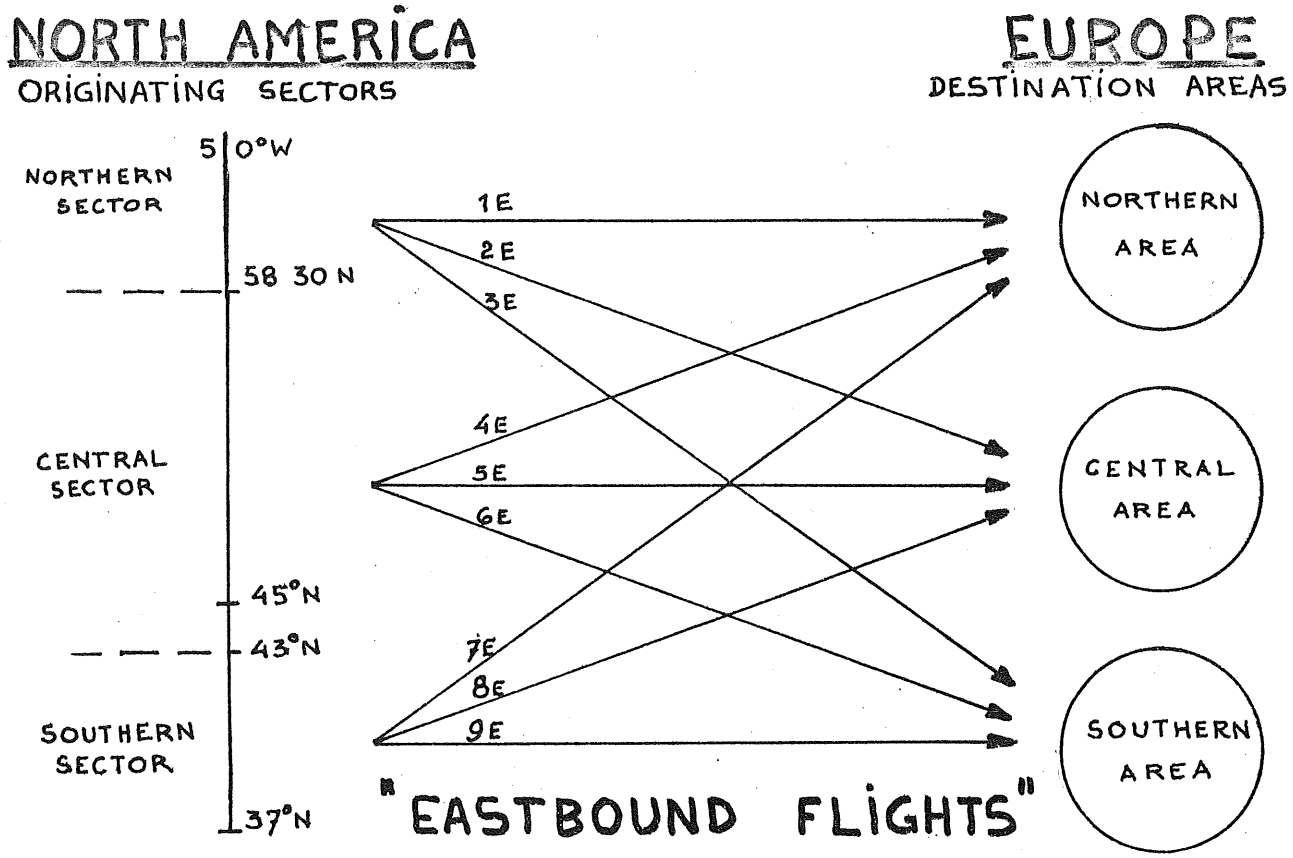
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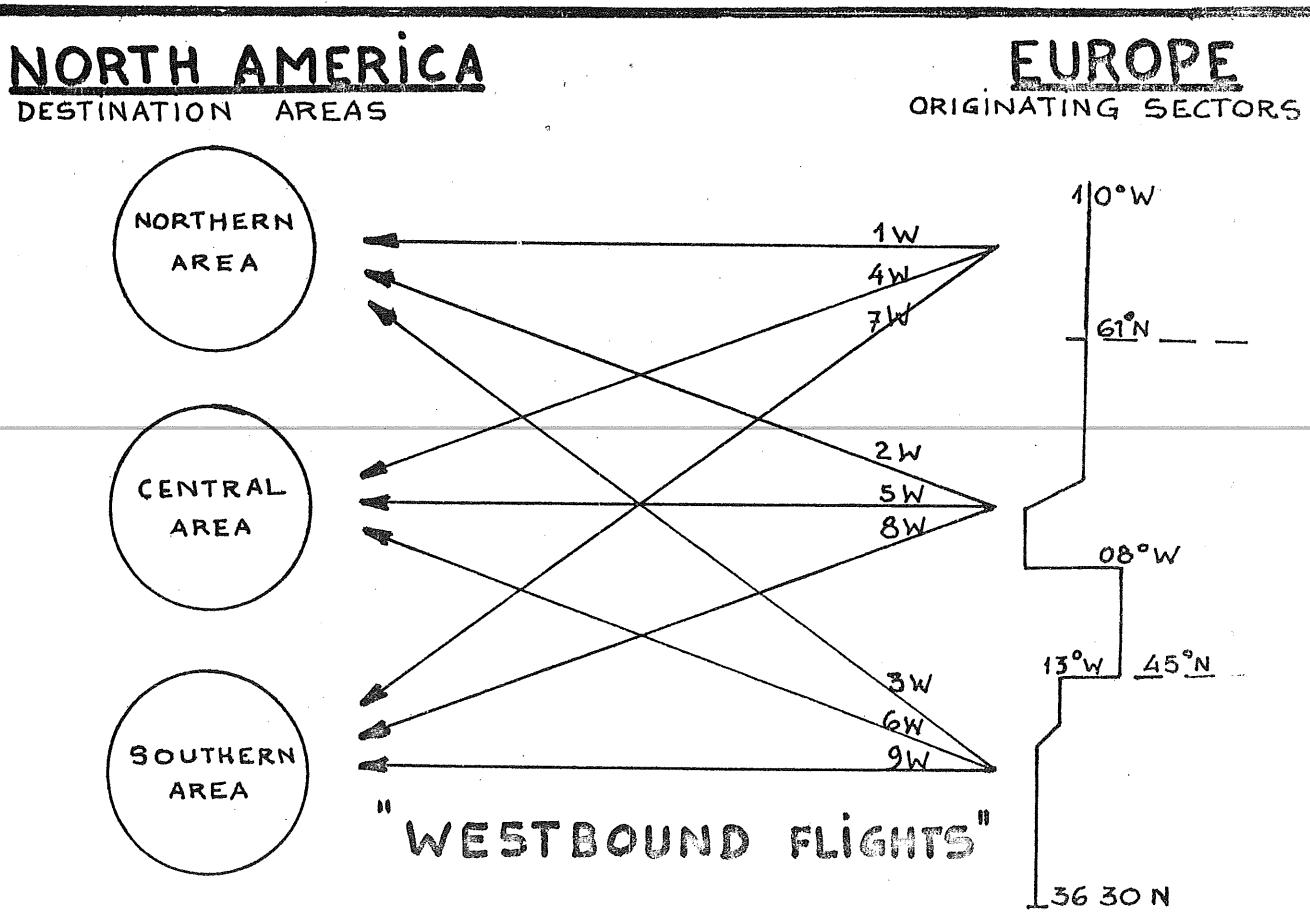
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Long-term changes to the organized track system

