



**Documents of the Extraordinary Administrative Radio Conference for the preparation of a revised
allotment plan for the aeronautical mobile (R) service (2nd session) (EARC-66)
(Geneva, 1966)**

Document No. II/208

The following two documents, referred to in Document No. II/208, point 3, are available as Information (INF) documents:

- Observations of the representatives of I.C.A.O. concerning the implementation of the new frequency allotment plan
- Notes by the observer of the I.A.T.A. on implementation of the new allotment plan

Geneva, 1966

Date : 20 April 1966

COMMITTEE 6

OBSERVATIONS OF THE REPRESENTATIVES OF I.C.A.O. CONCERNING
THE IMPLEMENTATION OF THE NEW FREQUENCY ALLOTMENT PLAN

The Representatives of I.C.A.O. have given some thought to the question of the implications of the change-over from the presently used frequencies to those of the new Allotment Plan, and the following observations are offered to assist the Conference in its discussions on the subject. It should be borne in mind, however, that these are the personal opinions of the I.C.A.O. Representatives on matters on which no official I.C.A.O. position has yet been established. Further, certain assumptions had to be made which may or may not prove valid.

With respect to international civil aviation, the implementation of the frequencies in the new Allotment Plan would, in the first instance, require amendment to the HF part of the Regional Plans for the Aeronautical Mobile Service. These plans are reflected in the requirements established by Committee 5 and included in Document No. II/128. For obvious operational reasons the change from existing I.C.A.O. Regional Plans to new ones, must be done on a co-ordinated basis. In other words, new frequency assignment plans must be prepared for all I.C.A.O. regions, (these can be regarded as amendments to the Regional Air Navigation Plans). The question of their implementation (dates, method of implementation, etc.) should be regarded as a separate issue.

The I.C.A.O. COM/OPS Meeting which will convene in October of this year has an item on its Agenda dealing with the outcome of the present Conference. While it may be presumptuous to prejudge the trend of discussions on this item by the COM/OPS Meeting and the conclusions it may reach, undoubtedly the Meeting will discuss the methods which could most profitably be used to arrive at replacement of the present regional HF assignment plans for the various regions by amended plans, based on the new allotments. This could be done in a number of ways, but the most likely ones would appear to be:

- a) the preparation of draft frequency assignment plans by the Secretariat for finalization through correspondence with States;
- b) the preparation of frequency assignment plans through the medium of a series of regional meetings;
- c) by a combination of a) and b) above, taking advantage of such regional meetings as are already scheduled for the near future (say in 1966 and 1967).



Of the above alternatives, c) would appear to offer the best possibilities of arriving at the objectives within a reasonable time period. In passing, it may be commented that in the opinion of the I.C.A.O. Representatives, the COM/OPS Meeting is not the proper forum to develop regional frequency assignment plans, nor would it have time to do so.

Therefore, based on the assumption that the I.C.A.O. Secretariat would be charged with the task of developing the necessary frequency assignment plans (amendments to Regional Air Navigation Plans) for all, or the majority of I.C.A.O. regions, a schedule for the completion of this task has been developed of which the main points are given below. This schedule is based on experience with similar matters, but it should be stressed that it has been assumed that no major delays will occur in such questions as production and translation of the necessary documentation, the Air Navigation Commission and the Council of I.C.A.O. being in session when their endorsement and/or approval is needed, and that the comments of States are of such a nature that a second round of consultations would not become necessary. The schedule is therefore the most optimistic forecast that can be made at this time with respect to the date at which approved new assignment plans can be made available to all States.

Schedule for the preparation of regional frequency plans

- Approx. 15 December 1966 - Approval by the I.C.A.O. Council of the recommendations of the COM/OPS Meeting dealing with the method of preparing new frequency assignment plans.
- Approx. 1 April 1967 - Letter to all States with draft frequency assignment plans.
- Approx. 15 August 1967 - Target date for receipt of States' comments.
- Approx. 15 November 1967 - Council approval of the new plans.
- Approx. 15 December 1967 - Letter to States advising them of Council's approval, together with the new plans, amended as necessary.
- Approx. 1 February 1968 - All States have received notification of approval.

Action by States to prepare for the implementation date(s) can therefore be taken only after having received the final version of the new assignment plans. While it is true that such action can be taken already much earlier by some States (e.g. where there is a straightforward one-for-one frequency replacement in a MWARA with only one family of frequencies and/or where few stations only are involved), in many other cases States will not and cannot, take action until the approved new plans are available.

With respect to the period required after new frequency assignment plans are available but before the actual implementation can begin, there appear to be two aspects :

- a) the problem concerning transfer of frequencies at ground stations, and,
- b) the problem associated with the change of frequencies in airborne equipment.

Concerning a) above, while this is obviously a matter for Administrations to determine, the I.C.A.O. Representatives are of the opinion, based on experience and discussions with a number of delegations at this Conference, that a minimum period of one year appears to be required.

