SUMMARY OF DISCUSSIONS AND CONCLUSIONS

OF THE

SEVENTEENTH MEETING OF THE NAT SYSTEMS PLANNING GROUP

(Paris, 10-21 March 1980)

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1. Introduction

1.1 Convening and Conduct of the Meeting

1.1.1 The Seventeenth Meeting of the NAT/SPG was held in the European Office of ICAO from 10-21 March 1980. Further to the usual participation by the Members of the Group, IATA and IFALPA, the Group had also invited Denmark, Iceland, Norway, Spain, Portugal and the USSR, as well as IAOPA to attend this Meeting because it was felt to be useful if their views were also taken into account on some of the subjects discussed. With the exception of the USSR and IAOPA, all invited States and International Organizations were present.

1.1.2 The Meeting was chaired by Mr. J.G. ten Velden, the Member of the Netherlands and a list of participants is given on page viii. The Meeting of the Group was conducted throughout as an open Meeting with all participants present.

1.1.3 For some subjects, the Group created ad hoc drafting groups of varying composition. The more important groups were :

a) a drafting group charged with the scrutiny of observed gross errors of which Mr. R. Croxford of the UK acted as Rapporteur ;

b) drafting groups dealing with mathematical aspects of lateral and longitudinal separation of which Mr. A. Pool of the Netherlands and Mr. J. Niblett of the UK acted as Rapporteurs respectively ; and

c) a group charged with the initial review of Agenda Item 6 of which Mr. R. Whitford of Ireland acted as Rapporteur.

1.1.4 Mr. P. Berger served as Secretary of the Meeting, assisted by Messrs. W. Arcangeletti and E. Cerasi . All three are Members of the European Office of ICAO.

1.1.5 While on a visit to the European Office of ICAO, Mr. Langhorne Bond, the Administrator of the Federal Aviation Administration of the USA took time out to pay a short call on the NAT/SPG. After having been welcomed by the Chairman of the Group, Mr. Bond assured the Group of the high esteem in which the NAT/SPG was held by the USA and of the continued willingness of his Administration to contribute to its work. In his informal remarks, he also said that, provided fuel conservation benefits could be realized, the FAA would not be averse to undertaking a technical re-consideration of the use of aeronautical satellites for ATC purposes . He expressed his belief that it would be interesting for the NAT/SPG to keep this in mind in its future work. The Group expressed its appreciation to Mr. Bond for the time he had taken to pay it a call.

1.6 During the course of the Meeting, the European Office of ICAO received a letter concerning commentsmade by Sweden with regard to the NAT/SPG 16 Summary. In this letter Sweden regretted that, at NAT/SPG 16, it had not been possible to propose an early date for the application of 60NM lateral separation in the NAT Region and referred to the inevitable economic consequences this had on the operators flying in the NAT Region. The content of this letter was brought to the attention of the Group at this Meeting.

2. Composition of the Agenda

2.1 Prior to the Meeting, a draft Agenda had been circulated, which had been prepared based on proposals received from Members of the Group for items which needed consideration at this Meeting. In the course of the Meeting it became however apparent that a number of operational matters of current interest also needed review and they were therefore included in the Agenda as they were brought forward.

AGENDA

Item 1 : Proposed action on lateral separation in the MNPS airspace of the NAT Region.

Item 2 : Review of the consolidated NAT MNPS Operations Manual and the NAT Guidance material in general.

Item 3 : Proposed action on longitudinal separation between turbo-jet aircraft in the NAT Region.

Item 4 : Proposed action regarding crossing and joining air traffic operating in the NAT Region South of the organized track system.

Item 5 : Proposals for uniform provisions regarding temporary airspace reservations in the NAT Region.

Item 6 : NAT aeronautical telecommunications

- Review of developments related to the termination of the DEN/ICE/CAN cable contracts.
- Review of the HF air-ground communication situation in the NAT Region.
- Review of the results of the trial application of fixed message formats in pilot's reports and proposals for further action.

Item 7 : Operational matters of current interest.

- Status of proposals for amendment of the NAT RAC SUPPs.
- Compatibility of Oceanic ATC systems.
- Requirement by operators to provide advance information on NAT tracks.
- Review of Polar Route OSCAR and its East-ward extension to a point or points in Scandinavia.
- Fuel conservation measures, including the use of step-climb techniques.

- Determination of the need to review MNPS certification procedures prior to the change of the present OMEGA station configuration.

- Review of the feasibility to extend MNPS airspace in the NAT Region to the North Pole.

- Review of latest developments regarding the OASIS project and other related studies.

- Air Race Paris-New York-Paris.

- Questions regarding NAT Traffic Data Collection

- Delegation of a portion of Shanwick OCA to London ACC.

- Consolidated presentation of the VHF GP coverage in the NAT Region at 15000 feet.

- Reduction of lateral separation between SST aircraft.

Item 8 : Future work programme and arrangements for the next Meeting.

LIST OF CONCLUSIONS

LIST OF CONCLUSIONS

(cont.)

LIST OF PARTICIPANTS
LISTE DES PARTICIPANTS

CANADA

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Mr. J. M. Fonseca

UNITED KINGDOM/ROYAUME-UNI

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Mr. L. Dunn
Mr. A. Lavan
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Mr. H. Sweetman
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Agenda Item 1 : Proposed action on Lateral Separation in the MNPS airspace of the NAT Region

1.1 Introduction

1.1.1 As already agreed at NAT/SPG 16, this item on lateral separation was given primary consideration at this Meeting and this was done under the following major subjects :

a) feasibility of the application of 60NM lateral separation in the NAT Region ;

b) determination of a specific date for the application of this separation ;

c) consequences from a) and b) on the monitoring activities by States between now and the date selected in accordance with b) ;

d) provisions for a possible co-ordination meeting prior to the application of 60NM lateral separation ;

e) monitoring by Provider States after the application of 60NM lateral separation ;

f) up-dating of the methodology used for the assessment of risk with the new lateral separation ; and

g) amendment of the special routes for aircraft with partial loss of navigation capability.

1.2 Feasibility of 60NM Lateral Separation

1.2.1 In accordance with past practice the Group, when considering the feasibility of 60NM lateral separation, agreed that this should be based, as was done at NAT/SPG 16 on a review of navigational errors observed by radar and on a scrutiny and classification of these errors according to their nature and to the extent that they could be determined. To this extent, the Group was provided with information by the Member of the U.K. on both the number of navigational errors observed by all monitoring radar stations in the region and with a proposal for a revised classification of such errors for use in their subsequent scrutiny.

1.2.2 The information on navigation errors provided by the Member of the U.K. showed that during the period from 1 September 1979 to 29 February 1980 a total of 11 errors in navigation of 30NM or more off track had been observed in a total of 31048 observed flight operations. Of these 11 errors 4 fell in the band of 50-70NM off track.

1.2.3 Before proceeding with a detailed scrutiny and classification of these errors the Group noted that, based on experience, the classification of errors as adopted at NAT/SPG 16 (paragraph 1.2.5 of Summary/16 refers) had not been found to be entirely satisfactory both as regards a sequencing of errors and their designation. After a careful review, it was therefore agreed by the Group that as of now the following revised classification of errors should be adopted on the understanding that this sequence and designation should not be changed in future without pressing need.

Class	CAUSE
A	Aircraft not certified for operation in MNPS airspace
B	ATC system loop errors
C	Equipment control error, including way-point insertion error
D	Other navigation errors, including equipment failure notified to ATC in time for action
E	Other navigation errors,including equipment failure notified to ATC too late for action
F	Other navigation errors , including equipment failure of which notification was not received by ATC

1.2.4 The scrutiny of the 11 observed errors showed that these could be classified as follows :

Class	Error	
	≧ 30NM	of these 50-70NM
A	2	1
B	2	1
C	4	1 *
F	3	1
		Sub-total 4
Total	11	

* not a way-point insertion error

1.2.5 Using the MNPS criteria in comparing the above errors against the total number of 31048 observed flights, it was calculated that the total number of flights observed would allow for 16.4 observed errors equal to or greater than 30NM and for 4.03 observed errors in the 50-70NM band. In view of this the Group concluded that, for the period considered, the criteria for the application of 60NM have been met taking into account the cautiousness of the method of assessment used and the fact that the values from previous monitoring periods showed, in general, a decreasing trend in error rate, the Group agreed that 60NM lateral separation could now be applied.

1.2.6 While not questioning the facts as stated above, the Representative of IFALPA pointed out that the monitoring period, which was considered when making the decision that the MNPS criteria had been met, did not cover a period of peak traffic density as was the case in the past. In his view, the trend towards improvement in the gross error situation, which was evident from the recent survey results, could not be confirmed until monitoring data covering the peak Summer traffic period of 1980 had been analysed. In keeping with the agreements reached at the LIM NAT RAN Meeting 1976 and in reply to the reservations expressed by IFALPA, it was, however, pointed out that :

a) monitoring was a continuing obligation for Provider States ; and

b) Provider States were under the obligation to review the navigational situation as a matter of urgency and to agree on appropriate corrective action, should it be found that it deteriorated to a point which made such action necessary.

1.3 Date of Implementation

1.3.1 After having reached agreement on the possibility to now firmly propose the application of 60NM lateral separation in the MNPS airspace of the NAT Region, the Group proceeded to the determination of the most suitable date which it should propose to ICAO in this respect. It noted that at NAT/SPG 16 it had proposed the target date of 27 November 1980 (Conclusion 16/4 in Summary/16 refers) and after extensive discussion of all relevant aspects, including those of organization measures within the OACs concerned, need for adequate training of personnel , adequate advance publication and familiarization etc. it came to the conclusion that the most suitable date to be proposed to ICAO for this purpose was the AIRAC date of 30 October 1980 with a publication date of the relevant NOTAMs on the AIRAC date of 4 September 1980 by States concerned.

1.3.2 While on this subject,the Group was also informed that the USA had formally proposed to ICAO that those parts of the related amendment to the NAT RAC SUPPs dealing with organization and operation of the organized track system which had been so far kept in suspense because of the uncertainty regarding the use of reduced lateral separation be given advance application and that processes had been started with ICAO to effect this on 10 July 1980. After consideration of all relevant aspects,the Group came to the conclusion that now that it was in a position to propose a firm date for application of 60NM lateral separation in MNPS airspace and assuming that this date was accepted by ICAO, the request of the USA would only complicate matters because of the relatively short interval between two significant changes to Document 7030 which would result from such action. It therefore requested the ICAO Representative, Europe, to inform ICAO Headquarters of these views immediately and this was done.

1.3.3 In addition the Group felt that, now that 60NM lateral separation could be proposed for application as of a specific date, it would be useful if, within ICAO processing of the amendment to Annex 6 related to MNPS certification could be accelerated so that, if at all possible, it would become applicable on the same date or the shortest possible time thereafter because it was believed that this amendment would contribute to the improvement of the air navigation situation in the Region (paragraph 1.3 of Summary/16 refers).

1.3.4 Finally, the Group also noted that approval had now been given within ICAO for the rearrangement of Document 7030 in accordance with a proposal made at the LIM NAT RAN Meeting 1976 (Recommendation 1/1 of that Meeting refers) and it was believed that it would be helpful if this rearrangement could also be effected as soon as possible, if not in time for the publication of the new provisions regarding lateral separation and the related provisions regarding the operation of the organized track system.

CONCLUSION 17/1 - APPLICATION OF 60 NM LATERAL SEPARATION IN THE MNPS AIRSPACE OF THE NAT REGION

That :

a) ICAO specify the date of 30 October 1980 as the date at which the NAT RAC SUPPs regarding the application of 60NM lateral separation in the MNPS airspace of the NAT Region and the revised provisions regarding the organized track system should become applicable ; and

b) NAT Provider States concerned publish, on 4 September 1980 a NOTAM Class II announcing the application of 60NM lateral separation as of 30 October 1980.

1.4 Monitoring of navigation performance until 30 October 1980

1.4.1 As already mentioned in paragraph 1.2.6 above, there was unanimous agreement among the Members of the NAT/SPG that monitoring of the navigation performance of aircraft between now and 30 October 1980 should continue in the agreed manner including the follow-up of observed gross errors in navigation and continuing analysis as to likely trends regarding the overall navigation performance in the Region. It was understood that this implied by necessity that, should a noticeable degradation of navigation performance become apparent Provider States would immediately consult amongst each other and decide on the most appropriate course of action to be followed and inform ICAO accordingly.

1.4.2 Further to action taken at NAT/SPG 16 regarding the list of addressees for submission of gross error notification messages (Summary/16 paragraph 1.2.27 refers), an up-dated list is shown in Attachment A to this Item.

1.5 Provision for a possible co-ordination meeting prior to the application of 60NM lateral separation

1.5.1 Even though Provider States concerned had had ample time for the preparation of the application of 60NM lateral separation in the MNPS airspace of the NAT Region due to the repeated postponement of its application, the Group nevertheless felt that there may be a possibility that, as preparation for its application got under way, hitherto unsuspected problems may come to light which could require coordination amongst Provider States. To cater for this eventuality the Group therefore agreed to make tentative arrangements for such a co-ordination meeting so that it could be called at short notice and, in doing so it noted that some of the persons directly concerned would be required to participate in the ICAO RGCS Panel Meeting which was scheduled to be held in the latter part of August 1980 in Montreal. Therefore and with economy to administrations in mind, the Group proposed that if such a Meeting was necessary it should be convened from 2-5 September 1980 in the Headquarters of ICAO on the understanding that the contribution by ICAO Headquarters to such a meeting would be limited to the provision of a meeting room for some 15 to 20 participants.(See also para. 4.3 in the Summary of Item 4.)

CONCLUSION 17/2 - TENTATIVE ARRANGEMENTS FOR A POSSIBLE COORDINATION MEETING BETWEEN NAT PROVIDER STATES

That :

a) Provider States of the NAT Region make tentative arrangements for the convening of a coordination meeting regarding the application of 60 NM lateral separation in MNPS airspace in the NAT Region on 2-5 September 1980 in the ICAO Headquarters in Montreal on the understanding that this meeting will only be held if specifically requested by one or more of the States concerned ; and

b) ICAO be requested to provide, if required, a meeting room at ICAO Headquarters during the period of 2-5 September, should this be necessary.

Note : See also Conclusion 17/ 9 in the Summary of Item 4.

1.6 Monitoring after 60NM lateral separation is applied

1.6.1 Further to what is reflected in paragraph 1.4 above regarding monitoring of navigation performance the Group noted that, after the application of 60NM lateral separation in the MNPS airspace, these activities assumed particular importance, at least during the initial stages of the use of this separation minima. This applied, however, not only to the monitoring itself but also to the assessment of data obtained from monitoring in order to permit Provider States, either individually or collectively, to determine whether a general or partial degradation of navigation performance was taking place and what corrective action was required . In this connexion it was reiterated that the appreciation of a degradation in navigation performance, its sources and their elimination is a very complex process and that it was, for this reason, not possible to prescribe, a priori, standard solutions for their resolution but that this would rather have to be decided in the light of circumstances. However there was general agreement that, under normal circumstances (i.e. those excluding partial or widespread failure of specific components of the air navigation system) the sequence of action should be :

a) specific corrective action with regard to identified offenders ; and

b) an increase in separation if a) is not producing the required results within a specific period.

