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COMMITTEE ON THE PEACEFUL USES  
OF OUTER SPACE  
Scientific and Technical  
Sub-Committee  
Seventh session

INFORMATION ON THE TECHNICAL ASPECTS OF THE REGISTRATION  
OF OBJECTS LAUNCHED INTO OUTER SPACE



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INTRODUCTION

At its Twelfth Session, the Outer Space Committee decided to adopt a resolution, according to which the Committee "would invite the Scientific and Technical Sub-Committee to study as soon as possible the technical aspects of the registration of objects launched into space, for the exploration and use of outer space, obtaining if considered appropriate, suitable information from the United Nations Specialized Agencies, such as ITU, IMCO and ICAO, on the registration of ships, aircraft, etc., as well as from COSPAR and other competent international organizations concerned with the registration of such launchings." (A/7621, pp. 4 - 5 ). This decision is based on a recommendation made by the Legal Sub-Committee at its Eighth Session.

The Secretariat has since contacted the Specialized Agencies concerned and other competent international organizations to obtain the relevant information on this question. To assist the Scientific and Technical Sub-Committee in its work, the Secretariat has prepared the present paper, which includes all the information received up to date, and it includes also the history of the question of registration including the information already furnished by the launching States and disseminated by the United Nations.



P A R T I

History of the question of registration and the information furnished by the launching States and disseminated by the United Nations.

The question of the registration of objects launched into orbit around the earth was first mentioned in the report of the Ad Hoc Committee on the Peaceful Uses of Outer Space in 1959 (A/4141). The Ad Hoc Committee after considering the necessity, method and use of registration, suggested that a regular census of satellites which are circling the earth must be maintained.

The guiding principles concerning registration of space objects were laid down in the General Assembly's resolution 1721 (XVI), in which the General Assembly:

"1. Called upon States launching objects into orbit or beyond to furnish information promptly to the Committee on the Peaceful Uses of Outer Space, through the Secretary-General, for the registration of launchings;

"2. Requested the Secretary-General to maintain a public registry of the information furnished in accordance with paragraph 1 above ...."

In accordance with this resolution, starting 1962, the States launching objects into outer space or beyond, have been submitting to the Secretary-General information on such launchings. This information embodies a census of the names of satellites or space objects or any other designations as well as orbital parameters. For this purpose, an official registry was established in the Outer Space Affairs Division of the UN Secretariat. The Outer Space Affairs Division, upon receiving these communications, distributes copies of them on a general basis under the symbol A/AC.105/INF... retaining the originals in the files. To this date, the USSR, USA, Italy, France, Australia and Japan have submitted notifications of launchings. The last document on the series under symbol is A/AC.105/INF.215 dated 16 February 1970.

It must be noted that the information furnished so far by the launching States is different regarding the form of submission and technical data included: Thus

(a) The United States uses designations which are identical to those of COSPAR. The registry contains information on decaying satellites as well.



(b) The USSR uses codes (or popular) names for payloads (for example: Cosmos 188, Molniya 1, Zond 6 and so on);

(c) France uses the international designations of objects (similar to that of COSPAR) as well as code names (for example: FR-1, Diademe 1 and so on);

(d) Italy uses the code name (San Marco);

(e) Australia uses the code name (WRESAT);

(f) Japan uses the code name (OSUMI).

The following organizations, apart from the United Nations, maintain a registry of objects launched into space or beyond:

1. World Data Centers

As part of the fundamental international planning for the IGY programme, World Data Centers (WDC-A in the USA, WDC-B in the USSR and WDC-C in Western Europe, Australia and Japan) were established by the International IGY Committee to collect data from numerous observational programmes and to make such data accessible to interested scientists and organizations. In particular, the WDC-A is compiling the reports from information in the national launching announcements and the reports of satellite and space probe launchings submitted to COSPAR and to the World Data Centers in accordance with the revised "COSPAR Guide to Rocket and Satellite Information and Data Exchange" adopted at the tenth meeting of COSPAR, July 1967, London. The information provided by WDC-A includes designation (for example: 1968-17A) and other characteristics.

2. NASA's Goddard Space Flight Center

Center's periodical reports reflect data computed and compiled by the GSFS, NORAD, and Smithsonian Astrophysical Observatory.

Regarding the designation of objects, the Center, in 1958-1962 used the Greek alphabetical order (for example: Alpha, Beta and so on), and then in 1963 adopted the system used by COSPAR (example: 1964 01, 1964 02 and so on). Its registry includes all launchings accomplished by different countries in chronological order.

3. Royal Aircraft Establishment, Farnborough, Hants, England

Concerning the designation of objects, it follows the same procedure as the WDC. Information includes launching accomplished by all launching countries.

Discussion in the Legal Sub-Committee leading to its request for study by the Scientific and Technical Sub-Committee of the technical aspects of the registration of space objects.

At the seventh session of the Legal Sub-Committee (4-28 June 1968) the representative of France submitted a "draft convention concerning the registration of objects launched into space for the exploration or use of outer space" (A/AC.105/C.2/L.45).

Introducing the draft, he said that the need for an international agreement on the registration of space objects had often been felt in the past and was implicit in the provisions of article VIII of the 1967 Treaty. Implementation of the instruments relating to space, which set forth the rights and obligations of the signatory States, involved problems which must be solved uniformly after agreement had been reached on certain practical rules concerning the registration of space objects. The United Nations had already established a procedure for announcing launchings of space objects, but that procedure was not mandatory and it did not seem suitable for the future development of space activities and the consequent proliferation of launchings. The establishment of a mandatory registration system should not therefore be ruled out for that alone would make it possible to determine with certainty the origin and nature of the objects launched and thereby provide a safeguard for the whole international community. The French draft convention was designed to meet all these concerns.<sup>1/</sup>

The discussion of the question of registration was continued at the eighth session of the Legal Sub-Committee (9 June-4 July 1969).

The representative of Italy stated that traffic in outer space was assuming proportions which called for the adoption of regulations without delay, as in the case of air traffic, to which ICAO devoted all its attention.

<sup>1/</sup> A/AC.105/C.2/SR.102, p. 3.



It was not only the problem of the actual movement of space vehicles in traffic which required early study and solution, but also that of their registration and the French preliminary draft on the matter would have to be carefully studied by the Sub-Committee.<sup>1/</sup> The Italian representative shared the view that the existing system of optional registration with the United Nations should be changed and registration should become a legal obligation. His delegation had no settled opinion on the subject of identification marks, but felt that the system adopted should be as simple as possible. The space object or its component parts must of course be marked in some way, so that victims would know where to send their claims for compensation. He also said that it might be possible to have national registers in addition to an international one.<sup>2/</sup>

The representative of Czechoslovakia said that the French delegation which had submitted the draft, obviously started from the assumption that the number of States participating in research on outer space was increasing, as was the number of objects launched into outer space. Statistics showed that there were several hundreds of those objects and that their number was growing. It seemed reasonable to say, therefore, that more precise arrangements should be made. The fundamental idea underlying the draft deserved the Sub-Committee's attention, but he felt that a number of practical problems relating to the implementation of the draft convention must first be clarified. An assessment should be made of the utility of the present system of reporting to the Secretary-General of the United Nations, in accordance with General Assembly resolution 1721 (XVI).<sup>3/</sup>

The representative of the USSR stated that the French delegation's proposal for the registration of objects launched into space should be considered very carefully but the USSR delegation was of the view that present practical requirements were satisfied by the existing registration system.<sup>4/</sup>

<sup>1/</sup> A/AC.105/C.2/SR.112, p. 7.

<sup>2/</sup> A/AC.105/C.2/SR.112, p. 13.

<sup>3/</sup> A/AC.105/C.2/SR.112, pp. 11-12.

<sup>4/</sup> A/AC.105/C.2/SR.112, p. 5.