1.46 As regards the possibility of long-term changes to the organized track system so as to render it more efficient both as regards economic penalties imposed on individual flights and its overall capacity, the Group considered that it was important that any long-term changes should occur in an evolutionary manner following the implementation of those short-term improvements described in paragraphs 1.14 to 1.36.

1.47 It was appreciated that the economic aspects and capacity of the organized track system are closely associated with the separation standards imposed. The impending introduction of composite separation will increase the capacity and its progressive expansion should effect a continued improvement. Further improvements could be obtained by reductions in vertical and longitudinal separation and although no such reductions are seen as likely in the near future, any possibilities in this direction should be pursued. Although the widespread use of composite separation might appear to decrease the necessity for further reductions in the basic lateral separation, there would be advantages in such a reduction in a conventional track structure (e.g. reductions in crossing traffic conflicts and simplified procedures in transition areas).

1.48 With the increasing number of aircraft coming into service which are equipped with inertial navigation systems (INS), it may be feasible to take advantage of the significantly improved navigational accuracy and reliability of this equipment in segregating those aircraft so equipped from others by the provision of separate flight paths for them, on which reduced separation standards are used. This would provide increased system capacity based on segregation of this portion of the aircraft population. Care would have to be taken in allocating flight paths for INS and non-INS equipped aircraft, to ensure that one class of aircraft did not receive an undue proportion of the economic penalties caused by deviation from optimum tracks. In order to evaluate the accuracy and reliability of INS in regular airline service a data collection programme is being operated by airlines utilizing this equipment.

1.49 In considering long-term changes to the organized track system the Group reviewed the "Elements to be taken into account in long-term system planning" in the Report of the NAT V RAN Meeting and concluded that no points other than those discussed above had a direct bearing on methods to improve the organized track system.

Data required for a decision on the feasibility and desirability of introducing a semi-fixed or fixed ATS route structure in certain parts of the NAT Region

1.50 In its consideration of long-term improvements to the NAT organized track structure, the Group noted that at the NAT V RAN Meeting the question had arisen whether studies should be undertaken to see whether the route structure catering for sub-sonic air traffic, which is now established on a daily basis, should be given a more permanent basis. That meeting had commented that there was as yet no statistical data available regarding the daily or seasonal variations of the subsonic track system and on the cost/benefit aspects of a comparison between a track system as determined by ATC and using forecast MET conditions and the actual MET conditions encountered on the tracks. The NAT V RAN Meeting agreed that it would be worthwhile to look into this question in more detail in order to be able at a later date, and based on appropriate data, to determine whether it would not be advantageous to define a limited number of possible route structures which could be related to specific operating conditions in the NAT Region, especially as regards meteorological conditions.