1.6.2 As to the monitoring activities themselves, it was noted that at present, apart from the occasion of NAT/SPG meetings, there existed no occasion which permitted all Provider States in the NAT Region to be continuously aware of development in the navigation situation throughout the Region except through the half-yearly Summaries published by the European Office of ICAO, which were however received too late to be of more than informative value.

1.6.3 In view of this situation the Member of the U.K. proposed that a central agency be designated for the collection and collation of information on the navigation situation throughout the NAT Region and he offered the services of his administration for this purpose. The proposals made for the operation of such a central data collecting and distributing agency were :

a) the agency designated by the UK should receive information from Canada, France, Iceland Ireland, Portugal the U.K. and the USA ;

b) the information provided should consist of :

i) monthly routine reports on the number of flight operations observed by radar during the month ;

ii) immediate reports on gross errors in navigation observed by radar supplemented by information on causes response by operators and/or States to reported errors and corrective action taken as and when this comes to hand ; and

iii) information similar to that in ii) above on errors not observed by radar but having become known through other means or from other sources.

c) the agency will, in turn, provide all participating States on a routine basis, i.e. on a monthly basis with a Summary of the total information provided by individual participating States so that these will be kept current of overall developments ;

d) in the case of need, the agency will provide participating States with special reports on developments should this be required in order to permit Provider States to decide on a common course of action ;

e) details required to permit the application of the above arrangements will be initiated by the United Kingdom at the earliest possible time prior to October 1980 so as to provide for the longest possible break-in period of these arrangements prior to 30 October 1980 ;

f) revisions to the above arrangement, especially as regards to the frequency of the submission of routine reports by participating States and the distribution of Summaries by the Agency, should be made the subject of the consultation of all parties concerned taking due account of relevant developments in the Region.

1.6.4 With regard to the inclusion of errors mentioned in b) iii) above, those not observed by radar, the Group felt that their inclusion and investigation could provide useful information on likely corrective action required. This applied particularly with respect to errors and/or ommissions resulting from non-compliance with the prescribed position reporting procedures and errors occurring in the transition area between oceanic and domestic airspace due to misunderstandings with regard to clearances and/or differences in interpretation between pilots and ATC regarding instructions received.

1.6.5 In making these arrangements the Group wanted to have it understood that the European Office of ICAO should continue to produce and distribute its half-yearly Summaries on observed navigation errors in the NAT Region because it felt that these constituted a worthwhile reminder, especially to NAT User States, to keep developments in this Region under review.

CONCLUSION 17/3 - INSTITUTION OF A CENTRAL COLLECTING AGENCY FOR DATA ON NAVIGATION PERFORMANCE IN THE NAT REGION

That the U.K. in collaboration with States concerned, take necessary measures to establish as early as possible a central agency for the collection of data on navigation performance in the NAT Region in accordance with the provisions in paragraph 1.6.3.

1.7 Up-dating of methodology

(Note : In order to avoid any possible misunderstanding it should be understood that the discussion reflected in this paragraph is in no way affecting the decision recorded in Conclusion 17/1 but will only be of interest to future development in the field of mathematical-statistical methods used for the assessment of collision risk).

1.7.1 Ever since the development by the NAT/SPG 3 of the mathematical-statistical methods, used for the assessment of the collision risk in the NAT Region it had been found that there were a number of residual issues which had not been resolved to everybody's satisfaction. However, while it had been possible to agree on satisfactory compromise arrangements, at NAT/SPG 15 it had become apparent that, due to developments regarding the overall navigational environment in the NAT Region, it was becoming more and more difficult to reconcile the diverging views as to the correct methods which should be used in assessing the collision risk in the NAT Region on the one hand and, on the other the degree of operational judgement which should be applied in transforming the results achieved by mathematical-statistical methods into applicable operational decisions. This trend continued at NAT/SPG 16 and is reflected in paragraphs 1.2.9 to 1.2.23 and in sub-paragraph c) of 1.2.38 of Summary/16.

1.7.2 At this Meeting, a number of Working Papers presented by the Members of the Netherlands, the U.K., the USA and the Representative of IATA showed that this situation continued to persist especially with respect to the application of the "snapshot principle" of assessing lateral collision risk used up to now (including the decision reflected in paragraph 1.1 of this Summary) versus a more sophisticated method of assessment of the lateral collision risk which uses specific weighing for individual categories of errors based on their nature and possible consequences.

1.7.3 In summary, the two viewpoints with which the NAT/SPG is confronted can be briefly summarized as follows :

a) the snapshot principle (Model 1)used so far is based on the assumption that navigation errors observed at the boundary of the NAT Region by radar are representative of the frequency and magnitude of those which will occur throughout the North Atlantic crossing regardless of the nature of such errors and their causes :

b) the method of attributing a specific weight to specific errors and their consequences (Model 2) is based on the assumption that certain errors are typical for certain environments and that as a consequence it should not be assumed per se that they are representative of errors as they will occur throughout the NAT Region. As a consequence this method attributes a specific factor to specific classes of errors and it is believed that this will introduce more realism into the mathematical-statistical method of assessment of risk than is possible with Model 1 (A brief description of Model 2 is given in Appendix B to this Item).

It should be understood that the above is a considerable simplification of the problem posed but it is believed that it is fairly representative of the two competing viewpoints at this time.

1.7.4 To resolve the differences of view, the Group agreed to apply the two models to the classes of errors observed and this results in the following findings :

a) for class A errors (aircraft not certified for operation in MNPS airspace) it was agreed that the trajectories of the aircraft concerned would very randomly about a cleared track and that therefore Model 1 could realistically estimate the collision risk ;

b) the discussion of class B (ATC system loop errors) revealed that a certain proportion of these occur as a result of misunderstanding regarding the route to be followed from the last significant point in the NAT Region (e.g. 52°N50°W) to the first significant point associated with the routing to be followed within the domestic ATS route network (e.g. DOTTY). These misunderstandings occur primarily in the vicinity of the exit from the NAT Region and may be observed by radar.

They should therefore be given a sub-classification B1 and be treated differently from other ATC system loop errors (B2) in Model 2. Other ATC system loop errors can occur anywhere in the oceanic area and produce trajectories similar to way-point errors. The Group agreed that Model 1 grossly overestimated the risk caused by the first kind of error described above, but that Model 2 would treat these errors more realistically. Furthermore, in Model 2 the other type of ATC system loop error would then be treated similarly to other way-point errors.

c) For Class C errors (equipment control error including way-point insertion errors), Model 2 proposes a treatment that is more realistic than that made in Model 1. In this treatment it is assumed that for each way-point error observed by radar, a similar error will occur at every way-point ;

d) As to errors in Classes D, E and F (other navigational error including equipment failure) it was agreed that these will result in different types of trajectories, depending on the kind of loss of navigation capability experienced and on the point in the NAT Region where that loss occurred. It seemed likely that aircraft would not enter the oceanic airspace with completely malfunctioning equipment and that therefore an error of this type would only apply during part of the time the aircraft was operating within the NAT Region. For partial malfunctioning on the INS navigation equipment the errors would generally increase nearly linearly with time. In the case of OMEGA, navigation errors caused by partial malfunctioning of the equipment were likely to be more complex. However an operational study of the effects of such errors indicates that their treatment by Model 1, as well as the treatment of all others included in Classes D, E and F would seem to be slightly cautious.

Note : Model 2, as summarized in Appendix B, may be modified to treat Class D errors in a more realistic manner than Model 1.

1.7.5 With respect to the recording of ATC system loop errors (Class B), mentioned in b) above, it was noted that, for their effective scrutiny it would be essential that the report on such errors must include the flightplan route, the cleared route and the actual route flown for the entire flight in the NAT Region.

1.7.6 The Group then looked at the consequences of applying Model 1 and 2 to these types of trajectories and a comparison of the advantages and disadvantages of the two models gave the following results :

a) the advantages of the use of Model 1 are its simplicity and the fact it does not require a detailed knowledge of the types of error that occur in the area in question. This makes the Model very suitable for the initial derivation of MNPS requirements and it was therefore used for this purpose in the NAT Region. However, once a detailed knowledge of the types of errors has been accumulated by analysis, Model 1 has the disadvantage that this knowledge cannot be taken into account.

In addition, the application of this Model, with a certain geographical disposition of the monitoring radar stations in relation to the last oceanic way-points before exit, provides non-representative data especially on way-point insertion and ATC system loop errors ;

b) Model 2 would take account of the information obtained from the scrutiny of previous errors and, if no such information were available it would be identical to Model 1. A disadvantage of this approach is that the confidence limits (i.e. the expected developments based on past actual occurrences) that can be applied to the results distributed over a larger number of classes of errors must, with a small number of data be wider than if all errors were treated in one class as is the case in Model 1. This is due to the fact that, in Model 2 errors in each sub-divided into groups which are treated separately and since the number of errors in each class are lower than the total number used in Model 1 and also because the distribution of errors over the different classes may vary between successive samples, the confidence level may be reduced.

1.7.8 The prevailing view of the Group was therefore that, while small samples of data treated by Model 2 might not produce more accurate answers than Model 1, Model 2 would give more realistic results as more data accumulated with time. The view was also expressed that it would remain to be seen whether the use of Model 2 with more data and different weighting of a multiple number of categories of errors would produce a more valid forecast of the likely collision risk.

1.7.9 As a consequence of this, and since it had already been agreed that in the near future monitoring would have to be continued at least at the present rate, it was agreed that both Model 1 and Model 2 should be used for the time being and that the results obtained with the use of both models should be used in formulating appropriate operational decisions until such time as the definite advantages obtained by either of the two models permitted the Group to make a definite choice. In any case it would be necessary that all errors, including those not observed by radar, would have to be carefully scrutinized for remedial action as has been done in the past years.

1.7.10 The Member of the Netherlands had submitted a Working Paper which, in an as yet incomplete form, described in a manner, meant to be understood by those not very conversant with mathematics, the mathematical methods used by the Group. The Group agreed that, even in its present form, this had been useful during the Meeting and asked the Member of the Netherlands to continue work on this paper.

1.8 Amendment to the special routes for use by aircraft with partial loss of navigation capability

1.8.1 Finally under this item, reference was made to the special routes which have been recommended for use by aircraft suffering partial loss of navigation capability, and listed in the NAT Guidance Material and "Operations Manual". One of these routes is to Keflavik via 57N10W, and is shown as originating from Belfast. At the request of IATA, it was agreed to add alternatives to this first stage of the route, permitting aircraft to fly also from Machrihanish Glasgow and Shannon to 57N10W. All these stages would normally be within radar and VHF RTF cover. The appropriate line in the Guidance Material should therefore be changed to read :

Machrihanish) Glasgow) Belfast) Shannon)	57N10W - 60N15W - 61N1630W - MIKE - KF

ATTACHMENT A
to Item 1

ANNEXE A
au point 1

LIST OF ADDRESSES FOR THE SUBMISSION OF GROSS ERROR NOTIFICATION MESSAGES
ADRESSES POUR LA TRANSMISSION DES NOTIFICATIONS D'ERREURS GROSSIERES

CANADA

Transport Canada
Attn : SLL
Transport Canada Building
Ottawa, Ontario, Canada
K1A 0N8

Telephone : (613) 996-5320
AFTN : CYHQYA
Telex : 0533130

DENMARK/DANEMARK

Luftfartsdirecktoratet
Codanhus, Gl.Kongevej 60
DK 1850 Copenhagen V

Telephone : (01) 314848
AFTN : EKCHYA
Telex : 27096

FRANCE

Direction de la Navigation aérienne
Bureau DNA/1
3, Avenue de Friedland
75008 Paris

Telephone : (1) 563 19 00
AFTN : LFPSYADN
Telex : 28081

ICELAND/ISLANDE

Air Traffic Services Section
Directorate of Civil Aviation
Reykjavik Airport

Telephone : (91) 17430
Cable : CIVILAIR
AFTN : BICAYA
Telex : 2250 FALCON IS

IRELAND/IRLANDE

Director A.T.S.
Dept. of Transport

Setanta Centre
Dublin 2

Telephone : (01) 771207
AFTN : EIDWYA
Telex : 4651 INDC E1

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and Telecommunications
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Attachment B
to Item 1

BRIEF DESCRIPTION OF MODEL 2

1. Discussion within the Group indicated that the lateral collision risk might not be realistically assessed by the original mathematical model in the case of ATC System Loop Errors and Waypoint Insertion Errors. The reason for the lack of realism was that such errors have been shown by scrutiny to occur only at reporting meridians.

2. In an attempt to improve the realism of the risk assessment model it was proposed that ATC System Loop and Waypoint Insertion Errors might be treated as follows :

(a) ATC System Loop Errors which scrutiny establishes could only occur at exit from the oceanic airspace be factored as follows and treated as zeta (50 - 70 NM) errors

(i) those having an observed magnitude of :

50 - 70 NM	.....	Factor by 0.12
110 -130 NM	.....	Factor by 0.31
170 -190 NM	.....	Factor by 0.44

(ii) those having an equivalent* magnitude of :

60 NM	.....	Factor by 0.06
120 NM	.....	Factor by 0.16
180 NM	.....	Factor by 0.22

(b) ATC System Loop Errors which scrutiny <u>cannot</u> establish as being of a type which could only occur at exit from the oceanic airspace, and Waypoint Insertion Errors, be factored as follows and treated as zeta (50 - 70 NM) errors :

having an equivalent* magnitude of :

50 - 70 NM	.....	Factor by 0.46
110 -130 NM	.....	Factor by 1.22
170 -190 NM	.....	Factor by 1.75

* Note : "Equivalent" magnitude is the magnitude which scrutiny establishes that the error would have reached, had not the presence of radar enabled the error to be truncated.

3. All other errors to be treated as in the original model.

4. Those interested in obtaining further detailed information on the mathematical basis upon which the figures mentioned in paragraph 2 are based, may obtain this by addressing themselves to :

Civil Aviation Authority
Room T 820
CAA House
45-49 Kingsway
London WC2 B6TE

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Ext. 2541

Agenda Item 2 : Review of the consolidated NAT MNPS Operations Manual and the NAT Guidance Material in general

2.1 Introduction

2.1.1 When dealing with this Item the Group covered the following three aspects :

a) status and use of the NAT MNPS Operations Manual ;

b) related developments as to the "Guidance and Information Material concerning Air Navigation in the NAT Region ; and

c) consolidated presentation of information on NAT operations to International General Aviation pilots.

2.2 The NAT MNPS Operations Manual

2.2.1 At NAT/SPG 16 it had been agreed that it would be useful if a consolidated Operations Manual covering flight operations within the MNPS airspace of the NAT Region would be prepared in such a manner that it would provide aircrews engaged in NAT operations, as well as other personnel concerned, with a comprehensive picture of the operation of the ATC system in the MNPS airspace of the NAT Region. At the time it had been felt that the production, and distribution down to the actual operating level, of such a Manual could assist appreciably in the reduction and possible elimination of navigation and ATC system loop errors which were due to misunderstandings or differences in the interpretation of existing rules and procedures. At the time, the initial development of such a Manual had been entrusted to Messrs. Sweetman (UK) and Lee (IATA) on the understanding that their respective superiors would make it possible for them to undertake this task (Conclusion 16/2 of NAT/SPG 16 refers).