The representative of the United States said that while the United Nations public registry was to record the objects launched but not to indicate their nationality, the purpose of the French proposal was to place on record the nationality of objects launched into outer space, using the term "registry" as it was used in article VIII of the Outer Space Treaty. The French proposal was apparently intended to provide a method of identifying the owner of a particular object after its return to earth, especially in cases where damage was caused by the object. The United States representative further noted that the United Nations registry did not in itself serve as a means of establishing the ownership of space objects, but there were reasonably precise identification techniques. His country had a space-tracking network which made it possible to detect and track spacecraft within a short time of a launch anywhere in the world. It would undoubtedly be useful, from the standpoint of potential claimant States, if there were an objective means of determining the ownership of space objects which was not dependent upon the technology of potential respondent States. The French proposal attempted to establish such a system by linking numerical designations marked on space objects to entries in open national registers. The idea itself was a valid one, but his country had serious doubts as to the technical feasibility of the proposal as it stood. Having analysed the specific provisions of the draft which, in his opinion, raised technical problems, the United States representative observed that his delegation was unable to propose any other technique which could achieve the objective of a registration system in a practical way. In view of the importance of the objective, however, his delegation proposed that the technical aspects should be referred to the Scientific and Technical Sub-Committee.<sup>1/</sup>

The representative of Belgium believed that once the convention on liability had been drafted, it would be useful to begin considering the question of the registration of objects launched into space - a practical and increasingly necessary task, in view of the development of space operations - but that was a subject which, on account of its complexity, should first be referred to the Scientific and Technical Sub-Committee.<sup>2/</sup>

<sup>1/</sup> A/AC.105/C.2/SR.112, pp. 8-11.

<sup>2/</sup> A/AC.105/C.2/SR.112, p. 13.



The representative of Canada was in favour of an international system for the registration of space objects, particularly as such a system would be of immense benefit in determining the State or international organization liable in the event of damage caused by space objects. Owing, however, to the technical nature of the methods of marking, recording and registering ownership of a space vehicle, it would be necessary, he thought, to obtain expert advice on the details of the draft convention. He therefore welcomed the suggestion that the Technical and Scientific Sub-Committee should be consulted. He proposed that the Sub-Committee should endeavour to study more closely the registration procedures for aircraft and ships and that for that purpose it should turn to the specialized agencies such as IMCO for information on how the national registration was co-ordinated internationally. His delegation could accept the French proposal that registers should be kept at the national level, provided some suitably adequate method of exchanging the information contained in those registers could be worked out, based on an effective system of international co-operation and co-ordination, particularly among States which engaged in space activities. The Canadian representative also asked for a clarification of the specific provisions of the French draft. He wanted to know how the disputes arising from the convention would be resolved if, for example, a national decision to register an object as a space object was disputed internationally. He also asked whether the convention was intended to apply to all objects launched into outer space including military ones, and regardless of their lifespan.<sup>1/</sup>

The representative of the United Kingdom welcomed the draft convention but felt that there were some points which his delegation would like to see clarified, particularly the relationship between the proposed system of registration and the arrangements at present in force pursuant to General Assembly resolution 1721 (XVI), and the technical feasibility of the system of marking envisaged in article 3 of the draft convention. He said that it might be useful to seek the views of the Scientific and Technical Sub-Committee on that latter point, and to submit the draft convention as a whole to the specialized agencies for their consideration.<sup>2/</sup>

<sup>1/</sup> A/AC.105/C.2/SR.113, pp. 2-3.

<sup>2/</sup> A/AC.105/C.2/SR.113, pp. 8-9.

The representative of India found the French proposal extremely interesting and said he would study it with all due attention.<sup>1/</sup>

The representative of Hungary considered that the system of registration which had been put in operation in accordance with General Assembly resolution 1721 B (XVI) had justified itself in practice, because the space Powers, which, for the time being, were precisely those which were sending objects into space, regularly submitted the required information on those objects. In his opinion, the main requirement was to improve the existing system, perhaps along the lines suggested in some of the French proposals. That would ensure the continuity of the system founded by the United Nations and preserve its scientific and historic value.<sup>2/</sup>

The representative of Bulgaria stated with regard to the registration of space objects that additional studies would be needed, so that a system still better than that now in force could be instituted.<sup>3/</sup>

The representative of Japan observed that his delegation had frequently advocated a system of international registration. He considered, however, that the Committee should study the entire problem of international registration at its future sessions. The draft convention presented by France, provided for national registration as opposed to the system of international registration which his own delegation had in mind. Although the draft convention specified that the contracting parties would have to register space objects, keep a register for recording the basic information registered and make available any information sought concerning details of registration, it did not state what useful purpose registration might serve. He supposed that it would serve at least to help identify the launching authority - a factor essential to the rescue of astronauts and the recovery of space objects, and to claiming due compensation for damage caused. He was of the view that the State in control of space object registration service should transmit to the government depository of the convention, or to

<sup>1/</sup> A/AC.105/C.2/SR.113, p. 13.

<sup>2/</sup> A/AC.105/C.2/SR.114, p. 4.

<sup>3/</sup> A/AC.105/C.2/SR.114, p. 9.



the Secretary-General of the United Nations, the details of registration (article 2 of the French proposal). The depository government or the Secretary-General of the United Nations would then communicate that information to any contracting party which requested it.<sup>1/</sup>

The representative of Austria said his delegation was in favour of a registration system for objects sent into outer space. The Scientific and Technical Sub-Committee should give its views on the technical problems and on the ideas contained in the French proposal.<sup>2/</sup>

The representative of the United Arab Republic felt that a convention on registration would materially contribute to ensuring that space activities were not kept secret. It was also of considerable importance from the point of view of liability for damage. The draft convention should be included as an important item in the agenda of the Sub-Committee's next session. In the meantime, the Scientific and Technical Sub-Committee might well be asked to give its opinion on the technical aspects of the draft. He supported the Canadian representative's suggestion that the Secretariat should submit to the Sub-Committee a document summarizing the international rules and practices concerning the national registration of aircraft and ships, for the existing registration systems would provide useful guidance.<sup>3/</sup>

The representative of Argentina said that he recognized the need for a convention on the registration of objects launched into space for the exploration or use of outer space. The registration procedure laid down in General Assembly resolution 1721 (XVI) was no longer adequate. Four years previously fragments of space vehicles had fallen on two places in Argentina. Fortunately, they had fallen in unpopulated areas and had therefore caused no damage. There had been no identification marks on the fragments which meant that if they had caused damage Argentina would have had difficulty in claiming compensation. He proposed, therefore, that the question of the registration of objects launched into space for the exploration and use of outer space should be placed on the agenda for the Sub-Committee's next session.<sup>4/</sup>

<sup>1/</sup> A/AC.105/C.2/SR.113, p. 13.

<sup>2/</sup> A/AC.105/C.2/SR.114, p. 11.

<sup>3/</sup> A/AC.105/C.2/SR.114, pp. 7-8.

<sup>4/</sup> A/AC.105/C.2/SR.115, p. 4.

In reply to the inquiries of a number of delegations the representative of France explained certain provisions of his delegation's draft.<sup>1/</sup>

A statement concerning registration with the United Nations of objects launched into outer space was made by the Chief of the Outer Space Affairs Division.<sup>2/</sup>

On the proposal of Canada<sup>3/</sup> the Legal Sub-Committee adopted the following resolution:

"The Legal Sub-Committee,

'Recommends to the Committee on the Peaceful Uses of Outer Space that the Scientific and Technical Sub-Committee be invited to study as soon as possible the technical aspects of the registration of objects launched into space, for the exploration and use of outer space, obtaining if considered appropriate suitable information from the United Nations specialized agencies, such as ITU, IMCO and ICAO, on the registration of ships, aircraft, etc., as well as from COSPAR and other competent international organizations concerned with the registration of such launchings."<sup>4/</sup>

<sup>1/</sup> A/AC.105/C.2/SR.115, pp. 2-4.

<sup>2/</sup> A/AC.105/C.2/6, reproduced in annex IV to A/AC.105/C.2/58.

<sup>3/</sup> A/AC.105/C.2/L.55/Rev.1.

<sup>4/</sup> A/AC.105/58, p. 4. (This request was endorsed by the Outer Space Committee as referred to in the Introduction to the present paper.)



P A R T I I

Information received from ICAO on the registration of aircraft

- (a) The policy of ICAO with respect to aircraft registration and nationality - Articles 17 - 21 of the Convention on International Civil Aviation:  
Extracts from the Convention on International Civil Aviation:

Article 17

Nationality of aircraft

Aircraft have the nationality of the State in which they are registered.