1.51 The Group noted that the possible advantages provided by using a system of fixed or semi-fixed tracks might include the following : flight planning could be done later than at present giving the benefits of later MET data and more accurate forecasts ; long and complicated track messages would be eliminated, reducing the AFTN communications load ; air/ground messages regarding clearance and position reporting could be simplified, reducing the possibility of error ; transition traffic flow could be rationalized making for more effective ATC organization in continental FIR's adjoining the NAT area. The main disadvantages would lie in the area of penalties to flights and the system of fixed or semi-fixed tracks would not be desirable if the average penalties to operators were significantly greater than the penalties suffered under the present system, unless these were balanced by benefits in another direction. Another factor to be taken into consideration before a final assessment of the balance of advantages and disadvantages could be made, would be to consider whether a better track loading could be achieved and consequently a more efficient and economical use of the air space obtained.

1.52 The Group was of the opinion that independent studies on this subject, such as those initiated or about to be initiated by Canada, Spain and the United Kingdom should be encouraged. It further considered that in the course of such work it would first be necessary to establish the extent to which meteorological situations occurring in the NAT Region could be classified into a small number of basic patterns. This is fundamental in determining whether one single or a number of

track structures can be devised and satisfactorily utilized in the various MET situations, bearing in mind that other factors may from time to time impose restrictions on the flexible use of any track structure. Actual minimum time tracks (MTT) and track systems used in various MET situations would need to be examined and compared, on the basis of penalties suffered, with the proposed track systems. These studies would obviously take considerable time and effort to conduct and would require the examination of adequate samples of MET data, MTTs and actual track structures used. It was therefore agreed that this subject should be included in the work programme of the Group.

CONCLUSIONS

1.53 With regard to this Agenda Item, the Group came to the following conclusions :

a) That the working paper submitted by Spain to this meeting on the question of the organization of the traffic in the NAT Region be retained as supporting documentation by the Group until such time when this subject is next reviewed by the Group (see paragraph 1.6) ;

b) That the problems posed by traffic crossing the organized track system be kept under review especially with regard to developments which may result from the extended use of composite separation (see paragraph 1.12) ;

c) That States concerned will take all necessary measures, both as far as technical communication facilities and procedural arrangements are concerned to obtain an earlier receipt of flight plans and departure messages regarding messages originating in the Caribbean area and bound for the NAT Region, and that necessary coordination measures be agreed between the NAT OACs concerned with these flights and the appropriate ACCs in the Caribbean area (see paragraphs 1.13 and 1.36) ;

d) That Canada, Portugal, the United Kingdom and the USA will take all necessary measures and this as early as possible, to apply the procedures regarding traffic joining the organized track system and originating in the Iberian Peninsula or East thereof (see paragraph 1.19) ;

e) That States concerned by the problem of integration of air traffic from aerodromes close to the NAT boundary into the flow of the North Atlantic will take all necessary measures, when necessary in cooperation with each other in order to resolve it (see paragraphs 1.27 and 1.28) ;

f) That all States concerned with the question of familiarisation of senior ATS personnel providing control of air traffic engaged in NAT operations will take all necessary measures to obtain full application of Recommendation 10/32 of the NAT V RAN Meeting (see paragraph 1.29) ;

g) That, with regard to the ATS direct speech circuit listed below, States concerned will take all necessary measures to have them established so that continuously reliable communications exist between the ACCs concerned :

i) between Santa Maria OAC and Shanwick OAC (see paragraphs 1.18 and 1.30) ;

ii) between Santa Maria OAC and Gander OAC (see paragraph 1.31) ;

iii) between Reykjavik ACC and Stavanger ACC (see paragraph 1.33).

h) That the United Kingdom and the USA will review the possibility of providing a direct speech circuit between Shanwick OAC and New York OAC in order to further facilitate coordination of the traffic flow within the organized track system (see paragraph 1.32) ;

i) That the NAT Traffic Forecasting Group will review, as early as possible the proposals made in paragraphs 1.37 to 1.45 for the modification of its ten-year traffic forecast and comply with these proposals, as far as this is possible from the forecast covering the period from 1972 to 1981 ;

j) That States and operators concerned with the question of the establishment of a semi-permanent or permanent ATS route structure in the NAT Region, continue their studies on this subject, or initiate them, as required, in order to permit an early determination of their feasibility.

Summary of Agenda Item 2 : Review of the situation with regard to use of composite separation

2.1 The Canadian Member informed the Group that preparations for the initial application of composite separation in the organized track system by Gander OAC, in coordination with Shanwick OAC, had now progressed to the point where the use of one composite track was planned to be used as of 1 April 1971. A NOTAM, whose text had been coordinated with the United Kingdom, was to be issued shortly. He also mentioned that the application of composite separation was requiring the provision of additional entry points into the NAT Region on the western side of the North Atlantic and that, in order to define these, additional radio navigation aids were required. In this respect, he pointed out that a proposal for amendment of the NAT Regional Plan regarding their inclusion therein would be made by Canada.