2.2.2 The Group noted with considerable satisfaction that, not only had both the UK and IATA responded favourably to this request but the authors had also produced this Manual in record time and in a form which was found to be generally acceptable. In addition the UK had already produced this Manual in sufficient quantities for widespread distribution and the Group noted that it had met with considerable success.

2.2.3 At this Meeting, the Manual was reviewed in detail and this resulted in a number of specific proposals for its amendment. These amendments did however not affect its concept but were rather related to very specific points and the manner in which these were reflected in the Manual.

2.2.4 At this point in the deliberations it became however also apparent that there existed a certain relationship between this Manual and the NAT Guidance Material published by the European Office of ICAO and it was therefore found necessary to reach agreement on the manner in which publication and distribution of these two documents should in future be handled so as to ensure that best possible use was made of both of them. In addition it was found that certain material, now included in the Guidance Material lent itself to incorporation in the MNPS Operations Manual so as to give a complete description of all relevant aspects regarding NAT operations as they concerned personnel directly involved in practical day to day operations.

2.2.5 Finally, it was noted that the agreement reached by the Group regarding the proposed reduction of lateral separation in the NAT Region as of 30 October 1980 (the Summary of Item 1 refers) was having consequences on the content of the Operations Manual and that, in view of cost effectiveness considerations, it would therefore be advisable to envisage a revised edition of the Manual so that it could already take account of the situation as it will exist in the NAT Region after 30 October 1980.

2.2.6 As a consequence of the above the Group agreed that :

a) based on agreement reached at this Meeting, Messrs Sweetman and Lee should prepare a revised edition of the NAT MNPS Operations Manual;

b) to facilitate distribution to the desired level, the Manual should continue to be published as a separate document;

c) based on the agreement by the Member of the UK, the UK would assume responsibility for the initial production of the revised version of the Manual in sufficient quantities to permit distribution to major operators and States having interests in the NAT Region ; and

d) to effect the distribution to States having interest in the NAT Region, the UK would make available sufficient copies of the Manual to the European Office of ICAO to effect this distribution together with a request to States concerned to ensure its internal distribution at the required level, either by transmission to their concerned operators or by making the Manual available at such AIS units where planning for NAT operations takes place.

CONCLUSION 17/4 - UPDATING AND DISTRIBUTION OF THE NAT MNPS OPERATIONS MANUAL

That the updating and distribution of the NAT MNPS Operations Manual be effected in accordance with the provisions outlined in para. 2.2.6 above.

2.3 Review of the NAT Guidance Material

2.3.1 As a consequence of the above and in view of the fact that the latest edition of the NAT Guidance Material had been published by the European Office of ICAO in July 1979 and therefore requires from that point alone review, the Group undertook a brief review of that Guidance Material in order to assist the European Office in the preparation of an updated version, in view of its continued value for States and operators. This exercise was mainly intended to permit :

a) the elimination from that material of those texts which, in view of overall developments, were no longer required;

b) the transfer from the Guidance Material into the NAT MNPS Operations Manual, of those texts which, now that that Manual existed, were better placed there ; and

c) the identification of these parts of the Guidance Material which had previously been provided by States and which required renewal in order to reflect the latest situation.

2.3.2 As to the general question of updating the Guidance Material it was noted that this should include action to incorporate into this material those texts from NAT/SPG Summaries 16 and 17 which lend themselves for these purposes. With regard to the elimination of material this applied particularly to the "Special temporary arrangements for aircraft unable to comply with the MNPS" because these provisions have been overtaken by events. As to the transfer of material from the Guidance Material into the NAT MNPS Operations Manual, this related to :

a) guidance on action to be taken by pilots if their navigation equipment failed before entering MNPS airspace;

b) routes to be used by aircraft suffering a partial loss of navigation capability prior to entering MNPS airspace; and

c) material provided by IATA since the second issue of the NAT Guidance Material on cross-checking procedures.

2.3.3 Finally, as regards the identification of material which should be updated by States, this referred primarily to NOTAMs and Circulars published by the UK and the USA, now inserted in the guidance material for illustration purposes of specific points (Appendices C, D, E, F and G of the present Edition refer) and which are expected to need review by the States concerned and possible re-issue in view of latest developments (planned extension of the MNPS airspace, implementation of 60 NM lateral separation and latest developments in the certification procedures by States with regard to MNPS operations). In this connexion it was expected that States concerned would provide the European Office of ICAO with updated material as and when this became available.

CONCLUSION 17/5 - UPDATING OF THE NAT GUIDANCE MATERIAL

That :

a) the European Office of ICAO prepare an updated version of the "Guidance and Information Material concerning Air Navigation in the NAT Region" in accordance with the provisions in paras. 2.3.1 and 2.3.2; and

b) States, having material which could assist in illustrating their application of specific NAT provisions, provide the European Office of ICAO with latest edition of such texts so that these may be included in the NAT Guidance Material.

2.3.4 It was noted that, because of the implementation of reduced lateral separation in the NAT Region, the revised Edition of the NAT Guidance Material should take this already into account.

2.4 Information for IGA pilots

2.4.1 While on the subject of guidance and information material, the Group was informed that the situation with regard to the conduct of flight operations in the NAT Region by IGA pilots continued to be preoccupying. In fact, a recent incident involving nine IGA flights from North America to Ireland had resulted in a situation where the efforts, required by both the ATC and COM services concerned with these flights, had resulted in an unacceptable workload and could have had even more serious consequences. In addition, it was pointed out that, in a number of cases the search and rescue services of the UK and of France had been alerted and had conducted, fortunately unnecessary, search and rescue exercises which had resulted in considerable financial expenses to the Administrations concerned, which, as a rule, could not be recovered from the originators.

2.4.2 In view of this situation and taking account of the fact that the large majority of these operations were conducted by pilots of US origin, the Group recalled that at its 13th Meeting it had requested the USA to convene a meeting of representatives from Canada, Denmark, Iceland, the United Kingdom, the United States and IAOPA in order to prepare an information document for IGA pilots on NAT operations below FL 275. The main subjects to be covered by such documentation had, at the time, also been listed by the NAT SPG (Agenda Item 8 and Conclusion 13/13 of Summary/13 refer).

2.4.3 The Member of the USA stated that, since NAT/SPG 13, his Administration had pursued a number of approaches in order to resolve the problems raised by IGA pilots but he recognized that, in the light of information presented at this Meeting, it would be necessary to intensify and accelerate action on this particular subject extending also to pilots who were not of US origin. He was therefore prepared to inform his Administration of the views expressed by the Group together with a request that it should now take follow-up action in accordance with Conclusion 13/13. In addition, he renewed a previous request that information on incidents involving US pilots should be brought to the attention of the FAA.

Agenda Item 3 : Longitudinal separation between turbo-jet aircraft in the NAT Region.

3.1 Introduction

3.1.1 When dealing with this Item, the Group agreed that this should be done under the following main headings :

a) mathematical-statistical method used ;

b) application of reduced longitudinal separation between turbo-jet aircraft operating under specified conditions in the NAT Region ;

c) action proposed by the Group ; and

d) up-dating of the provisions regarding the application of the Mach number technique to subsonic aircraft.

3.1.2 In discussing this subject, the Group took into account the work programme established at NAT/SPG 16 (Conclusion 16/6 and paragraph 2.3.5 of Summary/16 refer) as well as a number of new aspects which had come to light in the course of this Meeting.

3.2 Mathematical-Statistical Methods used

3.2.1 At NAT/SPG 16, the Member of the UK had provided the Group with information on how the data collected by the U.K. on longitudinal separation had been treated mathematically-statistically in order to obtain an assessment of the collision risk involved in the application of a reduction in longitudinal separation under specified conditions. At that time it had been made clear that, despite the nature of that separation, its variation with time and the circumstances surrounding the detection and correction of observed degradations, any mathematical models would have to be based on the assumption that aircraft were operating in an unmonitored environment. This meant that the methods used assumed that, from entry of aircraft into the NAT Region and throughout their flight therein, ATC took no account of position reports and took no action to ensure the maintenance of proper longitudinal separation. Also the risk estimates made no allowance for the consequences resulting from the application of the "see-and be-seen" concept or pilot monitoring of air-ground communications.

3.2.2 Therefore, using the model with the above limitations it was found that :

a) the methods used by the Group for the estimation of longitudinal risk in an unmonitored West-bound system were reasonable ones. It was noted that the estimates were of average collision risk and this was in accordance with the principles laid down in early meetings of the NAT/SPG and similar to the way the lateral separation was treated. At peak times it could be possible for the risk to be several times higher while at certain times of day and season the risk could be much reduced ;

b) there would be greater longitudinal risk to East-bound traffic than West-bound traffic. Furthermore, it was very probable that East-bound risk in a system with a 10 minute minimum was not more than three times as great as West-bound risk. Based on the estimated West-bound risk this would mean that the average East-bound and West-bound risk in an unmonitored system would be not greater than 1.1 accidents per 10 million flying hours.

c) when considering to what extent longitudinal risk would be assumed to be reduced as a consequence of ATC monitoring, at present there was no accurate method of estimating this factor and that in order to apply a reasonable value it would be necessary to draw on operational expertise ;

d) when making a very cautious estimate of successful ATC intervention(95%) and applying this to the results of the above described methods, the estimated accident rate would not be greater than 0.06 per 10 million flying hours and this is to be compared with a target level of safety for longitudinal risk of 0.2 accidents per 10 million flying hours ;

e) second generation aircraft had made a considerably smaller contribution to total longitudinal risk in the sample period than had older aircraft. In general, this was probably due largely to the fact that these second generation aircraft had more modern Mach meters. This might be an important point for the future as the proportion of more modern aircraft in the system was expected to increase ;

f) none of the analysis was relevant to the problem of crossing and joining traffic. It could therefore not be used as a justification for any reduction in separation between such traffic ; and

g) the effect of the reduction of longitudinal separation on the lateral risk (as a result of redistribution of traffic and principally on the opposite-direction lateral risk, was not considered to be significant. However, a further analysis of this problem will be made .

3.3 Application of reduced longitudinal separation

3.3.1 The Group proceeded with a detailed review of all factors relevant to the problem of determining specific action with regard to a proposal for reduction of longitudinal separation between turbo-jet aircraft operating under specified conditions in the NAT Region, and the determining of a realistic date by which such a reduction could be made applicable.

3.3.2 In conducting this review, the Group pursued two lines of approach, namely :

a) one regarding safety considerations involved in such a reduction ; and

b) the other, exploring the organisational and procedural preparations required by States in making such application practicable.

The latter was particularly relevant with respect to the establishment of the proposed date of applicability.

3.3.3 With regard to the safety aspects of the reduction of longitudinal separation, the Group, in accordance with previously expressed views, felt that, in formulating a proposal, it was particularly important to ensure that adequate account was taken of the operational parameters having a bearing on this question in comparison with mathematical-statistical assessments. This was due to the fact that :

a) with this type of separation, erosion was occuring at a comparatively slow rate when compared with that of other forms of separation (lateral or vertical) ; and

b) because of this, it left therefore a much higher possibility for detection by ATC of such erosions and effective interventions in order to restore the required separation.

3.3.4 In addition, while it was recognized that further work on the improvement of the installation and calibration of Mach meters was desirable, it was noted that in the application of the Mach number technique, upon which longitudinal separation for the type of aircraft concerned was based in the NAT Region, there had been certain improvements taking place, especially by the presentation, in digitized form of the Mach number to the pilot, which contributed to the effectiveness of application by ATC of this technique. The same applied to the associated question of accuracy in time-keeping where spot-checks had been conducted at random on certain occasions in the NAT Region. These had shown that deviations in accuracy of individual aircraft normally remained within limits not exceeding a maximum of two minutes with an average of less than one minute.

3.3.5 Finally, it was noted that, with the increase in accuracy in the determination of the position of the aircraft along its track, provided by the navigation equipment of those aircraft certified for MNPS operations, the previous, comparatively large uncertainty as to the exact position of an aircraft at a specified time, and thus its relative position with respect to other aircraft, had significantly decreased.

3.3.6 As a result of this, the Group felt that, after careful and objective assessment of the above factors, the application of ten minutes longitudinal separation as specified in Attachment A to this Item, would be safe.

3.3.7 With regard to the second aspect mentioned in para. 3.3.2 b) above, i.e. the organisational and procedural aspects involved, the Group found that the target date specified at NAT/SPG 16 for the application of the reduced longitudinal separation (para. 2.3.5 f) of Summary/16 refers) had been somewhat optimistic. In fact, it was noted that the application of reduced longitudinal separation would not only require adequate training of controllers concerned but would also need to take into account the changes which had to be made to the electronic data processing equipment used in some OACs (together with the associated lead-times for their realisation). In addition, procedural arrangements would have to be made in the transition areas between oceanic and domestic airspace to ensure that longitudinally closer spaced aircraft would not present integration problems to adjacent non-oceanic ACCs.

3.3.8 In this context, the Member of Canada informed the Group that his Administration had asked operational controllers at Gander OAC to conduct a simulation exercise of the use of 10 minutes longitudinal separation, using as a basis the actual traffic of 10 days during the 1979 summer peak traffic period. He stated that a report on this was in the process of preparation and would be made available shortly to other interested parties. He also stated that the more salient points, revealed in this exercise, were :

a) workload on ATC would not have been significantly increased ;

b) less re-routings of aircraft would have been required ;

c) more aircraft coul have been given their requested tracks and flight levels ; and

d) that the traffic handling capacity of the ATC system would have been increased because more aircraft could have been accommodated in the system during a given period of time than was now the case.

3.3.9 It had however also been pointed out that the controllers needed sufficient time prior to the implementation of reduced longitudinal separation and that they would require a reasonable interval between the time another change in separation, i.e. lateral, was introduced and the time when reducing longitudinal separation was made applicable.

3.3.10 The Group felt that the work done by Canada was extremely useful and it was therefore suggested that other Provider States now make a similar approach so that a full assessment of the ATC aspects involved could be made.

3.3.11 Following the above and taking the most realistic view of the time required to effect the necessary adjustment to the system, the Group felt that the date of 26 November 1981 should be selected as the date of application of reduced longitudinal separation to turbo-jet aircraft meeting the MNPS and operating under specific conditions in the NAT Region.

3.3.12 As a consequence of the proposed application of a reduction in longitudinal separation, the Group agreed that the NAT RAC SUPPs regarding the revision of estimates for the next position by subsonic aircraft would have to be revised so that differences of 3 minutes or more would have to be notified to ATC. The proposed change to the relevant SUPPs is shown in Attachment A to this Item.