Article 18

Dual registration

An aircraft cannot be validly registered in more than one State, but its registration may be changed from one State to another.

Article 19

National laws governing registration

The registration or transfer of registration of aircraft in any contracting State shall be made in accordance with its laws and regulations.

Article 20

Display of marks

Every aircraft engaged in international air navigation shall bear its appropriate nationality and registration marks.

Article 21

Report of registrations

Each contracting State undertakes to supply to any other contracting State or to the International Civil Aviation Organization, on demand, information concerning the registration and ownership of any particular aircraft registered in that State. In addition, each contracting State shall furnish reports to the International Civil Aviation Organization, under such regulations as the latter may prescribe, giving such pertinent data as can be made available concerning the ownership and control of aircraft registered in that State and habitually engaged in international air navigation. The data thus obtained by the International Civil Aviation Organization shall be made available by it on request to the other contracting States.

- (b) The methods of aircraft registration. Extracts from Annex 7 of the Convention on International Civil Aviation:

Historical background

Standards for Aircraft Nationality and Registration Marks were adopted by the Council on 8 February 1949 pursuant to the provisions of Article 37 of the Convention on International Civil Aviation (Chicago 1944) and designated as Annex 7 to the Convention. They became effective on 1 July 1949. The Standards were based on recommendations of the first and second sessions of the Airworthiness Division held respectively in March 1946 and February 1947.

Amendment 1, based on recommendations made, at its fifth meeting, by the Airworthiness Committee, an international body of experts authorized by the Council and functioning under the Air Navigation Commission, was adopted by the Council on 12 November 1963 and became effective on 1 April 1964. Prior to the adoption of Amendment 1, those recommendations had been submitted to all Contracting States and had been reviewed by the Air Navigation Commission. As a result of the adoption of Amendment 1, a second edition was published.

The Council, on 8 November 1967, adopted Amendment 2, which consisted solely of redefining "Aircraft". The Amendment, which became effective on 8 March 1968, implemented a decision that all air cushion type vehicles, such as hovercraft and ground effect machines, should not be classified as aircraft.

The Council on 23 January 1969 adopted Amendment 3. This Amendment, which became effective on 23 May 1969, consisted of introducing definitions of the expressions "Common mark", "Common mark registering authority" and "International operating agency" and introducing appropriate provisions to enable aircraft of international operating agencies of the kind contemplated in Article 77 of the Convention to be registered on other than a national basis. The determining principle of the provisions now added is that each international operating agency will be assigned a distinctive common mark by ICAO, this being selected from the series of symbols included in the radio call signs allocated to ICAO by the International Telecommunication Union. As a result of the adoption of Amendment 3, a third edition was published.

Applicability

The present edition of Annex 7 contains Standards, adopted by the International Civil Aviation Organization as the minimum Standards for the display of marks to indicate appropriate nationality and registration which have been determined to comply with Article 20 of the Convention. The Annex thus amended is applicable for all aircraft on 18 September 1969.

Action by Contracting States

Notification of differences. The attention of Contracting States is drawn to the obligation imposed by Article 38 of the Convention, referred to in the Council's Resolution of Adoption of this Annex, by which Contracting States are required to notify the Organization before 18 August 1969 of any difference that will exist on 18 September 1969 between their national regulations and practices and the International Standards contained in this Annex as now amended, and to keep the Organization currently informed of any differences which may subsequently occur, or of the withdrawal of any difference previously notified.



Use of the text of the Annex in national regulations. The Council, on 13 April 1948, adopted a resolution inviting the attention of Contracting States to the desirability of using in their own national regulations, as far as practicable, the precise language of those ICAO Standards that are of a regulatory character and also of indicating departures from the Standards, including any additional national regulations that were important for the safety or regularity of air navigation. Wherever possible, the provisions of this Annex have been deliberately written in such a way as would facilitate incorporation, without major textual changes, into national legislation.

#### General Information

An Annex is made up of the following component parts, not all of which, however, are necessarily found in every Annex; they have the status indicated:

#### 1. Material comprising the Annex proper

a) Standards and Recommended Practices adopted by the Council under the provisions of the Convention. They are defined as follows:

Standard: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air navigation and to which Contracting States will conform in accordance with the Convention; in the event of impossibility of compliance, notification to the Council is compulsory under Article 38.

Recommended Practice: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as desirable in the interest of safety, regularity or efficiency of international air navigation, and to which Contracting States will endeavour to conform in accordance with the Convention.

b) Appendices comprising material grouped separately for convenience but forming part of the Standards and Recommended Practices adopted by the Council.

c) Definitions of terms used in the Standards and Recommended Practices which are not self-explanatory in that they do not have accepted dictionary meanings. A definition does not have independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification.

#### 2. Material approved by the Council for publication in association with the Standards and Recommended Practices.

a) Forewords comprising historical and explanatory material based on the action of the Council and including an explanation of the obligations of States with regard to the application of the Standards and Recommended Practices ensuing from the Convention and the Resolution of Adoption.

b) Introductions comprising explanatory material introduced at the beginning of parts, chapters or sections of the Annex, to assist in the understanding of the application of the text.

c) Notes included in the text, where appropriate, to give factual information or references bearing on the Standards or Recommended Practices in question, but not constituting part of the Standards or Recommended Practices.

d) Attachments comprising material supplementary to the Standards and Recommended Practices, or included as a guide to their application.

The International Standards - Aircraft Nationality and Registration Marks, being an Annex to the Convention, exists and is officially circulated in three languages - English, French and Spanish. Pursuant to Council action on 13 April 1948, each Contracting State is requested to select one of those texts for the purpose of national implementation and for other purposes provided for in the Convention, either through direct use or through translation into its own national language and to notify the Organization accordingly.

The following practice has been adhered to in order to indicate at a glance the status of each statement: Standards have been printed in light face roman; Notes have been printed in light face italics, the status being indicated by the Prefix Note. There are no Recommended Practices in Annex 7.

Throughout this document, measurements are given in the ICAO Table of Units System followed when necessary by corresponding measurements in the foot-pound system.

Any reference to a portion of this document which is identified by a number includes all subdivisions of such portion.



INTERNATIONAL STANDARDS

1. Definitions

When the following terms are used in the Standards for Aircraft Nationality and Registration Marks, they have the following meanings:

Aeroplane. A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

Aircraft. Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

Airship. A power-driven lighter-than-air aircraft.

Balloon. A non-power-driven lighter-than-air aircraft.

Common mark. A mark assigned by the International Civil Aviation Organization to the common mark registering authority registering aircraft of an international operating agency on other than a national basis.

Note. - All aircraft of an international operating agency which are registered on other than a national basis will bear the same common mark.

Common mark registering authority. The authority maintaining the non-national register or, where appropriate, the part thereof, in which aircraft of an international operating agency are registered.

Fireproof material. A material capable of withstanding heat as well as or better than steel when the dimensions in both cases are appropriate for the specific purpose.

Glider. A non-power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

Gyroplane. A heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors which rotate freely on substantially vertical axes.

Heavier-than-air aircraft. Any aircraft deriving its lift in flight chiefly from aerodynamic forces.

Helicopter. A heavier-than-air aircraft supported in flight by the reactions of the air on one or more power-driven rotors on substantially vertical axes.

International operating agency. An agency of the kind contemplated in Article 77 of the Convention.

Lighter-than-air aircraft. Any aircraft supported chiefly by its buoyancy in the air.

Ornithopter. A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on planes to which a flapping motion is imparted

Rotocraft. A power-driven heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors.

State of Registry. The State on whose register the aircraft is entered.

2. Nationality, Common and Registration Marks to be Used

2.1 The nationality or common mark and registration mark appearing on the aircraft shall consist of a group of characters.

2.2 The nationality or common mark shall precede the registration mark. When the first character of the registration mark is a letter it shall be preceded by a hyphen.

2.3 The nationality mark shall be selected from the series of nationality symbols included in the radio call signs allocated to the State of Registry by the International Telecommunication Union. The nationality mark shall be notified to the International Civil Aviation Organization.