2.2 The Canadian Member also stated that, with the use of a composite separation, on extension of the use of radar within that area, where aircraft on composite flight levels had to be adjusted to the flight levels used in the continental system, was required. Measures to remote radar information from the appropriate radar sites to the Moncton ACC were under way and it was expected that they should be completed in Summer 1971.

2.3 As regards the southern part of the entry area into the NAT Region via the Gander Oceanic CTA, it was pointed out that there, the technical possibility for the provision of a second track, based on composite separation, existed already but that its implementation was made dependent on experience gained with the use of the initial composite track and on the possibility of Shanwick OAC to make provision for such a track in its CTA. In this respect, he also suggested that the United Kingdom study the possibility of providing more flexibility as to the establishment of the entry points into the organized track system on its side of the North Atlantic since he believed that this might render the organized track system more efficient.

2.4 With respect to the levels to be used on the initial composite track, the Canadian Member stated that these will normally be FL 320, FL 340 and FL 360.

2.5 The United Kingdom Member confirmed everything the Canadian Member had said and which concerned the coordinated use of composite separation by Shanwick and Gander OACs. He also stressed the need for progressive implementation of this type of separation, commensurate with the experience gained in its use, both by controllers and pilots. As regards the desired flexibility of the establishment of entry points into the NAT Region, mentioned by the Member of Canada, he believed that the established entry points into the organized track system on the European side would have to remain fairly fixed. He saw however the possibility of establishing two composite tracks with their respective entry points over Cork and Eagle Island. He also pointed out that even the provision of the initial single composite track was expected to cut the present overall penalties, experienced in the NAT Region by all operators (and which were estimated to be in the order of 5 million dollars yearly), by a considerable amount.

2.6 The provision of further composite tracks depended, as far as Shanwick OAC was concerned, on the provision of extended radar coverage in the transition area in order to resolve the resulting exit, entry and transition problems and work on this was in progress in close collaboration with Ireland. In this respect he recalled that the SSR at Shannon played a major role in the use of composite separation.

2.7 IATA stated that they were fully in agreement with the gradual implementation of composite separation as now envisaged by Canada and the United Kingdom in order to permit both, pilots and controllers, to gain the necessary experience. They were however somewhat concerned about the slow progress which has been made by the United Kingdom as regards the provision of an adequate number of suitable access tracks in the transition area extending between the continental ATS route network and the exit/entry points of the NAT organized track system. The same concern was voiced by the Irish Member who pointed out that, if this question was not satisfactorily resolved between Ireland and the United Kingdom, the increased amount of traffic, expected within the Shannon CTA as a result of the use of composite separation, may well pose serious traffic congestion problems to Shannon ACC because of its inability to channel this traffic into the United Kingdom ATS route network. A particularly critical point in this respect was the area of Strumble.

2.8 The Irish Member also pointed out that the SSR facility at Shannon has been provided by EUROCONTROL and that plans existed for the technical improvement of this installation (including the provision of a second antenna head) which, while being carried out, may well put this facility out of service for a prolonged period. The Group noted this and expressed the firm hope that scheduling of this work could be done so that it would not coincide with peak traffic periods in the NAT Region.

CONCLUSIONS

2.9 The Group came to the following conclusions :

a) It noted with satisfaction the efforts which had been made by Canada and the United Kingdom regarding the application of composite separation ;

b) It hoped that the United Kingdom would continue its efforts, where required in collaboration with Ireland, to :

i) establish, as a matter of urgency, a satisfactory number of access routes, and develop required procedures for their use, in the transition area between the NAT exit/entry points and the European ATS route network to permit an expeditious flow of air traffic in this critical area ;

ii) make any necessary arrangements required for the future extension of the application of composite separation (including the provision of extended radar coverage) ;

c) It hoped that necessary action would be taken by the States concerned to have the changes resulting from b) above included in the EUM Regional Plan at the occasion of the EUM VI RAN Meeting ;

d) It hoped that Ireland, in collaboration with EUROCONTROL, would be able to arrange for the necessary technical modifications to the SSR at Shannon at such a time when this interfered least with NAT traffic ;

e) It hoped that a second track, based on the use of composite separation, would be included in the NAT organized track system as soon as operational experience and the resolution of the problems stated under b) i) permitted.

Summary of Agenda Item 3 : General review of the situation with regard to the introduction of SST operations in the NAT Region.

3.1 The Group noted Recommendation 19/2 of the NAT V RAN Meeting regarding the convening of a limited NAT SST Meeting approximately one year prior to the start of scheduled operations by SST aircraft in the NAT Region. In an endeavour to assist ICAO in determining a date and the scope of such a meeting, the Group briefly reviewed the situation as to progress made with the development of SST aircraft based on latest information available to the Group.

3.2 With regard to the timing of the LIM NAT SST Meeting, the Group believed that it should be planned for some time in the first quarter of 1973. However this date was based on the present time-scale envisaged for the "Concorde" project only and would possibly have to be advanced should other developments in the field of SST aircraft make this advisable.