3.3.13 Even though the Group was confident that no new problems were likely to arise which had so far not yet been considered in the context of this subject, it nevertheless felt that it would be useful if the time between now and the proposed date of application on 26 November 1981 would be used by Provider States concerned to monitor overall navigation developments carefully so that the likely magnitude of certain of the associated organisational and procedural problems could be assessed as accurately as possible and be catered for. To this extent it noted the statement of the Member of the UK that his Administration was prepared to continue monitoring with respect to longitudinal separation and, in co-operation with Canada, assess obtained data and make its results available to the Group at its next Meeting.

3.3.14 Finally the Group agreed that, should as yet unforeseen difficulties arise between now and the next Meeting of the NAT/SPG, Members concerned should bring these immediately to the attention of the Group so that if required, the Group would be able to review the position taken at this Meeting and inform ICAO accordingly. It was also understood that this arrangement did in no way relieve Provider States from the previously agreed obligation to keep the general situation regarding the use of all types of separation in the NAT Region under close scrutiny and to take appropriate corrective action whenever this appeared to be required (See also paragraphs 1.4 and 1.6 in the Summary of Item 1.)

3.4 Action proposed

3.4.1 Taking into account the mathematical-statistical methods in para 3.2 and the operational considerations in para 3.3, the Group agreed that :

a) the application of 10 minutes longitudinal separation between aircraft operating under specified conditions in the NAT Region was safe ; and

b) in view of this, its application should be proposed as of 26 November 1981.

CONCLUSION 17/6 - APPLICATION OF REDUCED LONGITUDINAL SEPARATION IN THE NAT REGION.

That :

a) reduced longitudinal separation between turbo-jet aircraft meeting the MNPS and operating under specified conditions in the NAT Region and a change in position reporting be applied in accordance with the NAT RAC SUPPs proposed in Attachment A to this Item.

b) these NAT RAC SUPPs be made applicable as of 26 November 1981 ;

c) the Member of the UK be requested to invite his Administration to formally propose to ICAO action in accordance with a) and b) above ; and

d) Provider States study the consequences that the introduction of the above proposed measures are likely to have on air traffic control and bring salient points resulting from such studies as early as possible to the attention of the NAT/SPG ; and

e) the U.K. continue its monitoring activities of the longitudinal separation in collaboration with Canada and bring the results to the attention of the next meeting of the NAT/SPG.

3.5 Updating of the Mach number technique applied to subsonic aircraft

3.5.1 At NAT/SPG 13, when the subject of reduction of longitudinal separation, based on the Mach number technique had been considered in appreciable detail, the Member of the U.K. had presented material to the Group which showed that, especially in the calculation of the entry separation required between two aircraft operating at different Mach numbers, it was necessary to take account of the wind component in order to determine this specific separation, if it was to ensure that the two aircraft concerned had adequate separation when exiting from the oceanic airspace.

3.5.2 At the time it was noted that OACs in the NAT Region were aware of this situation and that they had developed techniques to account for this situation. Nevertheless it had been noted at that time the Guidance Material contained in Attachment H to the PANS-RAC, which had been developed at the 6th Air Navigation Conference in 1969 was slightly overtaken by events and would therefore require up-dating, especially if the application of the Mach number technique was intented to be extended to other than the NAT and PAC Regions. It was for this reason that, at this Meeting, the Member of the U.K. presented the Group with a proposed up-date of Attachment H to the PANS-RAC with the intent that, after endorsement by the Group, this should, through appropriate channels, be presented formally to ICAO for adoption.

3.5.3 When reviewing the material in detail the Group found that, taking into account the development described in the preceeding paragraphs of the Summary of this Item, the question needed consideration under the following two aspects :

a) the more general requirement to update the material in Attachment H to the PANS-RAC ; and

b) the potential need for the transformation of relevant parts of this material into NAT RAC SUPPs for use in conjunction with the application of longitudinal separation in the NAT Region, based on the use of the Mach number technique.

3.5.4 The detailed review under the general aspect mentioned in a) above revealed that the material presented by the Member of the UK had probably been developed too closely around the specific conditions governing the application of the Mach number technique in the NAT Region, and more especially within the organized track system, and that it would therefore be necessary to broaden the material somewhat. Unfortunately it was found that, in the time available to the Group, it was not possible to reach agreement on the necessary revisions. It was therefore agreed that work on this subject should be pursued further by the Members of Canada, the U.K. and the USA in the light of discussions held at this meeting, to that, at NAT/SPG 18 it would be possible to develop a commonly acceptable text.

3.5.5 From the above it is evident that work on the second aspect mentioned in paragraph 3.5.3 b) above i.e. the selection of specific parts of those provisions which could serve as NAT RAC SUPPs could not even get started. It was therefore agreed that, in the course of the work mentioned in paragraph 3.5.4 above, the three Members should give consideration to this aspect as well.

CONCLUSION 17/7 - UPDATING OF THE PROVISIONS REGARDING THE APPLICATION OF THE MACH NUMBER TECHNIQUE TO SUBSONIC AIRCRAFT

That :

a) Canada, the UK and the USA undertake work in order to present, to the 18th Meeting of the NAT/SPG, proposals for the updating of the material in Attachment H tothe PANS-RAC regarding the application of the Mach number technique to subsonic aircraft ; and

b) in doing so, develop proposals for those provisions from this updated material, which should be proposed for inclusion in the NAT RAC SUPPs on this subject.

Attachment A
to Item 3

PROPOSED AMENDMENT TO THE NAT/RAC/SUPPs

A. Reduction of Longitudinal Separation

Paragraphs 2.2.1 5) a) and b) in Document 7030 (after inclusion of its Amendment 153 of 24 January 1980) should be replaced by the following (page RAC 1-3 refers) :

" 5) a) Ten minutes between turbo-jet aircraft meeting the MNPS and operating wholly or partly in MNPS airspace, provided that the Mach number technique is applied and the aircraft concerned have reported over the same entry point into oceanic controlled airspace and follow the same track or continuously diverging tracks.

This separation may be reduced to five minutes at the entry point into oceanic controlled airspace if the preceeding aircraft is maintaining a speed of at least Mach 0.06 greater than the following aircraft.

5) b) Fifteen minutes between turbo-jet aircraft provided that the Mach number technique is applied and the aircraft concerned have reported over the same entry point into oceanic controlled airspace and followed the same track or continuously diverging tracks.

This separation may be reduced to :

- 10 minutes at the entry point into oceanic controlled airspace if the preceding aircraft is maintaining a speed of at least Mach 0.03 greater than that of the following aircraft; and

- 5 minutes at the entry point into oceanic controlled airspace, if the preceding aircraft is maintaining a speed of at least Mach 0.06 greater than that of the following aircraft.

5) c) The separation minima mentioned in a) and b) above may also be applied between aircraft which have not reported over the same entry point into oceanic controlled airspace (but otherwise comply with all other provisions) provided their respective entry points as well as the point from which they either follow the same track or start following continuously diverging tracks, are located within the radar coverage of the controlling ATC Unit and it is therefore possible, by radar monitoring, to ensure that

the appropriate time interval will exist between the aircraft concerned at the time they start following the same or continuously diverging tracks.

5) d) Twenty minutes between :

i) turbo-jet aircraft not covered by 5) a) and 5) b) above;

ii) other than turbo-jet aircraft operating within the New York oceanic controlled area along routes extending between the United States, Canada or Bermuda and Carribean terminals, or between the United States or Canada and Bermuda.

B. Position Reporting

Paragraph 5.3.2.5 in Document 7030 (after inclusion of its amendment 153 of 24 January 1980) should be replaced by the following (page RAC 1-13 refers) :

"5.3.2.5

If the estimated time for the next position last reported to air traffic control is found to be in error by three minutes or more, a revised estimate shall be transmitted to the ATS unit concerned as soon as possible."

Agenda Item 4 : Crossing and Joining Traffic operating South of the organized track system.

4.1 Introduction

4.1.1 In discussing this Item, the Group noted that, at a Meeting held in Lisboa in June 1979, it was agreed to establish, on a trial basis, as of 21 August 1979 three fixed routes in the NAT Region in order to cater for traffic operating between Europe and points in the CAR and SAM Regions. This was done because it was expected that this would alleviate congestion problems which had been experienced in the New York OCA . At the same time it was hoped that the provision of these routes would assist ATC and operators concerned in avoiding economic penalties imposed on operators by flight level restrictions when these were operating on random routes between the points mentioned above.

4.1.2 At NAT/SPG 16 it had been agreed to maintain these routes in operation at least until the end of January 1980 so as to include, in an evaluation of the effects of the routes on operators, an assessment of the traffic peak period normally experienced during the Christmas period. At the same time it was noted that the USA intended to convene a further meeting of the Group established in accordance with Conclusion 14/7 b) to study the random traffic in the NAT Region (Random Traffic Study Group (RATSG)) in January 1980 in New York to make a further review of the situation and develop proposals for further action.

4.1.3 At this Meeting, as well as on previous occasions, it was pointed out by some Members of the Group and by IATA that the fixed ATS routes established in June 1979 were meeting with a mixed success. This was based on the following considerations :

a) while the route designated as G61 and extending from Lisboa to a point 27°N45°W was not giving rise to particular difficulties ; and

b) while the ATS route designated as B47 and extending from Northern Portugal to its intersection with route R99 (NDB Flores) was also reasonably satisfactory ;

c) this was not the case for the route designated as R99 and extending from 27°N50°W via Flores to 45°N20°W and into France, especially as far as that portion of the route North of Flores was concerned.

4.1.4 The reason for this was that, on mumerous occasions, aircraft operating from points in Western Europe such as Paris or points North thereof when flying on this route were encountering unfavourable meteorological conditions.

4.1.5 It had therefore already repeatedly been proposed that the route catering for flights between points in Europe situated at the latitude of Paris or North thereof, and operating into the CAR and SAM Regions, should be permitted to operate on a flexible track on the understanding that such a track would be established, both for the West-bound and the East-bound flow, taking optimum account of :

a) prevailing meteorological conditions ; and

b) consequent intentions of operators regarding the route to be flown.

4.1.6 Information provided at this Meeting by operators concerned indicated that restriction of these flight operations to the use of route R99 had sometimes resulted in economic penalties with regard to fuel consumption which were worse than those which had been experienced before 21 August 1979, when such operations were made along random tracks with all the restrictions imposed on them as a result of the orientation of the organized track system or because of other traffic.

4.2 Proposed Intermediate Action

4.2.1 After prolonged discussions of relevant aspects, including those related to the capability of OACs concerned with the control of these operations, the Group came to the following conclusions :

a) ATS route G61 between Lisboa and Point 27°N45°W should be retained as is and should be used as was now the case ;

b) route B47 from Lisboa to NDB Flores and from thereon along Route R99 to point 27°N50°W should also be maintained and used by flight operations for which this route was suitable as was now the case ; and

c) for flight operations between points in Europe situated North of the Iberian Peninsula and points in the CAR and SAM Regions, Route R99 should be retained as now established but its use should be made contingent on condition that prevailing forecast meteorological conditions did not render its use uneconomical. In those cases where it was expected that meteorological conditions were not favourable to the use of Route R99 as established, it was agreed that the OACs concerned could establish flexible tracks for both the East-bound and West-bound flow of traffic concerned and that these tracks should be established in accordance with the principles governing the establishment of the organized tracks now used by NAT Traffic operating predominately in an East-West direction across the NAT Region.

4.2.2 When considering the detailed application of the agreement reached in c) above it was however noticed that due to pressing circumstances, its application had to be subjected to a number of conditions. These were :

a) to determine whether the use of Route R99 was feasible or whether it had to be replaced by a flexible track, the OACs concerned required not only adequate MET information but also information on the intention of operators ;

b) in addition, operators had to be notified in time of the track which should be used during a particular period so that they could plan their operations accordingly ; and

c) it had to be ensure that the established track and its use was fully co-ordinated not only between all OACs concerned the NAT Region but also with San Juan ACC because these flexible tracks could require the establishment of different entry points into the San Juan FIR than that normally established for R99.

4.2.3 In considering the requirement for a flexible track, which replaced ATS route R99 in case of need for the West-bound flow of traffic, it was found that the following time scale for its application, on a trial basis, could be established :

a) as of 10 April 1980 operators concerned (at the moment 7) will provide OACs Shanwick, Gander, Santa Maria and New York with information on the planned track for their operations between Europe and the CAR and SAM Region together with the number of flights involved by each operator during a twelve hour period. This information should be provided regardless of whether the use of ATS Route R99 is suitable or a different track is preferred ;

b) based on this information the four OACs, Shanwick, Gander, Santa Maria and New York Oceanic will coordinate amongst each other and agree on the track which should be offered to operators. This track should, if at all possible, be established so that it will not inhibit the simultaneous use of ATS route R99 by aircraft wishing to use it in the East-bound direction or, for its portion South of its junction with Route B47, in a West-bound direction ;

c) up to 8 May 1980, the process outlined in b) above should be conducted on a simulation basis only and, once the agreed track has been established it should be brought to the attention of all OACs concerned for training and familiarization purposes.

d) as of an agreed time on 8 May 1980, the above process should be implemented on a trial basis and the agreed track, whether it was Route R99 or its flexible substitute, should be included by Shanwick in its track message for West-bound operations in the NAT Region.

4.2.4 With regard to similar arrangements regarding a flexible track catering for the East-bound flow in case route R99 was not found to be suitable the following time plan was agreed :

a) operators should, as early as possible, provide the four OCAs mentioned in 4.2.3 a) with their intentions regarding planned flight operations from points in the CAR and SAM Regions to points in Europe situated North of the Iberian Peninsula, including the number of flights involved ;

b) this information should, as early as feasible, be used by the OAC's concerned to establish a flexible track for these operations if it is found that Route R99 is not suitable. In establishing this track, the provisions specified in 4.2.3 b) apply also regarding the continued simultaneous use of the Southern portion of Route R99 by those flights for which the use of this route is suitable.

c) in establishing a flexible track as a substitute for route R99 for East-bound traffic, due account will have to be taken of its alignment with respect to the Southern-most route of the organized track system serving East-bound traffic between points in North America and points in Europe. Coordination arrangements between the OACs concerned would also have to cover the flight levels to be used by aircraft operating on the flexible track catering for the East-bound traffic out of the CAR and SAM Regions. In this respect it was noted for guidance, that the relative density of traffic operating between points in North America and the Iberian Pensinsula and that operating on routes from the CAR and SAM Regions was 3 to 1.

d) the extent of the simulation exercise, with regard to this track, is dependant on the provision of equipment permitting the New York OAC to have up-to-date forecasts regarding the meteorological situation in the Southern part of the NAT Region at its disposal.

e) as soon as the difficulties mentioned in d), which prevent the trial application of a flexible East-bound track in lieu of R99, have been overcome,New York OAC should inform the other three OACs concerned and, based on an agreement reached, a firm date for the beginning of the trial application of this flexible track in case of need, should be established ; and

f) as of that agreed date, the provisions regarding the establishment and promulgation of that track will then be brought in operation on the understanding that the inclusion of this track into the organized track message for the night will be the responsibility of Gander OAC.

4.2.5 In developing the above intermediate action, the Group expected that its application would be pursued with due urgency by all parties concerned to achieve earliest possible application of the agreed measures. In addition it also expected that any modification which might be required or any delay will be the subject of full coordination between all parties concerned and that in no case, uni-lateral unco-ordinated action will be taken.