2.4 The common mark shall be selected from the series of symbols included in the radio call signs allocated to the International Civil Aviation Organization by the International Telecommunication Union.

Note. - Assignment of the common mark to a common mark registering authority will be made by the International Civil Aviation Organization.

2.5 The registration mark shall be letters, numbers, or a combination of letters and numbers, and shall be that assigned by the State of Registry or common mark registering authority.

2.6 When letters are used for the registration mark, combinations shall not be used which might be confused with the five-letter combinations used in the International Code of Signals, Part II, the three-letter combinations beginning with Q used in the Q Code, and with the distress signals, for example XXX, PAN and TTT.

Note. - For reference to these codes see the currently effective International Telecommunications Regulations.



### 3. Location of Nationality, Common and Registration Marks.

3.1 General. The nationality or common mark and registration mark shall be painted on the aircraft or shall be affixed by any other means ensuring a similar degree of permanence. The marks shall be kept clean and visible at all times.

#### 3.2 Lighter-than-air-Aircraft.

3.2.1 Airships. The marks on an airship shall appear either on the hull, or on the stabilizer surfaces. Where the marks appear on the hull, they shall be located lengthwise on each side of the hull and also on its upper surface on the line of symmetry. Where the marks appear on the stabilizer surfaces, they shall appear on the horizontal and on the vertical stabilizers; the marks on the horizontal stabilizer shall be located on the right half of the upper surface and on the left half of the lower surface, with the tops of the letters and numbers toward the leading edge; the marks on the vertical stabilizer shall be located on each side of the bottom half stabilizer, with the letters and numbers placed horizontally.

3.2.2 Spherical balloons. The marks on a spherical balloon shall appear in two places diametrically opposite. They shall be located near the maximum horizontal circumference of the balloon.

3.2.3 Non-spherical balloons. The marks on a non-spherical balloon shall appear on each side. They shall be located near the maximum cross-section of the balloon immediately above either the rigging band or the points of attachment of the basket suspension cables.

3.2.4 All lighter-than-air aircraft. The side marks on all lighter-than-air aircraft shall be visible both from the sides and from the ground.

#### 3.3 Heavier-than-air Aircraft.

3.3.1 Wings. On heavier-than-air aircraft the marks shall appear once on the lower surface of the wing structure. They shall be located on the left half of the lower surface of the wing structure unless they extend across the whole of the lower surface of the wing structure. So far as is possible the marks shall be located equidistant from the leading and trailing edges of the wings. The tops of the letters and numbers shall be toward the leading edge of the wing.

3.3.2 Fuselage (or equivalent structure) and vertical tail surfaces. On heavier-than-air aircraft the marks shall appear either on each side of the fuselage (or equivalent structure) between the wings and the tail surface, or on the upper halves of the vertical tail surfaces. When located on a single vertical tail surface they shall appear on both sides. When located on multivertical tail surfaces they shall appear on the outboard sides of the outer surfaces.

3.3.3 Special cases. If a heavier-than-air aircraft does not possess parts corresponding to those mentioned in 3.3.1 and 3.3.2, the marks shall appear in a manner such that the aircraft can be identified readily.

### 4. Measurements of Nationality, Common and Registration Marks.

The letters and numbers in each separate group of marks shall be of equal height.

4.1 Lighter-than-air Aircraft. The height of the marks on lighter-than-air aircraft shall be at least 50 centimetres (20 inches).

#### 4.2. Heavier-than-air Aircraft.

4.2.1 Wings. The height of the marks on the wings of heavier-than-air aircraft shall be at least 50 centimetres (20 inches).

4.2.2 Fuselage (or equivalent structure) and vertical tail surfaces. The height of the marks on the fuselage (or equivalent structure) and on the vertical tail surfaces of heavier-than-air aircraft shall be at least 30 centimetres (12 inches).

4.2.3 Special cases. If a heavier-than-air aircraft does not possess parts corresponding to those mentioned in 4.2.1 and 4.2.2, the measurements of the marks shall be such that the aircraft can be identified readily.

### 5. Type of Characters for Nationality, Common and Registration Marks.

5.1 The letters shall be capital letters in Roman characters without ornamentation. Numbers shall be Arabic numbers without ornamentation.

5.2 The width of each character (except the letter I and the number 1), and the length of hyphens shall be two-thirds of the height of a character.



5.3 The characters and hyphens shall be formed by solid lines and shall be of a colour contrasting clearly with the background. The thickness of the lines shall be one-sixth of the height of a character.

5.4 Each character shall be separated from that which it immediately precedes or follows, by a space of not less than one-quarter of a character width. A hyphen shall be regarded as a character for this purpose.

6. Register of Nationality, Common and Registration Marks

Each Contracting State or common mark registering authority shall maintain a current register showing for each aircraft registered by that State or common mark registering authority, the information recorded in the certificate of registration (see Section 7).

7. Certificate of Registration

7.1 The certificate of registration, in wording and arrangement, shall be a replica of the following form (see page 18).

Note. - The size of the form is at the discretion of the State of Registry or common mark registering authority.

7.2 The certificate of registration shall be carried in the aircraft at all times.

8. Identification Plate

An aircraft shall carry an identification plate inscribed with at least its nationality or common mark and registration mark. The plate shall be made of fireproof metal or other fireproof material of suitable physical properties, and shall be secured to the aircraft in a prominent position near the main entrance.

(c) Nationality and Registration of aircraft operated by International Operating Agencies. (ICAO document 8722-C/976):

Resolution adopted by the Council on Nationality and Registration of Aircraft operated by International Operating Agencies:

The Council

Considering the provisions of Article 77 of the Convention on International Civil Aviation, the last sentence of which reads: "The Council shall determine in what manner the provisions of this Convention relating to nationality of aircraft shall apply to aircraft operated by international operating agencies."

*	State or Common Mark Registering Authority Ministry Department or Service	*
CERTIFICATE OF REGISTRATION		
1. Nationality or Common Mark and Registration Mark ..... .....	2. Manufacturer and Manufacturer's Designation of Aircraft ..... .....	3. Aircraft Serial No. ..... .....
4. Name of owner .....		
5. Address of owner .....		
6. It is hereby certified that the above described aircraft has been duly entered on the ..... in accordance with the (name of register) Convention on International Civil Aviation dated 7 December 1944 and with the (+) .....		
(Signature) .....		
Date of issue .....		
(+ ) Insert reference to applicable regulations.		
*		

\*For use by the State of Registry or common mark registering authority.



Considering the Report on this subject of the Legal Committee,  
Doc 8704-LC/155, 22/9/67, Annex C

Considering the conclusions of the Legal Committee as expressed  
in the said Report

Agreeing that, without any amendment to the Convention on International  
Civil Aviation, the provisions of the Convention can be made  
applicable, by a determination of the Council under said Article  
77, to aircraft which are not registered on a national basis,  
such as aircraft "jointly registered" or "internationally  
registered" (which concepts are defined in Appendix 1 hereto)  
subject, however, to fulfilment of certain basic criteria,  
which have been established by the Council

Holding that a determination by the Council pursuant to, and within  
the scope of, said Article 77 of the Convention, and made in  
accordance with the procedures indicated below, will be binding  
on all Contracting States and that, accordingly, in the case of  
aircraft which are jointly registered or internationally registered  
and in respect of which the basic criteria which have been  
established by the Council are fulfilled, the rights and obligations  
under the said Convention would be applicable as in the case of  
nationally registered aircraft of a Contracting State

Resolves that the process of determination contemplated in said  
Article 77 shall include the application of the basic criteria  
which have been established by the Council to each particular  
plan for joint or international registration which might be  
brought before it, with appropriate and definite information  
relating to and describing such plan, by States constituting  
the international operating agency concerned

Decides, with regard to the establishment of the basic criteria referred  
to in the three preceding paragraphs, as follows:

- a) In cases of joint registration, to adopt the basic  
criteria specified in Part I of Appendix 2 hereto;
- b) In cases of international registration, to be guided by  
Part II of Appendix 2 hereto.