3.3 As regards the scope of the Meeting, the Group felt that, without prejudice to its ultimate agenda, it would have to cover at least those points covered in Recommendations 10/8, 10/19, 10/24 and 10/27 of the NAT V RAN Meeting and that the Group should contribute supporting documentation for the LIM NAT SST Meeting and that a meeting of the NAT/SPG for this purpose should therefore be held about 6 months prior to the LIM NAT SST Meeting.

CONCLUSION

3.4 The Group agreed that its Chairman should send a letter to the Secretary General of ICAO, bringing the above views to his attention.

*Summary of Agenda Item 4 : Determination of the future work programme of the Group

4.1 Based on the opinions expressed during the exchange of views on the future work programme by all participants in the meeting as reflected in paragraphs 6.33 to 6.37, the Group confirmed that, in general, its work should be governed by the "Elements to be included in long-term systems planning" contained in paragraph 3.3 of the Report of the NAT V RAN Meeting (see ICAO Doc 8879, NAT/V, pages 3-4 to 3-5). However for the reasons stated in paragraph 6.34 it also agreed that its immediate work programme should be limited to those items on which it was expected that useful work could be done within the next two to three years.

CONCLUSION

4.2 As a consequence, the following items were listed as deserving immediate attention by the Group and thus were agreed to constitute its work programme :

a) Problems related to the operation of SST aircraft in the NAT Region ;

b) Review of the air reporting procedures applicable in the NAT Region and related communication questions, especially as regards the critical loading of the HF air-ground communication channels ;

c) Review of the situation with regard to :

i) the use of composite separation in the NAT Region ;

ii) problems caused by traffic joining or crossing the organized track system ;

iii) problems in the transition areas immediately adjacent to the boundary of the NAT Region ;

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*This item was considered by members of the Group only.

d) Review of future possible ATS systems in the NAT Region and their cost effectiveness, having regard to :

i) the navigational performance of aircraft equipped with INS and operating in the Region ;

ii) the possibility of establishing a semi-permanent or permanent ATS route structure ;

iii) the organization of the airspace ;

iv) the possible use of satellite systems.

*Summary of Agenda Item 5 : Arrangements for the next meeting

5.1 Taking into account the work programme, as reflected in the Summary of Agenda Item 4 and the views expressed on the timing of the LIM NAT SST Meeting in the Summary of Agenda Item 3, the Group agreed that the tentative arrangements described below should be retained for planning purposes as to its meeting schedule and the subjects to be discussed.

Meeting schedule

5.2 As indicated in paragraph 6.33, the Group strongly believes that meetings should only be held if :

i) from supporting documentation or otherwise, it is apparent that sufficient progress has been made in those subjects of interest to the Group that a meeting may arrive at useful conclusions and thus contribute to the improvement of the NAT air navigation system, or

ii) new problems require a coordination of views in order to organize the approach made to them and agree on a joint work programme to avoid duplication of efforts or their direction onto aspects which are not generally believed to be applicable.

5.3 With this in mind and assuming that the LIM NAT SST Meeting may be held some time in Spring 1973, the Group agreed that a meeting should tentatively be planned for some time in or about October 1972 which should primarily be devoted to the preparation of supporting documentation for the LIM NAT SST Meeting (see the Summary of Item 3).

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*This item was considered by members of the Group only.

5.4 It was however also agreed that, should the LIM NAT SST Meeting be held in 1973, there would be little use for a meeting of the NAT/SPG in that year because of the need to await the approval of the LIM NAT SST recommendations by the Council and the Air Navigation Commission of ICAO. The Group's subsequent meeting could therefore be held at the earliest some time in 1974. This, in turn, was however believed to postpone consideration of at least Items 4.2 b) and 4.2 c) of its work programme (see Summary on Agenda Item 4) to an unacceptable extent.

5.5 As a consequence, it was therefore agreed that, again tentatively, it should be planned to hold a further meeting of the Group some time early in 1972 but only under the following conditions :

i) this meeting should be as short as possible, preferably not exceeding a duration of 5 days ;

ii) it should be held at the Paris Office of ICAO ;

iii) supporting documentation submitted prior to this meeting indicated that valid practical conclusions could be reached for the subjects considered.

5.6 As far as the detailed timing of the above meetings was concerned, it was agreed that this should be left to the Chairman, in conclusion with the members and the secretary. However the timing of the meeting early in 1972 should take into account the time needed to implement any of its resolutions in good time prior to the beginning of the Summer peak traffic in the NAT Region.

Agenda Items to be considered

5.7 From the above it is obvious that the main points considered by the tentative meeting in early 1972 should be :

a) Review of the air reporting procedures applicable in the NAT Region and related communication questions, especially as regards the critical loading of the HF air-ground communication channels.

Note : This should include the situation in the HF field after the EUM VI RAN Meeting.

b) Review of the situation with regard to :

i) the use of composite separation in the NAT Region and those problems in the adjacent transition areas resulting therefrom ;

ii) traffic joining or crossing the organized track system in the light of measures agreed at the 7th Meeting of the Group.

5.8 The main item for consideration by the meeting to be held about October 1972, should consist of a review of problems related to the operation of SST aircraft in the NAT Region and preparation of appropriate supporting documentation for the LIM NAT SST Meeting.