CONCLUSION 17/8 - PROPOSED INTERMEDIATE ACTION REGARDING TRAFFIC SOUTH OF THE ORGANIZED TRACK SYSTEM

That concerned Provider States in the NAT Region take all necessary measures to ensure that their OACs will be able to comply with the proposed intermediate action outlined in paragraphs 4.2.4 and 4.2.5 above and that operators concerned assist in this to their best ability.

4.3 Action required to develop more permanent arrangements

4.3.1 As to the development of more permanent arrangements regarding traffic operating in the NAT Region South of the organized track system, the Group agreed that the review of traffic data, which was being prepared by Portugal should be used assupporting documentation for this purpose. It was understood that such data would consist of ;

a) an analysis of all traffic which operated through the Santa Maria OCA in 1978 and in 1979 up to 21 August. This data was expected to become available at the beginning of June 1980 ; and

b) an analysis of traffic having operated between Lisboa, London and Paris and Caracas, Miami and San Juan. This material was expected to become available by the end of June 1980.

The Group expressed the hope that any other supporting documentation, intended to be provided on this subject, should be made available well ahead of the Meeting of the RATS Group as specified hereunder and in any case no later than 2 weeks before the convening date of the Meeting, i.e. 2 September 1980.

4.3.2 The review of the above date and a review of the experience gained with the use of the flexible track replacing Route R99 for West-bound traffic (and if possible also that for East-bound traffic) should be made at the Meeting of the RATS Group which, for convenience and economy should be arranged at the same time and at the same place as the tentative meeting mentioned in Conclusion 17/1 in the Summary of Item 1. This meeting should, however, be held in any case, regardless of whether the co-ordination meeting, associated with the introduction of 60NM lateral separation, was held or not.

4.3.3 It was expected that, in the light of the review mentioned above, the RATS Group should reach agreement on more permanent arrangements regarding the routing and handling of traffic operations in the NAT Region South of the organized track system. In addition it was expected that this Meeting could prepare firm proposals regarding the definite implementation of both the fixed ATS routes and the substitute flexible tracks related to route R99 in case its use was uneconomical. Note was taken of the request by IATA that, in the longer term, a system of optimum economical routing should be provided in that part of the NAT Region.

4.3.4 Because of the importance attributed to this subject by the NAT/SPG, and in view of its economic consequences and the need for guidance as to the formulation and presentation of the proposals expected to be developed at this meeting, the Group felt that it would be advisable if ICAO could find the means to provide this Group with the services of the Secretary of the NAT/SPG, Mr. P. Berger.

CONCLUSION 17/ 9 ACTION REGARDING MORE PERMANENT ARRANGEMENTS

That :

a) the Random Traffic Study Group be convened sometime during the period 2-5 September 1980 in order to develop proposals for more permanent arrangements regarding the routing and handling of traffic operating in the NAT Region South of the organized track system, using the data provided by Portugal and any other documentation made available well ahead of the meeting ;

b) further to Conclusion 17/1, ICAO make definite arrangements for the provision of a meeting room at its Headquarters during the period from 2-5 September 1980 ; and

c) ICAO consider favourably the request of the NAT/SPG to make Mr. Berger available to act as Advisor and Secretary to that Meeting and, if convened, also to the meeting, referred to in Conclusion 17/1.

Agenda Item 5 : Uniform provisions regarding temporary airspace reservations in the NAT Region.

5.1 Introduction

5.1.1 It was recalled that the question of airspace reservations in the NAT Region had repeatedly given rise to discussions within the NAT/SPG and at NAT/SPG 16, the Group had agreed to develop the concept for an approach to the resolution of the problem, requesting the Member of the USA to prepare material for review at this Meeting, based on this approach (para. 6.6 of Summary/16 refers).

5.1.2 At this Meeting the Group was presented with Working Papers by the Members of Canada and the USA dealing with this subject and it agreed that, based on these , further work on this subject should be done under the following three major headings :

a) generally applicable definitions required to reflect the up-dated concept on airspace reservations;

b) principles governing the establishment and management of airspace reservations; and

c) specific values to be used in the NAT Region in order to keep controlled flights away from airspace reservations.

5.2 Generally applicable definitions

5.2.1 The Group noted that,at present,the only reference to the term "airspace reservation" is contained in the ICAO Lexicon together with its definition and that reference to the establishment of such airspace reservations is made in para. 6.3 of Part II of the PANS-RAC. Developments, not restricted to the NAT Region exclusively, seem to indicate that it would be desirable to extend the world-wide provisions relating to this subject and that,in doing so,two points should be underlined :

a) that airspace reservations are, by virtue of their designation, temporary in nature and that, in order to make this clear beyond any doubt,this should be reflected in the term itself; and

b) that ,because the activities requiring the establishment of airspace reservations had multiplied and diversified in nature as well as in originators, it would be preferable to accord this subject a separate section in the PANS-RAC rather than treating it under the general heading of "Responsibility in regard to Military Traffic".

5.2.2 The Group therefore believed that, in order to meet the objective under a) above ICAO, in its general review of the PANS-RAC now in progress, should give consideration to changing the term airspace reservation and its definition as stated hereafter and that the revised text should also be included in the PANS-RAC :

"Temporary Airspace Reservation" - a defined volume of airspace which, by agreement between the competent ATS authority and a requesting agency, is temporarily reserved for exclusive use by the requesting agency.

"Stationary Temporary Airspace Reservation" - a temporary airspace reservation whose position in space remains fixed with relation to the surface of the earth.

"Moving Temporary Airspace Reservation" - A temporary airspace reservation whose position in space changes with time.

5.3 Principles Governing the Management of Temporary Airspace Reservations

5.3.1 With regard to the management of temporary airspace reservations it is similarly proposed that the material shown hereafter be included at an appropriate space in the PANS-RAC for general application :

5.3.2 Principles Governing the Management of Temporary Airspace Reservations

5.3.2.1 Prior to requesting the establishment of a temporary airspace reservation the requesting agency shall obtain full information on the likely effect of such a reservation on air traffic. Such information shall include areas of high traffic density which may exist in the vicinity or at the planned location of the airspace reservation, as well as information on peak periods of traffic operating through such areas. In the light of that information, the requesting agency should, to the extent possible, select the site of the airspace reservation, and the time and duration so that this will have the least effect on normal flight operations conducted in the area in question.

5.3.2.2 In specifying the extent of a requested temporary airspace reservation and its duration, the requesting agency shall limit the size of the area to the absolute minimum required to contain the activities intended to be conducted within that area, taking due account of :

a) the navigation capability of aircraft or other vehicles within the reservation;

b) the means available to monitor those activities so as to guarantee that they will be confined within the airspace reservation; and

c) the ability to interrupt or terminate activities.

5.3.2.3 It shall be understood that necessary protection required for aircraft likely to be operating in the vicinity of the area will be ensured by the ATC unit in whose airspace the temporary airspace reservation is established and, for this reason, the requesting agency shall abstain from adding any protective value to the size of the area requested. The duration of the airspace reservation shall be limited, taking a realistic account of preparation of the activities and the time required to vacate the reservation after the completion of the activities.

5.3.2.4 The actual use of the temporary airspace reservation shall be based on appropriate arrangements made between the ATS unit normally responsible for the airspace or special agents acting on its behalf, and the requesting agency. Such arrangements shall be based on the general agreement reached previously between the competent ATS authority or ATS authorities and the requesting agency. They should, inter alia, cover :

a) the start of the use of the temporary airspace reservation;

b) the termination of its use; and

c) emergency provisions in case of unforeseen events affecting the activities to be conducted within the temporary airspace reservation.

5.3.2.5 When a temporary airspace reservation extends into the area of responsibility of more than one ATS unit, the requesting agency shall negotiate this airspace reservation simultaneously with all ATS units concerned or the special agents acting on their behalf and the arrangements concluded shall be covered by common arrangements applicable to all parties concerned.

5.3.2.6 If a temporary airspace reservation, even though contained within the area of responsibility of one ATS unit only, is likely to affect the provision of air traffic services by adjacent ATS units in their areas of responsibility, the ATS unit directly affected by that airspace reservation shall ensure that necessary coordination with other concerned ATS units is made in good time.

5.3.2.7 The ATS unit normally responsible for the provision of air traffic services in the airspace covered by the temporary airspace reservation shall ensure that all traffic operating under its responsibility will not approach the limits (horizontal and vertical) of the temporary airspace closer than in accordance with specified values. Where necessary, such values shall be uniform and shall be established in accordance with agreements reached between the ATC authorities concerned for temporary airspace reservations in a given area.

5.4 Specific values for use in the NAT Region

5.4.1 The specific values given hereunder for use in the NAT Region to ensure that air traffic, under the control of the ATC unit concerned by a temporary airspace reservation, is not getting closer to the limit of a temporary airspace reservation, nearest to its flight path have, for convenience, been stated in the form of separation minima. They cover both horizontal and vertical values which should be used as specified hereafter.

5.4.2 The horizontal values to be used by ATC units concerned are split into lateral and longitudinal minimum values as follows :

5.4.2.1 The minimum values used in case of stationary temporary airspace reservation shall be :

a) within MNPS airspace :

i) 30 NM between the track of an aircraft operating under the control of the ATC unit concerned and the nearest limit of the reserved airspace, provided that the requested agency has guaranteed to confine its activities to the requested airspace; or

ii) 60 NM between the track of an aircraft operating under the control of the ATC unit concerned and the nearest limit of the reserved airspace if no such guarantee has been given;

b) outside MNPS airspace :

i) 60 NM between the track of an aircraft operating under the control of the ATC unit concerned and the nearest limit of the reserved airspace, provided that the requested agency has guaranteed to confine its activities to the requested airspace, except that, in that part of the New York OCA West of 60° W 45 NM may be applied; or

ii) 120 NM between the track of an aircraft operating under the control of the ATC unit concerned and the nearest limit of the reserved airspace if no such guarantee has been given, except that, in that part of the New York OCA West of 60° W 90 NM may be applied.

Note : For the requested guarantees in a) and b) above, para. 5.3.2.3 refers.

5.4.2.2 In the case of moving temporary airspace reservations the following values shall be used :

a) within MNPS airspace :

i) 60NM between the track of an aircraft operating under the control of the ATC unit concerned and the closest track of any of the aircraft for which the airspace is reserved, provided all aircraft concerned meet the MNPS ; or

ii) 120NM between the track of an aircraft operating under the control of the ATC unit concerned and the closest track of any of the aircraft for which the airspace is reserved, whenever one or more of the aircraft involved do not meet the MNPS.

b) outside MNPS airspace : 120NM between the track of an aircraft operating under the control of the ATC unit concerned and the closest track of any of the aircraft for which the airspace is reserved, except that, in that portion of the New York OCA West of 60°W 90NM may be applied.

5.4.2.3 Between aircraft operating under the control of the ATC unit concerned and the first and last aircraft operating within a moving temporary airspace reservation minimum longitudinal separation may be applied.

5.4.2.4 The vertical values used to separate aircraft under the control of an ATC unit from the lower or upper limit of temporary airspace reservations shall be those specified in Part III, para. 3.1 of the PANS-RAC.

5.5 Action proposed by the Group

5.5.1 Taking the above into account,the Group agreed that :

a) ICAO should, on its own and at the next suitable opportunity, take into account the proposals made in paragraphs 5.2 and 5.3 and include them in the PANS-RAC ; and

b) NAT provider States should apply the substance of the material contained in this Summary concurrently with the application of 60NM lateral separation (Conclusion 17/1 refers).

CONCLUSION 17/10 - TEMPORARY AIRSPACE RESERVATION

That :

a) ICAO, in its general review of the PANS-RAC, consider the proposal for inclusion of the new definitions in paragraph 5.2 and the material in paragraph 5.3 in appropriate form in that document ; and

b) NAT Provider States use the proposals in paragraphs 5.2 to 5.4 in the NAT Region as a basis for the development of appropriate material for inclusion in their ATC document and application as of the time when 60NM lateral separation will be applied in the NAT Region.

Agenda Item 6 : NAT Aeronautical Telecommunications

6.1 Introduction

6.1.1 Under this Item, the Group dealt with the following specific subjects regarding NAT aeronautical telecommunications:

a) developments related to the termination of the SCOTICE and ICECAN cable contracts;

b) review of the HF air-ground communication situation; and

c) review of the results of the trial application of fixed message formats in pilots' reports.

6.2 Developments related to the termination of the SCOTICE and ICECAN cable contracts

6.2.1 The Group was aware of the provisions made by the Limited EUR/NAM/NAT COM (AFS) RAN Meeting in January 1979 regarding the assessment of the telecommunications services expected to be available after 31 December 1982 in that area currently served by the SCOTICE and ICECAN cables when the existing contractual agreements for the use of those cables would expire. The study was to include the collection of information about cable availability, alternative systems and related leasing conditions and tariffs obtainable by the NAT cable provider States from their telecommunication agencies.

6.2.2 It was recalled that the basic operational requirements for ATS exchange requirements in the NAT area concerned were defined by the above Meeting, based among others, on a contribution provided by NAT/SPG 14.

6.2.3 As a follow-up of Recommendations made by the Limited RAN Meeting, the four States, leasing services in the SCOTICE and ICECAN cables, plus the USA as one of the major users of those cables, had met informally in November 1979 to collate and record information provided by telecommunication agencies concerning the options offered for the post-1982 period and related cost quotations. A wider-scope Informal Meeting was to be held from 16 to 20 June 1980, with the participation of all the States, signatories of the DEN/ICE Joint Financing Agreements, and its purpose was to update and evaluate the information provided to the first Informal Meeting with a view to making recommendations regarding the post-1982 circuit configuration required in the area concerned and consequential implications.

6.2.4 Since the recommendations to be made by the June 1980 Informal Meeting were expected to be based on a review of defined post-1982 operational requirements for NAT AFS communications, the Group felt that its advice would be both relevant and helpful in the context of that review. It therefore examined in detail the requirements considered by the November 1979 Informal NAT AFTN/AFS for the period 1/1/1983 to 31/12/1985 and those after 31/12/1985. The lists of circuits considered to be required in both these periods are shown in Appendix A to this Item.

6.2.5 In the views of the Group, these lists constituted the best estimate of requirements which could be made at the present stage. In particular, the Group wished to indicate its strong support for the retention, as a continuing operational requirement, of the Gander/Prins Christiansund A/G VHF remote facility controlled by Gander, in view of the important service provided by that facility (5500 radio contacts per month). The only addition to the above lists which may be necessary and should, in the opinion of the Group, be brought to the attention of the June 1980 Informal Meeting, was the requirement for a data circuit Prestwick-Reykjavik-Gander-Edmonton. This circuit may be needed in the period 1983-85 to permit ATS data transfer between the ACCs served in conjunction with the possible availability in that period of data processing equipment at those centres. This requirement was based on the assumption that it may not be practicable to effect the required data transfer on the recently commissioned omnibus ATS speech circuit between Edmonton, Gander and Reykjavik ACCs.

6.2.6 With regard to the options offered by the use of satellites for the period after 1985, the Group assumed that the new facilities would offer at least the same reliability and capacity as the current cable system.