Notes, in connection with the foregoing process of determination, that,  
while the Council has discretion to arrive at such determination  
as it deems appropriate, in the case of joint registration  
described in Appendix 3 hereto, there should be little problem  
in regard to the fulfilment of the basic criteria specified in  
Part I of Appendix 2 hereto and, therefore, a determination by  
the Council in such or similar cases should merely be formal and  
could automatically be given,

Notes also that other cases of joint registration and all cases of  
international registration may well require different  
approaches,

Decides that, upon completion of the process of determination as  
specified above for a particular plan which in the opinion  
of the Council would satisfy the basic criteria specified  
in Appendix 2 hereto, the manner of application of the  
provisions of the Convention relating to nationality of  
aircraft be as follows:

- (1) In the case of joint or international registration, all  
the aircraft of a given international operating agency  
shall have a common mark, and not the nationality mark  
of any particular State, and the provisions of the  
Convention which refer to nationality marks (Articles 12  
and 20 of the Convention) and Annex 7 to the Convention  
shall be applied mutatis mutandis.
- (2) Without prejudice to the rights of other Contracting  
States as provided for in C of Appendix 2 hereto and  
in Note 2 therein, each such aircraft shall, for the  
purposes of the Convention, be deemed to have the  
nationality of each of the States constituting the  
international operating agency.
- (3) For the application of Articles 25 and 26 of the Convention,  
the State which maintains the joint register or the relevant  
part of the joint register pertaining to a particular  
aircraft shall be considered to be the State in which the  
aircraft is registered, and

Declares that:

- (1) This Resolution applies only when all the States constituting  
the international operating agency are and remain parties  
to the Chicago Convention.
- (2) This Resolution does not apply to the case of an aircraft  
which, although operated by an international operating  
agency, is registered on a national basis.

Appendix 1

For the purpose of this Resolution

- the expression "joint registration" indicates that system of  
registration of aircraft according to which the States constituting  
an international operating agency would establish a register other  
than the national register for the joint registration of aircraft  
to be operated by the agency, and



- the expression "international registration" denotes the cases where the aircraft to be operated by an international operating agency would be registered not on a national basis but with an international organization having legal personality, whether or not such international organization is composed of the same States as have constituted the international operating agency.

Appendix 2 - Basic Criteria

Part I - In the case of joint registration -

- A. The States constituting the international operating agency shall be jointly and severally bound to assume the obligations which, under the Chicago Convention, attach to a State of registry.
- B. The States constituting the international operating agency shall identify for each aircraft an appropriate State from among themselves which shall be entrusted with the duty of receiving and replying to representations which might be made by other Contracting States of the Chicago Convention concerning that aircraft. This identification shall be only for practical purposes and without prejudice to the joint and several responsibility of the States participating in the agency, and the duties assumed by the State so identified shall be exercised on its own behalf and on behalf of all the other participating States. (See also Note 1 below)
- C. The operation of the aircraft concerned shall not give rise to any discrimination against aircraft registered in other Contracting States with respect to the provisions of the Chicago Convention (See also Note 2 below)
- D. The States constituting the international operating agency shall ensure that their laws, regulations and procedures as they relate to the aircraft and personnel of the international operating agency when engaged in international air navigation shall meet in a uniform manner the obligations under the Chicago Convention and the Annexes thereto.

Part II - In the case of international registration the Council, in arriving at its determination, shall be satisfied that any system of international registration devised by the States constituting the international operating agency gives the other member States of ICAO sufficient guarantees that the provisions of the Chicago Convention are complied with. In this connection, the criteria mentioned in A, C and D above shall, in any event, be applicable, it being understood that additional criteria may be adopted by the Council.

Note 1: In connection with B above, in the case of joint registration the functions of a State of registration under the Convention (in particular, the issue of certificates of registration and the issue and validation of certificates of airworthiness and of licences for the operating crew) shall be performed by the State which maintains the joint register or the relevant part of the joint register pertaining to a particular aircraft. In any case, the exercise of such functions shall be done on behalf of all the States jointly.

Note 2: In connection with C above, and with reference to the undermentioned Articles of the Chicago Convention, it is noted as follows:

Article 7 (Cabotage): The mere fact of joint or international registration under Article 77 would not operate to constitute the geographical area of the multinational group as a cabotage area.

Article 9 (Prohibited Areas) and Article 15 (Airport and Similar Charges): The mere fact of joint or international registration under Article 77 will not affect the application of these Articles.

Article 27 (Patent Claims): The requirement of this Article being that a given State should be not only a party to the Chicago Convention but also a party to the International Convention for the Protection of Industrial Property, it might be that, in a particular case, one or other of the States constituting an international operating agency was not a party to the latter Convention. In such case the interests of that State are not protected by the terms of Article 27.

Appendix 3

In connection with the present Resolution the Council had before it the following scheme of joint registration, noting, at the same time, that other schemes might also be possible:

- (a) The States constituting the international operating agency will establish a joint register for registration of aircraft to be operated by the agency. This will be separate and distinct from any national register which any of those States may maintain in the usual way.



he joint register may be undivided or consist of several parts. In the former case the register will be maintained by one of the States constituting the international operating agency and in the latter case each part will be maintained by one or other of these States.

- (c) An aircraft can be registered only once, namely, in the joint register or, in the case where there are different parts, in that part of the joint register which is maintained by a given State.
- (d) All aircraft registered in the joint register or in any part thereof shall have one common marking, in lieu of a national mark.
- (e) The functions of a State of registration under the Chicago Convention (for example, the issuance of the certificate of registration, certificate of airworthiness or licences of crew) shall be performed by the State which maintains the joint register or by the State which maintains the relevant part of that register. In any case, the exercise of such functions shall be done on behalf of all the States jointly.
- (f) Notwithstanding (e) above, the responsibilities of a State of registration with respect to the various provisions of the Chicago Convention shall be the joint and several responsibility of all the States which constitute the international operating agency. Any complaint by other Contracting States will be accepted by each or all of the States mentioned.

P A R T I I I

Information received from IMCO on the registration of ships.

1. There are no internationally agreed procedures for the registration of ships, which is a national responsibility. National legislation is adapted to the provisions of public and private law applicable in the country. However, certain common principles are being widely used particularly by maritime countries.
2. In the main two separate registers are kept:
  - (a) One for ships which are defined as such for the purposes of private or public law; this usually sets a tonnage limit, e.g. 10 tons gross tonnage and upwards;
  - (b) Another for vessels and other craft below that tonnage limit.
3. Pleasure craft, small boats or other auxiliary craft (tugs, barges, floating cranes etc.) which usually do not extend their operations beyond the precincts of the port or inland waters are, in many countries, registered separately from 2(a) and (b) and through simpler procedures.
4. Perhaps the most important group is the one referred to in 2(a). Apart from whatever other characteristics the national law may require to be entered into the register for such ships, the characteristics which are commonly given for the identification of a ship are name, port and number of registry and the international call sign; the latter is a combination of letters or letters and numbers given to each ship on registration, by the national authorities from groups allocated to each country by the International Telecommunication Union. The call sign is being used to identify the ship for the purposes of radio and visual communications.
5. The ports which in each country are authorized to keep ships' registers, as well as the type of register, are determined by national legislation. The registers are kept by the authorities designated by national law (usually the port authorities) and contain full description of each vessel as well as subsequent changes of such characteristics as name, ownership, tonnage etc.
6. The above should be seen only as general principles; considerable variations are to be found according to the character and size of the national fleet.



PART IV

Information received from the ITU: Texts of articles 18, 19 and 21 of the Radio Regulations annexed to the International Telecommunication Convention.

Article 18

Licences

725 #1. (1) No transmitting station may be established or operated by a private person or by any enterprise without a licence issued by the government of the country to which the station in question is subject. (However, see Nos. 726 and 732.)

726 (2) However, the government of a country may conclude with the government of a neighbouring country a special agreement concerning one or several stations of its broadcasting service or of its land mobile services, operating on frequencies above 41 Mc/s, situated in the territory of the neighbouring country and intended to improve national coverage. This agreement, which shall be compatible with the provisions of the present Regulations as well as of those regional agreements to which the countries concerned are signatories, may allow exceptions to the provisions of No. 725 and shall be communicated to the Secretary General in order that it may be brought to the notice of administrations for their information.