Participation in the 1972 meetings

5.9 The Group agreed that, without prejudice to any later decision taken in this respect by the Group, invitations to attend the meeting planned for early 1972 should be extended to Portugal, IATA, IFALPA and IANC.

5.10 As regards attendance of the meeting planned for October 1972, this question was left open at this time and it was agreed that it should be resolved once the more detailed preparations for this meeting were made.

CONCLUSIONS

5.11 The Group agreed to the following tentative schedule of meetings, covering 1972 and 1973 :

a) A short meeting should be planned for early 1972 in order to review air reporting and the situation with respect to composite separation and traffic joining or crossing the organized track system ;

b) A further meeting should be planned for about October 1972 in order to review the situation with regard to SST aircraft in the NAT Region, on the understanding that its final date depended on the decision, taken within ICAO, as to the convening date of the LIM NAT SST Meeting ;

c) Subject to the situation described in b) above, no meeting is planned for 1973.

Summary of Agenda Item 6 : Any other business

6.1 Under this Agenda Item the Group considered 6 particular problems which had been brought to its attention and held an exchange of views on its future work programme in the presence of all participants in the meeting prior to its consideration of Agenda Item 4 in closed session. The Summary on this Item therefore consists of 7 sub-sections, each devoted to one particular subject.

Lack of flight plan information and departure messages concerning NAT flights

6.2 Portugal provided information to the meeting indicating that Santa Maria OAC frequently did not receive flight plan information and subsequent departure messages on NAT flights which, in the course of their flight, entered the Santa Maria Oceanic CTA. It was explained that this situation created considerable difficulties as to the integration of this traffic in the planned traffic flow and, apart from increasing the workload of the controllers, also posed coordination and communication problems.

6.3 A review of the data provided by Portugal seemed to indicate that the difficulties were not due to the fact that the operators or pilots concerned did not submit their flight plans in good time, or that the ATC units of the point of departure did not originate the required departure messages, but were rather due to the fact that Santa Maria OAC, erroneously, was not included amongst the addressees of the respective ATS messages. One possible explanation was believed to be that original flight planning by the pilots concerned had not envisaged entering the Santa Maria Oceanic CTA while the subsequent Oceanic ATC clearance required them to do so due to the flight path assigned to the aircraft in question.

6.4 It was therefore agreed that procedures should be developed which would ensure that, in those cases, an appropriate ATS message would be initiated by that ATC unit first becoming aware of the difference between the flight planned track and that assigned to the aircraft in its oceanic clearance, i.e. the oceanic control center issuing the oceanic clearance.

6.5 It was also agreed that, where it was found that the non-receipt of a flight plan or departure message was due to a genuine error in the addressing of the relevant ATS message, the OAC concerned should initiate an appropriate service message to the originating communication facility requesting corrective action.

CONCLUSION

6.6 The Group hoped that Canada, Portugal, the United Kingdom and the USA would review the procedures regarding the addressing of ATS messages concerning NAT flights with a view to developing those supplementary procedures required to cover the initiation of ATS messages to those OACs affected by a NAT flight as a consequence of its oceanic clearance when this would not have been the case based on the route originally requested by the pilot.

Note: The above does not cover the situation regarding flight plan information and departure messages for flights originating in the Caribbean area and referred to in the Summary of Agenda Item 1 (see paragraphs 1.13, 1.36 and 1.53 c)).

Application of reduced longitudinal separation

6.7 The United Kingdom Member raised the question whether it was generally understood that the possibilities for reduction of longitudinal separation mentioned in sub-paragraph 3 a) of paragraph 1.2.1 of Part 2 of Doc 7030 (as amended by Amendment 128), also applied to those cases where the preceeding faster aircraft, prior to reaching its assigned cruising level, was cleared to climb through the level or levels occupied by one or more succeeding slower aircraft. Although such a situation was expected to occur only very rarely, he nevertheless felt that it should be clarified whether, in such a case, the application of reduced separation was permissible, especially in view of the fact that aircraft may effect such climbs at Mach numbers which are lower than those on which their oceanic clearance has been based.

6.8 After pointing out that the regional supplementary procedures stated specifically that any change in Mach number exceeding ± 0.01 should be notified to ATC and after assurance from IATA that the aircraft concerned might, under most circumstances, be

capable of maintaining their approved Mach No. even while changing flight levels, the Group agreed that, at this time, no change to the existing procedures should be proposed. However, it was believed advisable to draw pilots' attention to this assumption and to inform the ICAO Secretariat Working Group, engaged in a short-term revision of the specifications regarding separation in Doc 4444, of this question so that it may take necessary action, should it be found that the conditions existing in the NAT Region were not generally applicable.

CONCLUSIONS

6.9 The Group hoped that Canada, Portugal, the United Kingdom and the USA would publish information circulars drawing pilots' attention to the assumptions upon which the application of reduced longitudinal separation was based in those cases where a preceeding faster aircraft was cleared to climb through the level or levels of one or more successive aircraft.

6.10 The Group requested its secretary to bring the above problem to the attention of the ICAO Secretariat Working Group engaged in the short-term revision of the separation specifications in Doc 4444 in order for it to take appropriate action.

