

U. S. COAST GUARD

(Treasury Department)

COMMANDANT, COMMODORE W. E. REYNOLDS, U. S. C. G.

- (a) Aide for Aviation, Coast Guard Headquarters, Washington.
Lieut. Comm. Stanley V. Parker, U. S. C. G.
- (b) Commanding Officer, Coast Guard Aviation Station, Morehead City, N. C.
Lieut. Commander (E) C. E. Sugden, U. S. C. G.
Officers on duty at Aviation Station, Morehead City.
Lieut. Comm. Robert Donohue, U. S. C. G.
Lieut. Comm. E. F. Stone, U. S. C. G.
Lieut. Comm. E. F. Palmer, U. S. C. G.
Gunner C. T. Thrun, U. S. C. G.
Gunner J. H. Earle, U. S. C. G.
Machinist W. S. Anderson, U. S. C. G.
Officers Qualified for Aviation Duty.
Flight.
Lieut. Comm. Stanley V. Parker, U. S. C. G.
Lieut. Comm. P. B. Eaton, U. S. C. G.
Lieut. Comm. E. A. Coffin, U. S. C. G.
Lieut. Comm. C. E. Sugden, U. S. C. G.
Lieut. Comm. Robert Donohue, U. S. C. G.
Lieut. Comm. E. F. Stone, U. S. C. G.
Lieut. Comm. W. P. Wishaar, U. S. C. G.
Lieut. Comm. C. C. Von Paulsen, U. S. C. G.
Gunner C. T. Thrun, U. S. C. G.
Machinist W. S. Anderson, U. S. C. G.
Engineering.
Lieut. Comm. (E) N. B. Hall, U. S. C. G.
Lieut. (E) E. F. Palmer, U. S. C. G.
Gunner J. H. Earle, U. S. C. G.
- (c) The complement of the Aviation Station is fixed at present at 31 enlisted men.

THE PUBLIC HEALTH SERVICE

(Treasury Department)

The Public Health Service, Treasury Department, controls the entry into American ports of civil aircraft. In the case of an aircraft leaving a foreign country, the pilot of such a craft must secure an American consular bill of health from the American consul at the port of departure, and at the port of arrival must pass quarantine inspection as for maritime carriers. For this purpose the United States quarantine regulations on October 22, 1920, have been amended as follows by the Secretary of the Treasury:—

Paragraph 2 is amended to read as follows:

"2. Masters of vessels or aircraft clearing from or leaving any foreign port or any port in the possessions or other dependencies of the United States for a port in the United States or its possessions or other dependencies must obtain a bill of health, in duplicate, signed by the proper officer or officers of the United States as provided for by law, except as provided for in paragraph 3."

Paragraph 47 is amended to read as follows:—

"47. The form of certificate which shall be issued to a vessel or aircraft

when released from quarantine shall be prescribed by the Surgeon General of the Public Health Service, and shall embody the statement that the vessel or aircraft has in all respects complied with the quarantine regulations prescribed by the Secretary of the Treasury, and that in the opinion of the quarantine officer it will not convey quarantinable disease, and that said vessel or aircraft is granted free or provisional pratique to enter her port of destination, the name of which is to be embodied in the blank."

SUB-COMMITTEE ON COMMERCIAL AVIATION
OF
ECONOMIC LIAISON COMMITTEE,
REPRESENTING
DEPARTMENTS OF THE GOVERNMENT
AND
CIVILIAN ACTIVITIES.

This committee, although without official standing, has endeavored to further aeronautics by discussing co-ordination of the various activities, gathering information and discussing current problems concerning the art.