727 (3) Mobile stations which are registered in a territory or group of territories which does not have full responsibility for its international relations may be considered, in so far as the issue of licences is concerned, as subject to the authority of that territory or group of territories.

728 #2. The holder of a licence is required to preserve the secrecy of telecommunication, as provided in Article 35 of the Convention. Moreover, the licence shall provide, specifically or by reference, that if the station includes a receiver, the interception of radiocommunication correspondence, other than that which the station is authorized to receive, is forbidden, and that in the case where such correspondence is involuntarily received, it shall not be reproduced, nor communicated to third parties, nor used for any purpose, and even its existence shall not be disclosed.

729 #3. To facilitate the verification of licences issued to mobile stations, there shall be added, when necessary, to the text written in the national language, a translation of the text in a language widely used in international relations.

730 #4. (1) The government which issues a licence to a mobile station shall mention therein in clear form the particulars of the station, including its name, call sign and public correspondence category, as well as the general characteristics of the installation.

731 (2) For land mobile stations a clause shall be included in the licence, specifically or by reference, under which the operation of these stations shall be forbidden in countries other than the country which has issued the licence, except as may be provided by special agreement between the governments of the countries concerned.

732 #5. (1) In the case of a new registration of a ship or aircraft in circumstances where delay is likely to occur in the issue of a licence by the country in which it will be registered, the administration of the country from which the mobile station wishes to make its voyage or flight may, at the request of the operating company, issue a certificate to the effect that the station complies with these Regulations. This certificate, drawn up in a form determined by the issuing administration, shall give the particulars mentioned in No. 730 and shall be valid only for the voyage or flight to the country in which the registration of the ship or aircraft will be effected, or for a period of three months, whichever is the lesser.

733 (2) The administration issuing the certificate shall inform the administration responsible for issuing the licence of the action taken.

734 (3) The holder of the certificate shall comply with the provisions of these Regulations applicable to licence-holders.

ARTICLE 19

Identification of Stations

Section I. General Provisions

735 #1. (1) Transmissions without identification or with false identification are prohibited.<sup>1/</sup>

<sup>1/</sup> In the present state of the technique, it is recognized nevertheless that the transmission of identifying signals for certain radio systems (e.g. radio-determination, radio relay systems and space systems) is not always possible.



736 (2) However, the requirements of identification need not apply to:

- survival craft stations when transmitting distress signals automatically,
- emergency position-indicating radiobeacons.

737 #2. A station shall be identified either by a call sign or other recognized means of identification. Such recognized means of identification may be one or more of the following necessary for complete identification: name of station, location of station, operating agency, official registration mark, flight identification number, ship station selective call number or signal, coast station selective call identification number or signal, characteristic signal, characteristic of emission or other clearly distinguishing features readily recognized internationally.

737A#2A. In the event that the transmission of identification signals by a space station is not possible, that station shall be identified by specifying the angle of inclination of the orbit, the period of the object in space and the altitudes of apogee and perigee of the space station in kilometres. In the case of a space station on board a stationary satellite, the mean geographical longitude of the projection of the satellite's position on the surface of the Earth shall be specified.

738 #3. In order that stations may be readily identified, each station shall transmit its identification as frequently as practicable during the course of transmissions, including those made for tests, adjustments or experiments. During such transmissions, however, identification shall be transmitted at least hourly, preferably within the period from ten minutes before to ten minutes after the hour (G.M.T.), unless to do so would cause unreasonable interruption of traffic. To meet these identification requirements, administrations are urged to ensure that, wherever practicable, superimposed identification methods be employed in accordance with C.C.I.R. Recommendations.

739 #4. (1) The identifying signal shall be transmitted by methods which, in accordance with C.C.I.F. Recommendations, do not require the use of special terminal equipment for reception.

740. (2) If a superimposed identifying signal is used, the identification shall be preceded by the signal QTT.

741 #5. When a number of stations work simultaneously in a common circuit, either as relay stations, or in parallel on different frequencies, each station shall, as far as practicable, transmit its own identification or use of all the stations concerned.

742 #6. Each Member or Associate Member reserves the right to establish its own measures for identifying its stations used for national defence. However, it shall use, as far as possible, call signs recognizable as such, and containing the distinctive letters of its nationality.

Section II. Allocation of International Series and Assignment of Call Signs

743 #7. (1) All stations open to the international public correspondence service, all amateur stations and other stations which are capable of causing harmful interference beyond the boundaries of the country to which they belong, shall have call signs from the international series allocated to each country as given in the Table of Allocation of Call Sign Series.

744 (2) However, it is not compulsory to assign call signs from the international series to stations which are easily identified by other means (see No. 737) and whose signals of identification or characteristics of emission are published in international documents.

745 and 746 Text on page 225 of "Radio Regulations".

747 NOTE: The complete table of allocation of international call sign series could be found on pages 225-229 of ITU's publication entitled "Radio Regulations" (edition of 1968). This publication is available in the Outer Space Affairs Library for consultation.

748 #9. Should the available call sign series in the table be exhausted, new call sign series may be allocated according to the principles set out in Resolution No. 8 Relating to the Formation of Call Signs and the Allocation of New International Series.

749 #10. Between administrative radio Conferences, the Secretary General is authorized to deal with questions relating to changes in the allocation of series of call signs, on a provisional basis, and subject to confirmation by the following Conference (See also No. 748).



749A #10A. As an interim procedure, the Secretary-General shall be responsible for supply series of selective call numbers or signals (see No. 783H) at the request of the administrations concerned.

750 # 11. (1) Each country shall choose the call signs and, if the selective calling system used is in accordance with Appendix 20C\* the ship station selective call number and the coast station identification number of its stations from the international series allocated or supplied to it; and shall, in accordance with Article 20, notify this information to the Secretary-General . . . . . These notifications do not include call signs assigned to amateur and experimental stations.

751 (2) The Secretary-General shall ensure that the same call sign, the same selective call number or the same identification number is not assigned more than once and that call signs which might be confused with distress signals, or with other signals of the same nature, are not assigned.

752 # 12. (1) When a fixed station uses more than one frequency in the international service, each frequency may be identified by a separate call sign used solely for this frequency.

753 (2) When a broadcasting station uses more than one frequency in the international service, each frequency may be identified by a separate call sign used solely for this frequency or by some other appropriate means, such as announcing the name of the place and frequency used.

754 (3) When a land station uses more than one frequency, each frequency may, if desired, be identified by a separate call sign.

755 (4) Where practicable, coast stations should use a common call sign for each frequency series<sup>1/</sup>.

Section III. Formation of Call Signs

756 #13. (1) The twenty-six letters of the alphabet, as well as digits in the cases specified below, may be used to form call signs. Accented letters are excluded.

757 (2) However, the following combinations shall not be used as

<sup>1/</sup> By "frequency series" is meant a group of frequencies, each of which belongs to one of the different bands between 4000 and 27 500 kc/s that are allocated exclusively to the maritime mobile service.

\* of the "Radio Regulations"

call signs:

- 758 (a) combinations which might be confused with distress signals or with other signals of a similar nature;
- 759 (b) combinations reserved for the abbreviations to be used in the radiocommunication services
- 760 SUP (Mar)
- 761 (d) for amateur stations, combinations commencing with a digit when the second character is the letter O or the letter I.
- 762 #14. Call signs in the international series are formed as indicated in Nos. 763 to 773. The first letter in a particular series of letters may be replaced, in certain cases, by a digit (see Nos. 747 and 748).

Land fixed stations

- 763 #15. (1) - three letters  
or  
- three letters followed by not more than three digits (other than the digits 0 and 1 in cases where they immediately follow a letter).
- 764 (2) However, it is recommended that, as far as possible,  
(a) the call signs of coast and aeronautical stations consist of:  
- three letters  
or  
- three letters followed by one or two digits (other than the digits 0 and 1 in cases where they immediately follow a letter);  
(b) the call signs of fixed stations consist of:  
- three letters followed by two digits (other than the digits 0 and 1 in cases where they immediately follow a letter).

Ship stations

- 765 #16. (1) - four letters.
- 766 (2) However, ship stations employing radiotelephony may also use a call sign consisting of:  
- two or three letters followed by four digits (other than the digits 0 and 1 in cases where they immediately follow a letter).