DME air-to-air ranging

6.11 IFALPA, in a paper presented to the meeting, invited the Group to approve a data collection programme of a technical nature regarding DME air-to-air ranging. In this programme, operators would modify the DME airborne equipment of a few aircraft so that the vast majority of unmodified aircraft could be used to assess the effective range of DME equipment in this application. Such a test would involve low cost and would not affect current ATC practices. Reference was made to a test programme carried out in the USA by NAFEC.

6.12 After having considered the advantages and disadvantages of this technique in some detail, and especially its procedural aspect, the Group came to the conclusion that the application of DME air-to-air ranging would not result in sufficient benefits with respect to the present situation and that, for future developments in the field

of longitudinal separation, greater contributions might be expected from the use of data obtained from inertial navigation systems (INS), coupled with an air-ground data link. In this respect, the US Member of the Group stated that INS derived data, obtained via an air-ground data link was being used experimentally with considerable success by the Oakland OAC in order to determine the relative position of flights operating within the Oakland Oceanic CTA in the PAC Region.

CONCLUSION

6.13 The Group agreed that even a limited application of the DME air-to-air ranging technique in the NAT Region would not be justified by the possible benefits which could be derived from its use.

Continuation of operation of Loran A chains in the NAT Region

6.14 IATA, in a paper submitted to the Meeting, had posed the question whether there was any definite information available as to the continued operation of the Loran A chains in the NAT Region since unofficial information seemed to indicate that changes could take place in the not too distant future.

6.15 The US Member informed the Group that the US military requirement for the operation of these chains would cease to exist in 1974 and that a military gradual phase-out plan will be put into operation as of 1971. This meant that provisions in the US military budget for the operation of these chains would end at the end of 1974. Should it be found however that a civil requirement for the continuation of Loran A chains or stations located physically within the territory of the USA existed after that time, the USA were prepared to continue their operation but the costs for this would be likely to be included in the user charges intended to be levied from users of their air and maritime navigation facilities.

6.16 As regards Loran A chains or stations now operated or financed by the USA but not located within US territory, it was expected that there would be negotiations with the governments concerned and it was then up to these governments to make their decision as to the future disposition of the facility or facilities in question.

6.17 He also pointed out that Loran C chains would continue in operation after 1974 for an undetermined period and that the Omega system was likely to be operated for some years to come. In this respect he referred to the "National Plan for Navigation" of the USA which he was prepared to provide to anyone upon request.

6.18 IATA and IFALPA stressed the need to retain the navigational environment in the NAT Region at its present level at least until such time when it was definitely agreed that a specific facility or navigation system was no longer required.

6.19 The members from Canada, France, Portugal and the United Kingdom stated that the positions of their governments were likely to be similar to that adopted by the USA both as regards the operation of their respective Loran A facilities or chains and as regards the question of charges.

CONCLUSION

6.20 The Group noted that, at least until the end of 1974, the continuation of the existing Loran A chains in the NAT Region was ensured and that it would only depend on the formulation of an appropriate operational requirement, if it still existed at that time, to extend their operation beyond that date.

Number and length of messages exchanged on the air-ground communication channels in the NAT Region

6.21 Under this subject, IATA presented a paper to the meeting in which two main difficulties were discussed regarding the communication channels in the NAT Region. One concerned messages originating from aircraft and addressed to their operators, the other, messages originated on the ground and sent to aircraft. In the first category IATA pointed out that despite Recommendation 16/33 of the NAT V RAN Meeting a number of operators, some of them non-IATA Members, required their aircraft to include full details of Section 2 in any of their air reports, thus loading the available communication channels unnecessarily. IATA therefore requested that the Group addressed itself to all States whose operators are engaged in NAT operations requesting them to ensure full compliance with Recommendation 16/33 of the NAT V RAN Meeting.

6.22 A further point mentioned in this respect was the observed tendency of ocean station vessels to request aircraft to provide them with more information than that required to render the service which they had been requested to provide. It was therefore agreed that the secretary of the Group should bring this matter to the attention of the ICAO Secretariat so that necessary follow-up action on Recommendation 16/33 would be initiated.

6.23 Similar action was also requested as far as ground messages initiated by operators to their aircraft was concerned. There again it was felt that in some cases excessive use was made of this possibility or that none essential data was included (Recommendation 16/33 of the NAT V RAN Meeting refers). Messages which deserve particular scrutiny in this respect were flight analysis messages and actual and forecast weather messages originated by the operator.

6.24 Finally it was pointed out that the effective range of the ATIS broadcast channel provided at New York was very limited. As a consequence and due to the requirement of pilots to have this information earlier than it was now possible to obtain it from the ATIS broadcast there was still a frequent requirement for numerous aircraft to obtain the relevant information on a request-reply basis with the result that the VHF air-ground communication channels concerned were overloaded. It was therefore suggested that, for instance the provisions of an extended range scheduled broadcast on the New York ARINC channel 129.9 MHz might better cater for the needs of NAT flights for this information when they approached New York.

CONCLUSIONS

6.25 The Group hoped that the ICAO Secretariat and subsequently States concerned will take all necessary action in order to obtain a better compliance with Recommendations 16/33 and 16/35 of the NAT V RAN Meeting by all operators concerned.