With respect to the question of frequency changes in airborne equipment, the I.C.A.O. Representatives have no authority to voice an opinion, however, they believe that the problems involved are considerable.

The work outlined in the preceding paragraphs obviously would require close co-ordination between the I.T.U. (and, in particular, the I.F.R.B.) and I.C.A.O., and it is considered that this would be effected through the methods developed for that purpose over the years.

It should be noted that no comments have been made with respect to the actual implementation of the new frequency plans. A number of possible ways to effect this could be envisaged, however, it is not considered fruitful to comment on them at this time.

Geneva 1966COMMITTEE 6NOTES BY THE OBSERVER OF I.A.T.A.
ON IMPLEMENTATION OF THE NEW ALLOTMENT PLANIntroduction

In the following paragraphs an attempt has been made to clarify some of the aspects involved in a change-over from the present frequencies to those of the new Allotment Plan from the viewpoint of the aircraft equipment implications.

No specific suggestions have been made as to the methods of implementation of the new Allotment Plan. It is assumed that this question will be determined by the forthcoming I.C.A.O. COM/OPS Meeting when all pertinent data are available.

Aircraft equipment

For the purpose of this discussion aircraft equipment for HF radiotelephony may be divided into two main categories:

- a) equipment carried by aircraft used in international operations along a number of major world air routes and requiring a relatively large number of discrete frequencies;
- b) equipment carried by aircraft solely operating regionally and sub-regionally and requiring only a limited number of discrete frequencies for these operations.

Typical equipment of the first category has a basic capability of 144 discrete frequency channels. At present many airlines engaged in intercontinental operations require 100 or more crystals to cover their route requirements. Even if not all HF equipped aircraft of such airlines might operate along all the routes the crystal complement for all equipments of the same type usually is standardized for reasons of economy; different frequency complements for different types of aircraft would require a greater number of spare equipments the cost of which would be significantly higher than carrying a standard frequency complement. In addition, many of such aircraft apart from operating scheduled services are also employed upon non-scheduled or charter operations which might take the aircraft to any international airport in the world.



The draft MWARA and VOLMET plans as published to date will require a total of approximately 80 new frequencies for worldwide MWARA operation, including VOLMET reception. The insertion of the relevant new crystals in the equipments of a fleet of aircraft will require several to many months to effect, depending upon a number of factors which will differ from airline to airline. Among these factors are the number of spare equipments which can be made available to the workshops to carry out the modifications, the number and location of spare equipments along the routes. This means that the aircraft must be equipped with the old and the new frequencies for a given period, while all equipments are being modified before ground implementation begins. Unfortunately, in many cases, the total number of frequencies required for the present I.C.A.O. regional plans and the new assignment plan will be in excess of the capabilities of the equipment in question. Therefore, the transition may require to be carried out in two or more stages, e.g. a limited number of frequency bands at a time: before the crystals for the second stage can be inserted the implementation of the first stage must be completed so that the old crystals can be removed in order to obtain space for further new crystals.

Typical equipment under b) above has a capacity of 20 frequency channels, paired in a maximum frequency separation between two channels. For larger frequency changes such equipment is often less flexible than the above-mentioned equipment, requiring more workshop time to effect the changes.

Manpower

Estimates made by some airlines indicate that the cost of the manpower which will be involved in effecting the airlines' implementation of the new Allotment Plan may be significantly higher than the actual cost of the new crystals, the latter viewed against the background of airlines' expenditure on electronic equipment being already a significant amount.

Unfortunately, both on the operational planning side and on the engineering and workshop side, the manpower involved is extremely scarce for many airlines. Never in the post-war period have the airlines been involved, both in planning and execution, in so many projects ultimately requiring new aircraft radio equipment or modifications to existing equipment as at this period of time. Most of such projects are the subject of I.C.A.O. agreements between States, directly affect the efficiency and safety of the air operations, and also their target dates must be met. In this respect it should not be overlooked that some of these projects are directed towards reduction in the requirements for communication on HF frequencies.

Operational aspects of the transition

Apart from technical work the transition will also require a great deal of operational support work. Each aircraft must have the right frequency list, pertinent to the equipment carried, at the right time.

The route manuals as used by the pilots must contain the up-to-date information as to the frequencies actually used by each ground station along the routes to be flown. Although advance preparation can be done on the basis of a schedule to be developed through I.C.A.O., ultimately, such data must be derived from individual NOTAMs as disseminated by States for each change or group of changes indicating the time at which the change will be effected.

Conclusion

It is I.A.T.A.'s belief that on the basis of aircraft equipment capabilities and manpower available to effect the changes - taking into account reasonable economic considerations - the transition requires at least two years to be completed. A more precise estimate can only be made after careful consideration has been given to a great deal of detailed information which, in view of the fact that the changes in the Allotment Plan were more drastic than originally foreseen, is not immediately available at this time.