Aircraft stations

767 #17. - five letters.

Ship's survival craft stations

768 #18. - the call sign of the parent ship followed by two digits (other than the digits 0 or 1 in cases where they immediately follow a letter).

Emergency position-indicating radiobeacon stations

768A#18A. - the Morse letter B and/or the call sign of the parent ship to which the radiobeacon belongs.

Aircraft survival craft stations

769 #19. - the complete call sign of the parent aircraft (see No. 767), followed by a single digit other than 0 or 1.

Land mobile stations

770 #20. (1) - four letters followed by a single digit other than 0 or 1.

771 (2) However, land mobile stations employing radiotelephony may also use a call sign consisting of:

- two or three letters followed by four digits (other than the digits 0 or 1 in cases where they immediately follow a letter).

Amateur and experimental stations

772 #21. (1) - one or two letters and a single digit (other than 0 or 1), followed by a group of not more than three letters.

773 (2) However, the prohibition of the use of the digits 0 and 1 does not apply to amateur stations.

Stations in the Space Service

773A#21A. When call signs for stations in the space service are employed, it is recommended that they consist of:

- two letters followed by two or three digits (other than the digits 0 and 1 in cases where they immediately follow a letter). (See also No. 737A.)

Section IV. Identification of Stations using Radiotelephony

774 #22. Stations using radiotelephony shall be identified as indicated in Nos. 775 to 783.

775 #23. (1) Coast Stations

- a call sign (see Nos. 763 and 764); or  
- the geographical name of the place as it appears in the List of Coast Stations, followed preferably by the word RADIO or by any other appropriate indication.

776 (2) Ship stations

- a call sign (see Nos. 765 and 766); or  
- the official name of the ship preceded, if necessary, by the name of the owner on condition that there is no possible confusion with distress, urgency and safety signals; or  
- its selective call number or signal.

777 (3) Ship's survival craft stations

- a call sign (see No. 768); or  
- a signal of identification consisting of the name of the parent ship followed by two digits.

777A (4) Emergency position-indicating radiobeacon stations:

When speech transmission is used

- the name and/or the call sign of the parent ship to which the radiobeacon belongs.

778 #24. (1) Aeronautical stations

- the name of the airport or geographical name of the place followed, if necessary, by a suitable word indicating the function of the station.

779 (2) Aircraft stations

- a call sign (see No. 767), which may be preceded by a word designating the owner or the type of aircraft;  
or  
- a combination of characters corresponding to the official registration mark assigned to the aircraft; or  
- a word designating the airline, followed by the flight identification number.



780 (3) In the exclusive aeronautical mobile frequency bands, aircraft stations using radiotelephony may use other methods of identification, after special agreement between governments, and on condition that they are internationally known.

781 (4) Aircraft survival craft stations  
- a call sign (see No. 769).

782 # 25. (1) Base Stations  
- a call sign (see No. 763); or  
- the geographical name of the place followed, if necessary, by any other appropriate indication.

783 (2) Land mobile stations  
- a call sign (see Nos. 770 and 771); or  
- the identity of the vehicle or any other appropriate indication.

Section IVA. Selective Call Numbers in the Maritime Mobile Service

783A# 25A. When stations of the maritime mobile service use selective calling devices in accordance with Appendix 20C, their call numbers shall be assigned by the responsible administrations in accordance with the provisions below.

Formation of ship station selective call numbers and coast station identification numbers.

783B# 25B. (1) The ten digits from 0 to 9 inclusive shall be used to form selective call numbers.

783C (2) However, combinations of numbers commencing with the digits 00 (zero, zero) shall not be used when forming the identification numbers for coast stations.

783D (3) Ship station selective call numbers and coast station identification numbers in the series are formed as indicated in Nos. 783E, 783F and 783G.

783E (4) Coast station identification numbers  
- four digits (see No. 783C).

783F (5) Ship station selective call numbers  
- five digits.

783G (6) Predetermined groups of ship stations  
- five digits consisting of:  
- the same digit repeated five times, or  
- two different digits repeated alternately.

Assignment of ship station selective call numbers and coast station identification numbers.

783H# 25C. (1) In cases where selective call numbers for ship stations and identification numbers for coast stations are required for use in the maritime mobile service and the selective calling system is in accordance with Appendix 20C, as an interim procedure, the selective call numbers and identification numbers shall be supplied by the Secretary-General on request. Upon notification by an administration of the introduction of selective calling for use in the maritime mobile service:

- selective call numbers for ships will be supplied as required in blocks of 100 (one hundred);
- coast station identification numbers will be supplied in blocks of 10 (ten to meet actual requirements);
- selective call numbers for selective calling of predetermined groups of ship stations in accordance with No. 783G will be supplied as required as single numbers.

The final procedure shall be determined at a future competent World Administrative Radio Conference.

783I (2) Each administration shall choose the selective call numbers to be assigned to its ship stations from the blocks of the series supplied to it.

783J (3) Each administration shall choose the coast station identification numbers to be assigned to its coast stations from the blocks of the series supplied to it.

Section V. Special Provisions

784 # 26. (1) In the aeronautical mobile service, after communication has been established by means of the complete call sign, the aircraft station



may use, if confusion is unlikely to arise, an abbreviated call sign or identification consisting of:

- 785 (a) in radiotelegraphy, the first character and last two letters of the complete five-letter call sign;
- 786 (b) in radiotelephony:
  - the first character of the complete five-letter call sign; or
  - the abbreviation of the name of the owner of the aircraft (company or individual); or
  - the type of aircraft
 followed by the last two letters of the complete five-letter call sign or by the last two characters of the registration mark.

787 (2) The provisions of Nos. 784, 785 and 786 may be amplified or modified by agreement between administrations concerned.

788 # 27. The distinguishing signals allotted to ships for visual and aural signalling shall, in general, agree with the call signs of ship stations.

ARTICLE 21

Inspection of Mobile Stations

838 #1. (1) The governments or appropriate administrations of countries which a mobile station visits, may require the production of the licence for examination. The operator of the mobile station, or the person responsible for the station, shall facilitate this examination. The licence shall be kept in such a way that it can be produced upon request. As far as possible, the licence, or a copy certified by the authority which has issued it, should be permanently exhibited in the station.

839 (2) The inspectors shall have in their possession an identity card or badge, issued by the competent authority, which they shall show on request of the master or person responsible for the ship, aircraft or other vehicle carrying the mobile station.

840 (3) When the licence cannot be produced or when manifest irregularities are observed, governments or administrations may inspect the radio

installations in order to satisfy themselves that these conform to the conditions imposed by these Regulations.

841 (4) In addition, inspectors have the right to require the production of the operators' certificates, but proof of professional knowledge may not be demanded.

842 #2. (1) When a government or an administration has found it necessary to adopt the course indicated in No. 840, or when the operators' certificates cannot be produced, the government or administration to which the mobile station is subject shall be so informed without delay. In addition, the procedure specified in Article 16 is followed when necessary.

843 (2) Before leaving, the inspector shall report the result of his inspection to the master, or the person responsible for the ship, aircraft or other vehicle carrying the mobile station. If any breach of the conditions imposed by these Regulations is observed, the inspector shall make this report in writing.

844 #3. The Members and Associate Members of the Union undertake not to impose upon foreign mobile stations which are temporarily within their territorial waters or make a temporary stay in their territory, technical and operating conditions more severe than those contemplated in these Regulations. This undertaking in no way affects arrangements which are made under international agreements relating to maritime or air navigation, and which are therefore not covered by these Regulations.



P A R T V

Technical aspects of the registration of objects launched into space. Information received from the International Frequency Registration Board (IFRB) of the International Telecommunication Union (ITU)

As requested by the Legal Committee of the United Nations on the Peaceful Uses of Outer Space, the Scientific and Technical Sub-Committee has been invited to study "the technical aspects of the registration of objects launched into space, obtaining suitable information from the United Nations special agencies, such as the ITU, etc., concerned with the registration of such launchings".