6.26 The Group further hoped that those responsible will consider action to provide an extended range VHF broadcast of New York ATIS information.

Provision of a discrete SSB frequency family for the NAT Region

6.27 In a paper presented to the Meeting by the Irish Member it was pointed out that experience had shown that Recommendations 16/4 and 16/6 of the NAT V RAN Meeting have not proved very realistic. Statistics provided by Ireland showed that, while the overall busy day communication load on the HF frequencies in the NAT Region was slightly lower in 1970 compared with 1969, the distribution of the total load over the various families of frequencies had shifted considerably. In fact, while the traffic load on families B, C and D was declining, it had sharply increased in family A and this for the simple reason that more aircraft were now using SSB.

6.28 For a number of reasons, not the least of which is the requirement for new equipment and additional personnel, it was however felt that the proposal of the ICAO Secretariat for the creation of a new SSB family in the NAT Region with frequencies, selected amongst those reserved worldwide for SSB use, was not satisfactory. In fact, there was no hope whatever to have this proposal implemented by the time of the Summer peak traffic period of 1971.

6.29 The Irish Member therefore suggested that the existing family A of the NAT Region be reserved exclusively for the use of SSB equipped aircraft and that families B, C and D should continue to be exploited in the existing manner. This was expected to provide an immediate relief to the present unsatisfactory situation without requiring any additional equipment or personnel. In addition, by withdrawing the 13 MHz channel form service because of its limited utilization and replacing it as early as possible with a 5 MHz or 6 MHz channel (possibly from EUM family B), it was expected that the short-term requirements of the next few years would be adequately catered for. Once more, this course of action would not require any new equipment.

6.30 Informal inquiries made by Ireland of all other HF communications stations concerned in the NAT Region had shown that these were in agreement with the above proposals. The Group also supported the Irish proposal as well as Portugal and IATA.

CONCLUSIONS

6.31 The Group therefore requested the Irish Member to take necessary action so that a proposal along the lines indicated above be formally forwarded to ICAO by Ireland as early as possible so as to ensure that the proposed arrangements can be implemented, prior to the beginning of the Summer peak traffic period.

6.32 It was further agreed that the proposal by Ireland should also cover the addition of a 5 MHz or 6 MHz channel to family A and the consequential withdrawal from service of the 13 MHz channel of this family.

Exchange of views on the future work programme of the Group

6.33 When arranging its seventh Meeting, the Group had agreed to arrange for an exchange of views amongst all participants in that meeting on its future work programme in order to be able to take those views into account when taking its decision on this subject under Agenda Item 4. After having confirmed its intention to base its work on the "Elements to be included in long-term systems planning", contained in the report of the NAT V RAN Meeting, it was however pointed out that, since the work of the Group depended essentially on contributions made by its members, it would be useless to hold meetings when there was nothing substantial to be discussed.

6.34 In addition, commitments, as far as the work programme was concerned, to undertake studies on which tangible results could not be expected within the next two or three years were believed to be more of a nuisance than to assist in obtaining improvements of the air navigation system in the NAT Region, since they tended to deviate attention from those issues where real progress could be achieved.

6.35 After detailed discussion, it was therefore found that there were only four major subjects which met the above criteria and these were :

a) Problems related to the operation of SST aircraft in the NAT Region.

b) Air reporting procedures and related communication questions.

c) Expanded use of composite separation and related problems.

d) Future possible ATS systems and their cost effectiveness.

6.36 As to a proposal, made by IATA, to hold meetings of the NAT/SPG more frequently but with a shorter duration this proposal was not retained because of the considerations contained in paragraph 6.33 above.

CONCLUSION

6.37 The Group agreed to take into consideration the above thoughts when considering its future work programme (see the Summary on Agenda Item 4) and when making its arrangements for the next meeting (see the Summary of Agenda Item 5).

*Summary of Agenda Item 7 : Election of the next Chairman

7.1 On a proposal by Mr. G. Jones, member of Ireland, and seconded by Mr. J.G. ten Velden, member of the Netherlands, the Group re-elected unanimously Mr. J.F. Sapin, the member of France, as the Chairman of the Group until the end of the next meeting.

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*This item was considered by members of the Group only.

LIST OF NAMES AND ADDRESSES OF THE MEMBERS OF THE NORTH ATLANTIC SYSTEMS PLANNING GROUP/

LISTE DES NOMS ET ADRESSES DES MEMBRES DU GROUPE DE PLANIFICATIONS COORDONNEES ATLANTIQUE NORD

Name/ Nom	State/ Etat	Address/ Adresse	Remarks/ Observations
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Mr. J.F. Sapin	FRANCE	Chef du Centre régional de la navigation aérienne Boîte postale 108 94 - ORLY Aérogare Tel. : 402-9232 707-4759 OP	Chairman until the end of the eighth meeting/ Président jusqu'à la fin de la huitième réunion
Mr. G. Jones	IRELAND	Aviation Radio Division 34/37 Clarendon St. DUBLIN 2 Tel. : Dublin 774841 or 48888 Ext. 359	
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