6.2.7 Having been informed that the Informal Meeting in June was intended to be called an Informal NAT RAN Meeting and that the question of inviting IATA to attend that Meeting was still open, the Group requested the ICAO Representative of the European Office to inform ICAO that :

a) the Group was concerned about the use of the term "RAN" in the designation of that Meeting, because of the unwarranted associations this could provoke and that it would prefer to see this Meeting designated as the Informal NAT AFTN/AFS Meeting; and

b) in the view of the Group, it was desirable that IATA be invited to attend this Meeting.

6.3 Review of the HF air-ground communications situation

6.3.1 Based on a paper presented by the Member of the UK, the Group reviewed the results of the 1979 NAT HF data collection which had been made in accordance with Conclusion 15/7 of NAT/SPG 15. The arrangements for the data collection had been the same as for the 1978 exercise, i.e. a collection of data during three days in the summer period, when the alignment of the organised track system was North-about, Central and South-about respectively. The dates selected were : 14 July (Central track structure), 19 July (South-about) and 12 August (North - about).

6.3.2 A comparison of the HF communication traffic figures with those of 1978 showed a slight increase in HF traffic but a marked decrease in VHF traffic, averaging 726 position reports per day in 1979 compared with an average of 950 in 1978. However, as for the previous exercise, these figures could not be taken as evidence of corresponding variations of communication traffic in the NAT Region.

6.3.3 The distribution of loading on the four HF families appeared to be broadly comparable to that observed in 1978. The heaviest load was carried by Family A on two days and by Family C on one day. Overall, the heaviest load fell on the 8 MHz order frequency, both during day and, surprisingly, night hours; however, the 5 MHz frequency was most loaded during peak periods. Use of the 13 MHz order frequencies was, once more, relatively little. However, the Group believed it to be necessary to retain the 13 MHz order frequency assignements to cater for particular propagation conditions, especially during Summer.

6.3.4 Once again, Shannon Aeradio had the heaviest peak hourly load of 70 reports and, as could be expected, the participation by Søndrestrom was minimal, the ratio of HF to GP/VHF being of 18 : 157 during the three days. The message delays* were of 2.92 minutes in the mean, confirming a continued tendency to reduction (3.57 in 1977 and 3.15 in 1978). In particular, it was noted that the mean delays at Santa Maria had decreased from 3.49 minutes in 1978 to 3.32 minutes in 1979.

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* Delay is the time period which has elapsed between the moment an aircraft passes over a reporting point and the moment the HF ground station has completed reception of the corresponding position report. Mean delay is obtained by dividing the total delay of a number of messages by that number. It should be noted that the delay in transmission of reports from the HF operator to the responsible control position in the ACC is generally negligible (i.e. about 1 minute).

6.3.5 A survey of DSB/SSB capability carried out on 18 January 1980 at Shannon and Gander showed a ratio of 4.8% DSB to 95.2% SSB on Family A and 25.9% DSB to 74.1% SSB on Family D. An overall ratio of 4.1% DSB to 95.9% on actual HF operations was reported by Shannon. This appeared to confirm that very few commercial air transport operators continued to use DSB. In this regard and with reference to the findings of NAT/SPG 16 (paragraph 4.3.1 of Summary/16 refers), it was reported to the Group that these operators were, for technical and economical reasons, most likely unable to effect conversion to SSB before the agreed target date of February 1982. In connexion with the use of SSB by aircraft engaged in IGA operations (paragraph 4.3.2 of Summary/16 refers), an analysis of the situation indicated that the number of aircraft engaged in such operations was relatively small and that many of these aircraft were already SSB equipped. The remaining DSB-equipped IGA aircraft were reported to be in the same situation as the above-mentioned commercial aircraft, i.e. that no conversion to SSB could be expected before February 1982. As a consequence DSB facilities continued to be required for HF communications in the NAT Region until that date.

6.3.6 With regard to the proposed use by the USAF Military Air Transport Command (MAC) of the air-ground HF communication facilities and services provided in accordance with the ICAO NAT Regional Plan, (Summary/16, paragraph 4.3.3 and seq. refer), it was noted that the trial application of the new procedure throughout the NAT Region as from 25 October 1979 had been postponed. Consequently, no assessment could be made of the effect of this procedure on the NAT HF system as a whole.

6.3.7 Based on the results of the HF data collection exercise, the Group concluded that, apart from a comparatively higher loading of NAT HF Family A , the overall pattern was one of even distribution, with no evidence of overloading and no immediate requirement to change the current arrangements for traffic assignment.

6.3.8 As to the need for a further data collection in 1980, the Group was informed by its Member of Ireland that, because of a general proliferation of data collections of all types and the resultant strain on resources, his Administration could only accept this if there were compelling reasons for such an exercise. The Group felt however, that the introduction of reduced lateral separation later in the year (Summary on Item 1 refers) made it advisable to have latest information on the operation of the NAT HF system available and it was therefore agreed that such a collection should be made in 1980. As to future reviews, it was agreed that the Group would keep the need for economy in mind when deciding on those.

CONCLUSION 17/11 - NAT HF DATA COLLECTION IN 1980

That a three-day NAT HF data collection be conducted in 1980 with the same arrangements agreed for 1979, noting that :

a) Ireland will coordinate the exercise and select the dates in consultation with other participating States;

b) the United Kingdom will collate and analyze the results;

c) States concerned will retain message data for July and August 1980 until the dates have been selected;

d) Søndrestrom data will be included; and

e) completed data forms will be addressed to :

Civil Aviation Authority (CG2)
Room T 1113
CAA House
45-59, Kingsway
London WC2B 6TE

6.4 Review of the results of the trial application of fixed message formats in pilots'reports

6.4.1 The Member of the UK presented the Group with a Report on the trials carried out in accordance with Conclusion 14/18 of NAT/SPG 14 on fixed format R/T reporting procedures in the NAT Region during the period 22 March - 24 October 1979. It was recalled that implementation programmes for the installation and use of new Flight Data Processing Systems (FDPS) were in progress at Gander, Reykjavik and Shanwick OACs in the 1980s. These systems were to allow the direct input and processing of air-ground messages from the ground stations, in order to provide a faster and more efficient ATC service by eliminating the manual handling of these messages at the OACs. The trials were essentially intended to determine, from analysis of the data content and format of messages, the most cost-effective and efficient method(as to procedures and system hardware and software) for the direct input of these messages. An agreed NOTAM was issued by participating States, detailing the procedures and message formats to be used by flight crews during the trial period.

6.4.2 A total of 9797 messages were examined, of which 7299 (approximately 75%) were position reports, 997 clearance requests, 119 revised estimates and the rest miscellaneous messages. The major errors related to the omission of the message type prefix and the statement of time in four figures. A study of speech recording transcripts confirmed that the sequence of data in position reports was almost always correct and that the major errors in such reports were the omission of the prefix "POSITION" and, to a lesser extent, failure to express time in a four-figure group.

6.4.3 It was believed that the exercise had been useful because it has highlighted how system benefits could be accrued from the standardization of position reports which, as already mentioned, comprise the great majority of the total messages handled. The Group agreed that the improvement in R/T efficiency that could be achieved by the standardization of position report messages, which would involve only a minor amendment to the current practice, would make a major contribution to the overall system efficiency, in parallel with the availability of facilities to re-format messages at ground stations for direct input to automated systems. It was recognized that the latter facilities were difficult to standardize, in view of differing regional requirements for message handling. It was also found that it was not practical to expect pilots to classify other messages and put them into the correct format. It was therefore agreed that messages other than position reports should be classified and formatted by the ground station.

6.4.4 In conclusion, the Group agreed that, further to the need to standardize radio-telephony phraseology in order to eliminate ambiguities in communications between the pilot and the ground, in this particular context the standardization of position report messages could also contribute to an increase in the efficiency of their handling.

6.4.5 In order to achieve earliest possible full compliance by pilots with this procedure, it was also agreed that air-ground operators should remind pilots of it whenever it was found that they had failed to do so.

6.4.6 As a related matter and with reference to Conclusion 16/3 of NAT/SPG 16, the Group discussed the effect of the "next position" procedure on the loading of air-ground communications. An assessment of the situation showed that the system was able to accept the additional loading involved by the application of that procedure.

CONCLUSION 17/ 12 - FIXED MESSAGE FORMATS FOR POSITION REPORTS

That :

a) where the direct input of air-ground RTF messages into ATS data processing systems is required in the NAT Region, ground operators be provided with formatting assistance by real-time automated data facilities;

b) to ensure that ground stations receive all the essential elements of the position report message, and to improve the provision of air traffic services, the NAT Regional RTF procedures be amended so as to require pilots to conform with the revised position report message format;

c) the position report message requirements as specified in the PANS-RAC and in Document 7030 be amended to include the prefix "POSITION" and the "next position" element ;

d) to eliminate misunderstandings between pilots and controllers, the requirement to state the time in a four-figure group in RTF communications within the NAT Region be given the status of a NAT SUPP;

e) a formal proposal for amendment of the PANS-RAC and Document 7030 in respect of c) and d) above be presented by CANADA; and

f) the "next position" procedure as now applied on a trial basis be continued until it is formally included in the NAT RAC SUPPs in accordance with action resulting from e).

APPENDIX A
to Item 6

OPTIONS EXPECTED TO BE AVAILABLE IN THE PERIOD 1 JANUARY 1983-31 DECEMBER 1985 FOR THE PROVISION OF NAT AFS COMMUNICATIONS CURRENTLY PROVIDED BY THE ICECAN/SCOTICE CABLE SYSTEM

1. Post-1982 NAT AFTN/AFS operational requirements considered

1.1 The following circuits were considered to be required in the 1983-1985 period :

Circuit		Type and Use	
a)	London/Montreal	AFTN 2x75 Baud	
b)	Prestwick/Reykjavik/Gander	Speech omnibus	
c)	Prestwick/Gander	Speech	Speech plus
d)	Prestwick/Gander	(OACC-GAATS data)	
e)	Prestwick/Reykjavik/(Stavanger)*	Speech	
f)	London/Gufunes	AFTN 2x75 Baud	Speech plus
g)	(Edmonton)*/Gander/Reykjavik	Speech Omnibus	
h)	Gander/Prins Christiansund	A/G VHF remote	Speech plus
i)	Reykjavik/Søndrestrom	Speech	
j)	London/Montreal	AFTN 75 Baud	
k)	Gufunes/Søndrestrom	AFTN 50 Baud	
l)	Montreal/Gufunes	AFTN 75 Baud	

* Locations indicated in brackets are for circuit identification only - circuits to these locations are not costed.

OPTIONS EXPECTED TO BE AVAILABLE AFTER 31 DECEMBER 1985 FOR THE PROVISION OF NAT AFS COMMUNICATIONS CURRENTLY PROVIDED BY THE ICECAN/SCOTICE CABLE SYSTEM

1. Post-1985 NAT AFTN/AFS operational requirements considered.

1.1 Speech circuits

a) Prestwick - Reykjavik - Gander (Omnibus)
b) Reykjavik - Prestwick - (Stavanger)
c) Reykjavik - Gander - (Edmonton)
d) Gander - Frederiksdal (A/G VHF)
e) Prestwick - Gander
f) Reykjavik - Søndrestrom

1.2 Telegraph and Data circuits

g) London - Gufunes (Reykjavik) (AFTN)
h) London - Montreal (AFTN/CIDIN)
i) Montreal - Gufunes (Reykjavik) (AFTN)
j) Prestwick - Gander (OACC-GAATS)
k) Gufunes (Reykjavik)- Søndrestrom (AFTN)
l) Gander - Frederiksdal (Tx Control)

2. Assumptions

2.1 The ICECAN cable will no longer exist.

2.2 The Canada-United Kingdom circuits may be provided either by cable (e.g. CANTAT 2) or satellite.

2.3 The Iceland-United Kingdom circuits will be provided directly by satellite.

2.4 The Canada-Greenland and Canada-Iceland circuits will be provided directly by satellite.

2.5 The Greenland-Iceland circuits will be provided by satellite, either directly or via the U.K. or Canada.

2.6 Satellite communications will be available that permit multi-drop circuits.

Agenda Item 7 : Operational matters of current interest

7.1 Introduction

7.1.1 Under this item the Group considered the following subjects of current operational interest :

a) Status of proposals for amendment of the NAT RAC SUPPs ;

b) Compatibility of Oceanic ATC Systems ;

c) Requirement by operators to provide advance information on NAT tracks ;

d) Review of Polar Route OSCAR and its East-ward Extension to a point or points in Scandinavia ;

e) Fuel conservation measures including the use of step-climb techniques ;

f) Determination of the need to review MNPS certification procedures prior to the change of the present OMEGA station configuration ;

g) Review of the feasibility to extend MNPS airspace in the NAT Region to the North Pole ;

h) Review of latest developments regarding the OASIS project and other related studies ;

i) Air Race Paris-New York-Paris ;

j) Questions regarding NAT Traffic Data Collections ;

k) Delegation of a portion of Shanwick OCA to London ACC ;

l) Consolidated presentation of VHF GP coverage in the NAT Region at 15000 feet ; and

m) Reduction of lateral separation between SST aircraft.

7.2 Status of proposals for amendment of the NAT RAC SUPPs

7.2.1 The Secretary informed the Group that with the exception of one, action on all proposals for amendment to the NAT RAC SUPPs which had been initiated by the NAT/SPG was now completed. The outstanding proposal covered the inclusion of an additional portion of the North-Western part of the New York OCA into MNPS airspace. (NAT SUPPs-RAC/8 refers).

7.2.2 Prior to the Meeting, Canada had informed the European Office of ICAO that, while they agreed in principle with the proposals, it would wish to seize the opportunity of this Meeting of the NAT/SPG to clarify two points and the above proposals had therefore been held in abeyance. At this Meeting, the Member of Canada informed the Group that one of the points, namely the arrangements which should be made between Canada and the USA for North-South traffic operating between points on the Canadian East coast and points in the CAR Region through the MNPS airspace in question, had in the meantime been resolved because it had been decided that such traffic would be required to meet the MNPS.

7.2.3 The other outstanding point, i.e. when this extension should become effective, was cleared at this Meeting and it was agreed that the extension of the MNPS airspace in the New York OCA should become effective on 30 October 1980, i.e. the date at which it is proposed that 60NM lateral separation should be applied in the NAT Region. (Conclusion 17/1 refers).

7.3 Compatibility of Oceanic ATC systems

7.3.1 In a paper presented to this Meeting, IATA had expressed its views that, now that electronic data processing equipment was being introduced on an increasing scale into the OACs, special care would have to be taken in order to ensure that this did not have a negative influence on the compatibility between these OACs with respect to procedures used, exchange of ATS data and possibly even on their respective traffic handling capacities.