According to the International Telecommunication Convention, the ITU "affects allocation of the radio frequency spectrum and registration of radio frequency assignments in order to avoid harmful interference between radio stations of different countries". The responsibilities of the ITU in this field extend to all kinds of radio stations, wherever they are located in the world, including stations on board objects launched into space; it is in this respect that the ITU is concerned with the registration of launchings.

Frequency assignments are being registered by the ITU according to a procedure defined in general terms in the International Telecommunication Convention. The ITU created in 1947 a permanent five-member board, the International Frequency Registration Board (IFRB), which has the duty to effect an orderly recording, in the Master International Frequency Register, of frequency assignments made by the different countries, so as to establish the date, purpose and technical characteristics of each of these assignments with a view to ensuring formal international recognition thereof. Each frequency assignment registered enjoys in this way a legal status from which are derived the rights and obligations of the various countries in the utilization of the radio frequency spectrum. The way in which this duty is being performed by the Board is specified in detail in the Radio Regulations annexed to the International Telecommunication Convention.

According to the Radio Regulations, a frequency assignment to a particular radio station is composed of a number of technical characteristics which permit the determination of the spectrum and space distribution of the radiated power, mainly:

- (a) the frequency, expressed in kilocycles per second, which define the periodicity of the electro-magnetic radiation of the radio station;
- (b) the location of the source of the electro-magnetic radiation;
- (c) the technical characteristics of the radiated information;
- (d) the data required to determine the power of the electro-magnetic radiation in any solid angle around the location of the station.

In accordance with the provisions of the Radio Regulations, countries shall notify to the IFRB any frequency they intend to assign to their radio stations, if the use of the frequency concerned is capable of causing harmful interference to any service of any other country, or if the frequency is to be used for international radiocommunication, or if it is desired to obtain international recognition of the use of the frequency. It may then be said that what is being registered (and is the subject of formal international recognition) is in fact neither the frequency as such, nor the station, but the use of the frequency by a specific station for a specific purpose.

A radio station can be located on land, on board a ship or aircraft, or on board an object launched into space, and the registration procedure followed by the countries and by the IFRB. With respect to a frequency assignment, both from the technical and legal point of view, relates to the location of the radio station or to the object wherever it is situated only in so far as the location of the source of the radiated electro-magnetic energy is concerned. This information, together with the other characteristics of the frequency assignment, permits the countries and the IFRB to apply the rules and standards in force with a view to avoiding mutual harmful interference between radiocommunications.

All technical characteristics of all frequency assignments registered according to the Radio Regulations are published with all appropriate technical and legal data in a service document of the ITU, the International Frequency List (the printed form of the Master International Frequency Register), which is the common ground where the various countries find the elements required to solve their radiocommunication problems while avoiding interference. It is to be noted in this respect that the same portion of the frequency spectrum is often shared between various services, in particular where space services are concerned, and that consequently there can be only one Master International Frequency Register, thus one single International Frequency List.



From the point of view of the identification means of radio stations, it is provided for in the Radio Regulations that any radio station shall have a licence issued by the government of the country to which the station in question is subject. Each country, when delivering a licence, assigns to the station, in addition to the above-mentioned technical characteristics, a "call sign" formed on the basis of the "Table of Allocation of International Call Sign Series" given in article 19 of the Radio Regulations, as a means of identifying the station on the basis of its transmission. However, in the event that the transmission of identification signals by a space station is not possible, that station shall be identified by specifying the angle of inclination of the orbit, the period of the object in space and the altitudes of apogee and perigee of the space station in kilometres. In the case of a space station on board a stationary satellite, the mean geographical longitude of the projection of the satellite's position on the surface of the Earth shall be specified.

P A R T V I

Information received from COSPAR on the procedure followed for the Designation of Statellites and Space Probes.

(1) Resume of COSPAR Scheme for International Designation of Statellites and Space Probes.

The COSPAR Guide to Rocket and Statellite Information and Data Exchange (COSPAR Transactions No. 4, revised December 1967) provides in Section 4 for the International URSIGRAM and World Days Service to assign designations on behalf of COSPAR to all launchings of statellites and space probes and includes the outline of the procedures. In the working system, national representatives to COSPAR arrange that a launching announcement for each launching of a statellite or space probe by their country is sent to the IUWDS World Warning Agency for Rockets and Statellites (telegraphic address, SATWARN WASHINGTON) as soon as possible after the launching. This IUWDS agency keeps a systematic record of all launchings reported to it. A new launching is entered into this record and is assigned the next international designation serial number (e.g., 1970-14); if the launching involves a scientific statellite or space probe then the letter A is assigned to the principal scientific orbiting payload, the letter B to a second such payload if it is a multiple launch, etc. An effort is made to assign the international designations in the sequence of the time of launching but in some cases this is not possible because of delay in receiving information. The IUWDS agency attempts to watch the public press information for news about launchings and in case the formal launching announcement is not received in a reasonable time, makes inquiry of the national representative to COSPAR of the country concerned.

Soon after the launching announcement is received and the designation assigned, the IUWDS agency sends a telegraphic notice equating the national name, if any, given in the launching announcement to the COSPAR designation number. This telegraphic notice is sent to the principal centers which keep track of all launchings for tracking or orbit determination purposes and which have asked to be promptly informed. A copy is sent by mail to the COSPAR Secretariat. Every two weeks the IUWDS agency issues a printed bulletin, the SPACEWARN Bulletin, which includes a cumulative list of



recent designations giving the COSPAR designation number, the national name, if any, and the date of launch. This Bulletin is issued in about 300 copies and is sent to the "national SPACEWARN contacts" of each participating country, to various COSPAR officials and to others who have asked to receive this information, including the Secretariat of the U.N. Committee on the Peaceful Uses of Outer Space. These designations are subsequently repeated in the COSPAR Information Bulletin in a cumulative list of all launchings. The annual report of the COSPAR Correspondent for SPACEWARN tabled at each Plenary Meeting of COSPAR includes a resume of all designations made in the way described above by IUWDS on behalf of COSPAR.

(2) Comments on the Potential Relationship of COSPAR Designations of Statellites and Space Probes with the Matter of Registration of Space Objects.

The international designation of statellites and space probes serves a different purpose from the registration of space objects but the two activities can and should be related. It is our understanding that the object of international registration of space objects has as one of its purposes the suitable marking of objects in space to enable the identification with a particular launching. It is our understanding that some criteria will be established for the minimum size of components of a space launching which should be marked with a registration number. For example one could envisage that each component of a space launching which is planned to be put into a separate orbit would be marked if above some minimum size and weight. Perhaps other components above some minimum size and weight would also be so marked to provide for the possibility of unplanned separation into a separate orbit. One possible way to approach an orderly scheme for such registration markings which would provide for correlation with successful launchings which receive COSPAR designations would be as follows: The COSPAR designation is not assigned until after a successful launch while the registration markings must be prepared long in advance. It is likely that many spacecraft or rockets are prepared but are never launched and in addition some launching attempts are not successful. Thus it is not practical to have the COSPAR designations serve for marking purposes. One of several possible solutions to the problem of registration would be to have an agreed-on scheme assigning to each country

distinctive identification letters or numbers, presumably no more than two characters. Then each country would assign for their internal purposes and in any way in which they saw fit an additional number, say no more than three characters, to identify the components of each space object they were preparing for possible launch. Upon a successful launch of a space object, that country could then include the registration number of the actual launch, equated with the COSPAR identification number assigned immediately after launch, in their periodic reports to the U.N. In this way there would be in the U.N. files an orderly record of objects in space corresponding to each space launching. Such an approach would involve no changes in the present COSPAR scheme for assigning designations to statellites and space probes and would appear to satisfy many of the objectives of registration of space objects. COSPAR would be pleased to co-operate with U.N. authorities in the further development of plans to correlate designations with registrations along the above or any other effective scheme.

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If wished by the United Nations the question of how the existing COSPAR designation scheme could contribute to the problem of Registration of Objects in Space initiated by the United Nations could be discussed in more detail during the XIIIth Meeting of COSPAR to be held in Leningrad, 20-29th May, 1970.

If this is so, it seems desirable that the results of deliberations in respect to the Registration of Space Objects of the next session of the Scientific and Technical Sub-Committee would be transmitted to COSPAR during the Plenary Meeting in Leningrad.

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