7.3.2 When discussing this subject, the Group noted that, in this field, close liaison was already maintained between Canada, Ireland and the U.K. and that, as of late Iceland has also joined in these coordination efforts. It was also stated that these States were fully prepared to extend this coordination to all other States wishing to join in this effort and that, upon request, they were prepared to provide any information regarding their plans with respect to the use of electronic data processing equipment in their OACs. The Member of the USA stated that developments in his administration were such that initial steps towards the introduction of such equipment into the New York OAC had been taken and he stated that the USA was prepared to maintain close contact with those already more deeply engaged in such work. The Representative of Portugal informed the Group that his Government had recently allocated substantial funds to the modernisation of Santa Maria OAC and that initial work in this field was under way. He also conformed that close contacts would be maintained with all other parties concerned.

7.3.3 With regard to the use of electronic data processing in OACs itself, the Group noted that, while the ATC Automation Panel of ICAO some years ago had done very valuable work in specifying message contents and formats for the exchange of essential data between ATC units using electronic data processing equipment, such work had,however, mainly been concentrated on requirements as they existed in and between domestic ATC units, while the specific requirements for data exchanges between OACs had not been considered in sufficient detail. It therefore appeared to the Group that, in this respect, further work was required which would not only be of benefit to the NAT Region , but should also be of assistance in other oceanic areas.

7.3.4 With reference to the specific situation in the NAT Region it was also agreed that, when extending the use of electronic data processing to new OACs it would be essential to ensure that "newcomers" in this field took due account of existing arrangements to avoid either incompatibility in the operation of the various systems or the need for extensive , and possibly costly modifications to equipment which was already in operation.

CONCLUSION 17/ 13 - COMPATIBILITY OF ATC SYSTEMS IN THE NAT REGION

That Provider States in the NAT Region :

a) take all necessary measures to ensure that ATC procedures employed within their OACs are fully compatible with those used in adjacent OACs and do not have a detrimental effect upon the operation of the system as a whole ;

b) ensure that ATS data exchange requirements of their OACs, resulting from the introduction of electronic data processing, do not create compatibility problems with those of adjacent OACs and that, to this end, they join their efforts in developing ATS message contents and formats for oceanic control purposes, supplementary to those already developed within ICAO ;

c) in conducting their work in accordance with b), ensure that direct computer-to-computer exchange of information is made possible whenever conditions permit this to be done ;

d) arrange for meetings between appropriately qualified experts whenever this is necessary in order to pursue the objectives in paragraph a) to c) above ;

e) keep in mind the need to ensure that the traffic handling capacity of their OACs is comparable with that of adjacent OACs and consistent with the reasonable traffic demands likely to be imposed on the ATC system as a whole ; and

f) take necessary measures to ensure that, when entering domestic airspace NAT traffic can be absorbed by the ACCs concerned under optimum conditions and that air traffic flow problems in these areas do not have a negative effect on the flow of air traffic in the NAT Region.

7.4 Requirements by operators to provide advance information on NAT tracks

7.4.1 Under this Item IATA pointed out that, to their knowledge Gander OAC was receiving only limited information from operators regarding their planned flight operations. The question therefore was whether this presented any problems. The Member of Canada informed the Group that, in fact, at present only a small number of operators provided this information to Gander OAC in time to be taken into account in the establishment of the organized track system. He stated, however, also that this was not due to Gander OAC neglecting this information, but simply due to the fact that more such information was not received. This was therefore a problem which rested entirely with the operators and he assured the Group that, if more operators provided the information in time , Gander OAC would use it to best advantage.

7.4.2 The Member of the U.K. pointed out that, at Shanwick OAC the provision of such information by operators was satisfactory and was found to be very useful because it permitted Shanwick OAC to have an early appreciation of anticipated track demand.

7.4.3 The Group therefore noted that there was no need for action by it but left it to operators to make necessary arrangements to provide OACs concerned with timely information on their intentions. As to the possible future need by operators to provide information to OACs regarding flight operations between the EUR and the CAR and SAM Regions, this matter was handled under Item 4.

7.5 Review of Polar Route OSCAR

7.5.1 Prior to the Meeting, IATA had requested that the question of the extension of Polar Route OSCAR from the limit of the Reykjavik FIR to points in Scandinavia should be discussed. At the Meeting, the Representatives of Iceland and Norway informed the Group that their States could accept the extension towards Trondheim and Vigra. The Group noted this with satisfaction and agreed that no further action was therefore required.

7.5.2 While on the question of Polar routes, it was also mentioned that it might be useful if Polar route NOVEMBER, extending from Scandinavia via the North Pole to Anchorage, which is already being used, were given a more regular status. It was, however, noted that, in order to achieve this action was not only required on the part of Norway, Iceland, Canada and the USA but that this would also involve the USSR because of the confluence of FIR boundaries at the North Pole including that of Dixon FIR. As no particularly pressing operational problems were encountered in operating along that route, there was a general feeling that this was not necessarily a subject for urgent action and the Group therefore left it to the States concerned to pursue discussion of this matter amongst themselves on the understanding that once agreement on a specific course of action had been reached, this would be brought before the Group for review.

7.6 Fuel Conservation

7.6.1 Further to discussions at NAT/SPG 10, NAT/SPG 11 and NAT/SPG 15, the question of fuel conservation was raised again with specific attention on the two following subjects :

a) increased use of step-climb techniques ; and

b) Fuel conservation through the use of improved MET information.

Increased Use of step-climb techniques

7.6.2 IFALPA presented the Group with a paper in which it was pointed out that, due to general developments regarding the availability of fuel, the improved use of fuel saving techniques in flight operations had gained more and more importance. In addition to what had been stated on this subject at NAT/SPG 16, it had now been confirmed that as regards fuel conservation there existed a close relationship between the flight level used and the Mach number flown at this flight level. Therefore, in order to obtain optimum fuel economy it was not only essential that pilots seek the optimum flight level in relation to the prevailing meteorological conditions but that operations at that flight level should also be performed at the most economic Mach Number.

7.6.3 In view of these developments IFALPA felt that the NOTAM previously developed by NAT/SPG and encouraging the pilot to state, upon entry into the NAT Region, the highest flight level he is prepared to accept and the position or time at which such higher flight level was acceptable, had not produced the desired results. This may be due to the fact that, if that information had not resulted on control action apparent to the pilot, some pilots had been discouraged to a point where,after a few unsuccessful tries, they abandoned this procedure completely.

7.6.4 It was therefore agreed that in view of the economic significance of this subject new efforts should be made and the Group therefore agreed on the text of a revised NOTAM Class II for publication by all NAT Provider States.

CONCLUSION 17/14 - FUEL CONSERVATION

That the revised NOTAM on fuel conservation shown in Appendix A to the Summary on this Item be published on 17 April 1980 by Canada, Denmark, Iceland, Portugal, the U.K. and the USA and that previous NOTAMS on the same subject be cancelled as of that date, unless they were supplementary to the points made in the attached NOTAM.

Fuel Conservation through the use of improved MET information

7.6.5 Further to previous information provided by the Member of the USA to the Group on studies conducted in the USA regarding fuel conservation through the use of improved meteorological data for both the preparation of MET forecasts and flight plans by operators (paragraph 10.1 in Summary/16 refers) th Group was now informed of latest progress made in this field. The Group noted with interest that the studies undertaken were progressing according to schedule and it reiterated its previous interest in this matter because, once concluded, it would be expected that the application of these studies could lead to better meteorological forecasts for the NAT Region because this would be based on more and more up-to-date actual MET information. This in turn would then permit that the orientation of the organized track system would more closely correspond to meteorological conditions, thus permitting operators to save fuel.

7.6.6 In addition, the continued availabilty of up-to-date meteorological information regarding existing conditions in the NAT Region should permit operators, using the established organized track system, to select more accurately the desired track and level with the track system for a specific operation which again could result in fuel economies for particular flight operations.

7.6.7 Taking the above into account, it was agreed that developments in this field should be kept under review by the Group and it was noted that the USA, as well as Canada and the UK, which actively participated in this work, would ensure that applicable operational considerations were injected into these studies to ensure that results corresponded as closely as possible to practical needs as these arose in day-to-day operations.

7.6.8 Finally the Group wished to place on record its appreciation for the work which was being done on this matter.

7.7 MNPS Certification

7.7.1 The Group noted that, in October 1980, it was intended to withdraw the OMEGA station at Trinidad and the question was raised whether this could have any effect upon the certification for operation in the MNPS airspace by operators equipped with OMEGA navigation equipment only.

7.7.2 In reviewing the question the Group noted that, theoretically, there existed a possibility that, if an operator had received its certification for operation in the NAT MNPS airspace based on the exclusive use of OMEGA, this could cause difficulties if, after withdrawal of the Trinidad Station a further station(e.g. that in Norway) was temporarily withdrawn from service. It was, however, noted that in practice the vast majority of operators concerned were able to use VLF stations for supplementary navigation assistance. This presupposed, however, that the operating status of such facilities was covered by appropriate NOTAM action and it was noted that this was under active consideration by States concerned and could be expected to be resolved shortly.

7.7.3 It could therefore be expected that the hypothetical case mentioned above would only effect very few operators, if any. Nevertheless, to be on the safe side, the Group felt it necessary to draw the attention of the States of Registry concerned to this possibility so that they could react appropriately before October 1980 if this was found necessary.

CONCLUSION 17/15 - REVIEW OF MNPS CERTIFICATION PRIOR TO THE WITHDRAWAL OF THE OMEGA STATION AT TRINIDAD

That States of Registry, whose certification for operators to operate in the NAT MNPS airspace depended upon the use of OMEGA should, prior to the withdrawal of the OMEGA station at Trinidad, review whether such certification will remain valid once that station is withdrawn.

7.8 Extension of MNPS airspace to the North Pole

7.8.1 The Representative of Iceland presented the Group with a paper in which is was proposed that MNPS airspace within the Reykjavik CTA should be extended from its present Northern limit of 67°N up to the North Pole. The proposal was based on the fact that the vast majority of operators, flying within the Reykjavik FIR North of 67°N were already certified for operations in MNPS airspace and, if accepted, this would then permit Reykjavik ACC to apply the separation minima associated with MNPS in that airspace.

7.8.2 Discussion of this proposal in the Group revealed, however, that there were a number of questions which needed resolution before it could be endorsed by the Group. One of these was, whether the conversion of this airspace to MNPS status would not create difficulties to certain flight operations now conducted over Greenland by aircraft not meeting the MNPS criteria. A further question was how the transition problem from lateral separation based on MNPS to conventional lateral separation should be resolved once aircraft were leaving MNPS airspace in the direction of the NAM Region, where the application of MNPS was not possible because no Regional Air Navigation Agreement authorising the use of MNPS existed for that Region.

7.8.3 It was felt that these two points alone merited further investigation before it would be possible to reach a firm conclusion on this subject. Nevertheless, the Group wanted to put on record that it was in general favourable to the proposal by Iceland provided it could be assured that all questions raised by it could be satisfactorily resolved. In the meantime, it was suggested that Iceland pursue its studies on this project in co-operation with all other parties concerned, more especially Canada and Denmark, and report back to the Group at its next Meeting on the progress made in the resolution of outstanding problems.

7.9 Progress Report on the OASIS Project

7.9.1 Further to discussions at NAT/SPG 14 and NAT/SPG 15 (Item 8 of Summary/15 refers), the Member of the U.K. presented to the Group a report on progress made in the studies conducted by the "Committee to Review the Application of Satellites and other Techniques to Civil Aviation". This report had been prepared by the Chairman of this Committee, Mr. R. E. Cox. From this it was apparent that studies on the OASIS project were proceeding and that results obtained so far were very promising. It was also noted that these studies were not exclusively orientated on the use of satellite techniques but were all embracing and thus covering many other aspects.

7.9.2 As a consequence the Group was informed that those of its Members having had the opportunity to look at the work done were impressed with the thoroughness and the effort which had been invested in the studies by those charged with them, especially SRI, International. The Group therefore wanted to express its appreciation for the work done because it felt that, once completed, it could be a useful tool for future air navigation planning in the NAT Region. It also urged those States now participating in the activities of the Committee to maintain their efforts in this direction and to ensure that relevant operational considerations continued to be injected into the work of the Committee so that its studies were directed towards the solution of practical problems as experienced in the NAT Region.

7.9.3 This latter appeal applied particularly with respect to a Meeting planned by the Committee to be held in May 1980 in Williamsburg where the Flight Cost Model for the NAT Region together with possible System Improvement Options will be reviewed because it was felt that this material could be of considerable use to the NAT/SPG in its future work.

CONCLUSION 17/16 - LIAISON BETWEEN THE NAT/SPG AND OTHER BODIES ON NAT AIR NAVIGATION MATTERS

That,

a) further to Conclusion 15/8 Canada, the U.K. and the USA continue to support the activities of the "Committee to Review the Application of Satellite and other Techniques to Civil Aviation" by providing information on latest operational requirements in respect of the NAT Region ; and

b) the above mentioned Committee be requested to make available to the NAT/SPG its Flight Cost Model for the NAT Region and material on possible System Improvement Options as soon as this has been finalized so that they may be used by the NAT/SPG in its future work.

7.10 Air Race Paris-New York-Paris

7.10.1 The Member of France seized the opportunity of this Meeting of the NAT/SPG to inform the Group about the intention of a French association to organize, on the occasion of the Salon Aéronautique in 1981, an air race from Paris to New York and back, so that Members of the Group and other Participants in this Meeting could provide advance information to their Administrations on this event.

7.10.2 Particulars of this Air Race as they are known at this time were :

a) the race will be organized by the "Association pour la course transatlantique en avion" and will be recognized as an official contest by the Fédération Aéronautique Internationale (FAI) ;

b) the tentative dates for the contest are 4 to 14 June 1981 and its maximum duration is planned to be 144 hours plus 24 hours stop-over in New York, i.e. 7 days ;

c) the official starting point of the contest will be Paris/ Le Bourget aerodrome, however, the actual departure point for the race will be an aerodrome in the vicinity of Paris, and departures from that aerodrome for flight across the North Atlantic may spread over a period of two days. The turn-around point will be an aerodrome in the New York area which is yet to be determined (tentatively Teterboro was mentioned) and the final destination will be Paris/Le Bourget airport ;

d) the route of flight by each contestant will be left to his free choice on condition that it is placed North of 40°N and the number of en-route stops may be selected from a pre-established list of aerodromes in Ireland, Scotland, Iceland, Greenland, Canada and the USA. The definite selection of these aerodromes is yet to be established ;

e) participating aircraft are classified in three categories as follows :

i) Category I : single-piston-engined aeroplanes for an all-up weight under 3 tonnes

ii) Category II : multi-piston-engined aeroplanes certified for an all-up weight under 3 tonnes

iii) Category III: aeroplanes of all types certified for an all-up weight from 3 to 20 tonnes.

f) participating aircraft will be required to be manned by a pilot and a co-pilot, and the pilot-in-command must hold a valid IFR rating and have at least 500 hours flying time to his credit (co-pilot 200 hours) ;

g) participating aircraft must, as a minimum, be equipped with short-range radio-navigation equipment and with functioning HF air/ground communications equipment. The installation and operational status of the equipment will be checked prior to departure ;

h) flights will have to be conducted in accordance with IFR and flight crews will be required to strictly comply with all procedures required to be observed by IFR flights and also to those dictated by flight safety considerations ;

i) aircraft which are registered in France or in any other State, will be authorised to participate and the expected number of aircraft participating in the contest is about 100 of which 2/3 are expected to be single or twin-piston-engined aeroplanes ; and

j) the contest is intended to receive coverage by the press, radio and television in order to achieve its intended objective of promoting general aviation by demonstrating its operating performance and safety in such operations.

7.10.3 In placing this information before the NAT/SPG, the Member of France made it clear that it was not his intention to seek endorsement of this event by the NAT/SPG but that he was rather interested in obtaining first hand expert views on likely problems to be encountered or advice on specific avenues which should be pursued in the final determination of the conditions under which the contest would take place. In the course of discussions, it became apparent that there was a need to explore a number of aspects of this contest in more detail and this referred in the main to :

a) the question of the availability of en-route aerodromes including adequate servicing and catering facilities at such aerodromes. This applies particularly to certain aerodromes in Greenland where, if they were to be used for re-fuelling stops, the necessary fuel would have to be provided not later than August 1980 because of the inaccessibility of the related harbour facilities of those aerodromes after that time of the year ;

b) the provision of the adequate SAR services and related questions of cost for the provision of such services ;

c) the provision of a specific communication channel for "operational control" purposes between competitors on the one hand and the contest organisers and/or radio and television on the other for live coverage of the contest ; (in this context it was noted that, at least in some countries, air-ground communications were considered as privileged communications which could not be made accessible to the public) ;

d) the identification of participating aircraft during the contest to ensure rapid recognition and their sequential number within the contest ;

e) the mandatory requirement for the carriage of SSR transponders in the 4096-Code configuration, including Mode C ;

f) the requirement, by participating pilots to be fully conversant with applicable ATC procedures both by operating in the oceanic airspace and when entering the domestic airspaces on either side of the North Atlantic (on this occasion stress was laid on the need of fluency in English radio telephony communications);

g) the consequences on contestants and their flying times resulting from the need to strictly comply with ATC clearances received which,for obvious reasons, must be based by ATC on the traffic situation as it exists at the moment contestants enter the system and on the capacity of the ATC system at that time.

7.10.4 In summary, the Group noted the intention to hold this contest and suggested that the the organisers initiate formal approaches through official channels to administrations likely to be affected by this contest.

7.10.5 Finally, the Group believed it useful if the names and addresses of those organizing the contest were given in this Summary to as to facilitate contacts between them and the Administrations concerned. The addresses in question are :

a) M. Serge MOYET
President, AIRTRANSAT
83, Boulevard Exelmans
75016 Paris

Tel : 651 65 50

b) M. Alain DUBREUCQUE
5, rue de l'Effort Mutuel
91120 Palaiseau

Tel : 014 23 94

c) M. Claude BAUMGARTNER
90bis, Boulevard Raymond Poincaré
92380 Garches

Tel : 741 19 38

7.11 NAT Traffic data collection

7.11.1 Under this Item the Group dealt with the following two points :

a) arrangements for the collection and collation of data on actual traffic in 1980, intended to be used for the preparation of the 1981-1985 Traffic Forecasts of the NAT/TFG ; and

b) further review of the proposal by the OAC Chiefs to standardize, throughout the NAT Region, the manner in which data on actual flight operation was recorded in order to serve for the resolution of shorter-term traffic management and ATC problems by OACs.

NAT Traffic Data collection for NAT/TFG

7.11.2 The Member of the U.K. informed the Group that as far as 1979 actual data was concerned, this had been provided by all parties concerned and the NAT/TFG intended to hold the Meeting in May 1980 at which it would prepare the traffic forecasts covering the period for 1980-1984, as the previous two data collections had been undertaken by Canada and the USA respectively, the U.K. would normally have assumed this task for 1980. However, since the U.K. was engaged in the conduct of a general aviation census in 1980, covering the entire U.K. airspace as well as in a EUROCONTROL general air traffic survey of controlled traffic, his Administration would not be in a position to assume this task for that year. He therefore requested that one of the other two participants in the NAT/TFG agreed to assume this responsibility for 1980. The Member of Canada stated that his administration was prepared to assume this task and requested that traffic data for the periods 1-7 July and 1-7 November 1980 be sent as early as possible after that period to the following address :

Mr. K. G. McDonald
ATP1/T
Transport Canada
Ottawa, Ontario
K1A 0N8

Canada

Collection of data for short-term management purposes

7.11.3 At NAT/SPG 16, the Group had been informed that, at the Annual De-briefing Meetingof the NAT OAC Chiefs in 1979, it had been proposed that data on actual flight operations, collected by the various OACs should be recorded and presented in a uniform manner so that it could serve as a basis for the Resolution of shorter-term traffic management and ATC problems within and between OACs. At that Meeting the NAT/SPG, while supporting this proposal in principle had requested the initiators of this proposal to develop it further so that it would be possible to better appreciate all its consequences. In particular the NAT/SPG had asked that the following points be covered in as much detail as was possible :

a) the concept upon which the proposal was based and the objectives it was intended to meet ;

b) a description of the methods to be used in the data collection ; and

c) detailed proposals for formats for the recording and presentation of the data.

7.11.4 The Group was presented with a Working Paper by the Member of Canada which contained detailed proposals regarding the data collecting points to be used by the different OACs as well as formats for the recording of daily, monthly and yearly traffic flows. It was pointed out that in the experience of Gander OAC, the use of these formats had proved to be useful, not only for the assessment of daily variations in air traffic in its area of responsibility but also with respect to the hourly distribution of such traffic during peak and off-peak periods. It was further pointed out that, based on these records and with comparatively little additional work, it was possible to establish detailed records of the track and flight level occupation within the organized track system during specific hours or days, it this was needed for a more detailed analysis of the traffic flow. Finally, the Member of Canada stated that, from their experience, the completion of the proposed forms did not present an unacceptable additional workload to ATC.

7.11.5 The Group therefore agreed that, subject to the resolution of some minor details which were best resolved between those actively conducting this collection, a data collection along the lines proposed by Canada should be made in 1980 by all OACs. As soon as possible thereafter, the results obtained should be reviewed by OACs and on appraisal of the results achieved should these be presented to the NAT/SPG. The NAT/SPG would then decide what further action should be taken.

CONCLUSION 17/17 - DATA COLLECTION BY OACS ON ACTUAL FLIGHT OPERATIONS IN 1980

That

a) Provider States in the NAT Region instruct their OACs to conduct a data collection on actual flight operations in accordance with the proposal of Canada and as amended by mutual agreement between the Chiefs of OACs ;

b) the results of the individual data collections by OACs be collected and collated into one single document and that this be reviewed critically by Provider States concerned with regard to its usefulness for the resolution of short-term air traffic management and ATC problems within and between OACs ; and

c) the consolidated data collection, together with appropriate comments resulting from the critical review, be made available to the NAT/SPG for review as soon as possible after the end of the collection exercise.

7.12 Delegation of a portion of Shanwick OCA to London ACC

7.12.1 Further to information provided at NAT/SPG 16 (paragraph 6.5 of Summary/16 refers), the Member of the UK informed the Group that the SSR facility and the remote-controlled VHF air/ground communication station at Mount Gabriel in Southern Ireland had been put into operational service on 21 February 1980 and that trials regarding their operational use by London ACC were going on. As it had been found up to now that the performance of these two facilities was giving complete satisfaction, he informed the Group that arrangements were being made between Ireland and the U.K. to permit the full delegation of responsibility for the provision of ATC services within that part of the Shanwick OCA covered by these two facilities to London ACC as soon as possible after the summer period of 1980. In the interim, the facilities in question were being used to best advantage, based on ad hoc arrangements between Shanwick and London ACC.

7.13 VHF GP Coverage in the NAT Region at 15000 feet

7.13.1 Further to the review of this long standing subject made at NAT/SPG 16, (paragraph 6.10 of Summary/16 refers), the Secretary presented to the Group the consolidated VHF GP coverage chart for the NAT Region as it resulted from latest information provided by States. Upon closer review it was however noted that the coverage shown in the area South of Greenland appeared to be too optimistic. The Group felt that it would therefore be desirable to have that coverage confirmed by appropriate operational checks before it was inserted in the chart in order to avoid giving inaccurate information.

7.13.2 In order to avoid further delay to the publication of the chart, the Group agreed that Denmark should be invited to provide the European Office of ICAO with corrected data regarding this point and this not later than 24 April 1980 and that, after incorporation of the information provided, the European Office of ICAO should transmit the corrected chart without further delay to Provider States concerned together with a request for its publication in AIPs as appropriate.

CONCLUSION 17/ 18 - VHF GP COVERAGE AT 15000 FEET.

That :

a) Denmark provide the European Office of ICAO, not later than 24 April 1980 with correct information regarding the coverage obtainable in the area South of Greenland ; and

b) the European Office of ICAO transmit the corrected consolidated chart to NAT Provider States without further delay for publication by those States in the appropriate section of their AIPs.

7.14 SST Separation

7.14.1 At NAT/SPG 16, the question of lateral separation between SST aircraft was briefly reviewed (paragraph 1.5 of Summary /16 refers) and at that Meeting it was agreed that, before pursuing a complex technical solution to the problems encountered, efforts should be made by States concerned to resolve these problems by direct coordination with the two operators using SST aircraft in the NAT Region.

7.14.2 The Member of the USA now informed the Group that, at a recent meeting at New York ACC, it had been possible to reach agreement between that Centre and the two operators concerned to arrange their SST flights so that previous problems would no longer occur. This was noted with satisfaction.

APPENDIX A
to Item 7

DRAFT NOTAM CLASS II

FUEL CONSERVATION

In view of the current energy situation, the following points are brought to the attention of pilots operating in the NAT Region so as to ensure that each aircraft is operated as close as possible to its optimum flight level and Mach Number.

1. Pilots should request a change of flight level or Mach Number whenever this would improve the operating efficiency of the aircraft. Refusals (due to other traffic) should not deter pilots from making such requests.

2. Where possible pilots should give advance warning of a request; e.g. if a Westbound flight wishes to climb at 30°W it will assist the controller if the request is made with the position report at 20°W.

3. When circumstances render this feasible, controllers will ask other aircraft to accept higher flight levels or changes of Mach Number in order to facilitate clearances for aircraft which would otherwise experience a significant penalty. In agreeing to such requests, pilots will contribute to the overall economy in fuel used.

This NOTAM cancels NOTAM Class II*_____

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* Insert here reference to previous NOTAM or NOTAMs published on this subject.

Agenda Item 8 : Future work programme and arrangements for the next Meeting

8.1 Introduction

8.1.1 As usual at the end of the Meeting, the Group made a review of its future work programme. This review was divided into the following two subjects :

a) arrangements for the next Meeting ; and

b) tentative arrangements for the foreseeable future beyond that Meeting.

8.2 Arrangements for the Next Meeting

8.2.1 The Group noted that tentative arrangements had already been made to hold its 18 Meeting in May 1981 and it was noted that, due to other urgent commitments which had to be met by the European Office of ICAO in that year, there was little likelihood that this date could be advanced to earlier in 1981.

8.2.2 The Summary of Items discussed at this Meeting listed a number of subjects on which the Group as a whole or specific Members were requested to do preparatory work prior to NAT/SPG 18 and the subjects and parties concerned are listed hereunder for convenience :

a) those representing NAT Provider States to review the continued need by pilots concerned to insert in their flight plan an indication that their aircraft is capable of meeting the MNPS ;

b) the Members of Canada, the U.K. and the USA to prepare material on the updating of Attachment H in the PANS-RAC, and the development of NAT RAC SUPPs regarding the use of the Mach number technique (paragraph 3.4 refers) ;

c) Iceland in collaboration with Canada and Denmark to prepare a detailed proposal for the extension of the MNPS airspace to the North Pole (paragraph 7.8 refers)

d) the Members of Canada, the U.K. and the USA to inform the Group on progress achieved with the OASIS project and more especially the Flight Cost Model and possible System Improvement Options developed within this project (para. 7.9 refers) ;

e) those representing NAT Provider States to inform the Group on progress achieved with respect to the standardized collections by OACs of traffic data for short-term management and ATC purposes (paragraph 7.11 refers).

8.2.3 From the above, and taking into account all pending matters considered at this Meeting the Group agreed that the following items should tentatively be retained for consideration at NAT/SPG 18 :

a) review of the situation regarding lateral separation in the NAT Region after the application of 60NM lateral separation ;

b) review of the situation regarding the introduction of reduced longitudinal separation to specific types of flights planned and related position reporting procedures for application as of 26 November 1981 ;

c) review of the developments regarding crossing and joining traffic in the NAT Region ;

d) review of the situation with regard to the application of Electronic Data processing in OACs and resultant questions ;

e) review of the situation regarding IGA operations in the NAT Region ;

f) review of the HF situation in the light of the data collection made in 1980 ;

g) review of future trends in air navigation developments in the NAT Region, taking into account the OASIS study and other relevant matters (paragraph 1.1.5 on page ii refers) ;

h) review of the situation regarding the collection of statistical data in the NAT Region both for traffic forecasting and traffic management purposes ; and

i) exchange of views on the need for ICAO to plan for a Limited NAT RAN Meeting in 1982 and, if so, development of proposals for subjects to be covered by such a Meeting.

8.2.4 With regard to the item mentioned under i) above, the Group noted that present tentative planning within ICAO envisaged the convening of a LIM NAT (RAC/COM) RAN Meeting sometime in 1982 and it therefore appeared useful to the Group if, well in advance of a decision by ICAO on that Meeting, the Group were to provide an input to ICAO reflecting its views on this matter so that these could be taken into account in good time.

8.2.5 As to the venue of NAT/SPG 18 the Group agreed that it should be held in the European Office of ICAO for a duration of some 10 working days and that participation by States and International Organizations in that Meeting should be identical to that of NAT/SPG 17.

8.3 Future work programme

8.3.1 As to the meetings up to and including 1983 the Group agreed that one meeting each in 1982 and 1983 should be envisaged at this time on the understanding that the meeting in 1982 would have to be adjusted so as to assist in the conduct of a LIM NAT RAN Meeting in that year, should it be decided by ICAO to hold such a meeting.

8.3.2 Apart from that the Group was informed that, due to regional planning activities regarding the EUR Region, the NAT/SPG meetings in 1982 and in 1983 should best be scheduled for sometime in March of these years. This would also have the advantage that any short-term measures agreed at these meetings for immediate application, could be brought into effect prior to the start of the Summer peak traffic period of the year in question.

8.3.3 With regard to the Items retained for consideration at NAT/SPG 19 in 1982, the Group was able to make only a very approximate estimate but it believed that the following two items would definitely require consideration ;

a) review of the situation after the introduction of the use of 10 minutes longitudinal separation to flights operating under specified considerations in the NAT Region ; and

b) review of developments in the field of satellite techniques and their possible impact on developments in the NAT Region.

8.3.4 With regard to NAT/SPG 20 in 1983 even greater uncertainty existed as as to the likely subjects for discussion. However, it was noted that, by that time, the situation in the NAT Region may have developed so that at least tentative arrangements regarding the use of composite separation in the NAT Region could be discussed. In addition the subject of satellite developments should receive further attention by the Group.

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

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