THE MEMBERSHIP

- Dr. R. S. MacElwee, Dept. of Commerce, Washington, D. C. (Chairman.)
 W. R. Manning, State Department, Washington, D. C.
 S. S. Bradley, Manufacturers Aircraft Association, 501 Fifth Ave., N. Y. C.
 Capt. M. S. McCollough, U. S. A., Air Service, War Department, Washington, D. C.
 Comm. V. K. Coman, U. S. N., Navy Department, Washington, D. C.
 Capt. Stanley V. Parker, Coast Guard Headquarters, Washington, D. C.
 John M. Lyon, Bureau of Immigration, Department of Labor, Washington, D. C.
 J. C. Edgerton, Air Mail Service, Post Office Department, Washington, D. C.
 Capt. L. W. Miller, U. S. A., Air Service, War Department, Washington, D. C.
 Dr. L. J. Briggs, Bureau of Standards, Washington, D. C.
 Maj. H. M. Hickam, U. S. A., Air Service, War Department, Washington, D. C.
 Ernest C. Corkhill, Division of Customs, Treasury Department, Washington, D. C.
 George W. Lewis, National Advisory Committee for Aeronautics, Washington, D. C.

BUREAU OF FOREIGN AND DOMESTIC COMMERCE
(Department of Commerce)

The Bureau of Foreign and Domestic Commerce of the Department of Commerce has for some time been gathering information on commercial aviation, a considerable part of such material consisting of reports sent in by American consular officers in compliance with circular instructions and questionnaires prepared by the Bureau and issued through the Department of State. A request for information on commercial aviation has also been addressed to the commercial attachés of the Department of Commerce in a number of foreign countries, particularly for such information on the sub-

ject as may not be accessible to or not likely to be transmitted by consular officers.

BUREAU OF STANDARDS

(Department of Commerce)

The Bureau of Standards has for some time closely co-operated with the air services of both the Army and Navy. Its altitude laboratory, constructed at the time the United States entered the war, was for a long time the only plant of this kind in existence. It is so designed that the engine to be tested may be enclosed in an airtight concrete chamber from which the air and exhaust gases are removed by means of a vacuum pump. At the same time the temperature of the air entering the carburetor and within the chamber itself is reduced by a refrigerating plant so that the atmospheric conditions met with at any desired altitude up to about 35,000 feet may be duplicated. Complete equipment is provided for measuring the horsepower output of the engine as well as the temperatures and pressures at various points.

A very complete investigation of ignition appliances used in connection with aeronautic engines was started during the war and has been continued since that time. It has included the testing of all the commonly-used types of spark plugs, magnetos, and battery systems of ignition. A special spark plug porcelain was developed which possesses properties rendering it superior to the ordinary forms of refractory material.

The performance of aircraft radiators, particularly as regards their head resistance, is of great importance in aeronautic work. This was thoroughly investigated and specimens of almost all the standard types of radiator core were tested, not only for head resistance, but for efficiency as heat dissipating devices.

A wind tunnel with an interior dimension of 54 inches was constructed early in the war and many tests of model aerofoils, drop bombs, and of the head resistance of radiators have been conducted. More recently a somewhat similar tunnel in which a much higher wind speed may be secured has been completed and the work has been continued.

A special section of one of the scientific divisions is devoted to the investigation and testing of aeronautic instruments. Its work has included assistance to manufacturers in the design of special instruments required for airplanes and dirigibles, in the testing and output of aeronautic instrument factories, and in the collection of information pertaining to domestic and foreign aviation instruments. A great many reports were issued to the military services during the war and since that time.

The Bureau's work in connection with aeronautic engines, ignition systems, and radiators will be found to be completely covered in the series of publications of the National Advisory Committee for Aeronautics. Reports on the aeronautic instrument work have been issued in temporary form directly from the Bureau.

The optical division of the Bureau aided in the development of special ultra-violet sensitive plates for use in airplane photography and these have given extremely satisfactory results.

The testing of all sorts of materials used in airplane construction was carried on during the war and is still undertaken quite frequently at the request of the government departments. Almost all of the activities of the Bureau of Standards affect aviation in one form or another, but the above subjects are those believed to be of greatest importance.

FOREST PRODUCTS LABORATORY

MADISON, WIS.

(Conducted by U. S. Forest Service, Dept. of Agriculture.)

The laboratory employs some 200 persons, including a large technical staff. Scientific investigation is carried on along many lines of great interest to the aircraft industry — strength tests, kiln drying, wood preservation, chemical products, etc. The laboratory makes the result of its labors available to the public as quickly as possible. It is in constant touch with various industries.

BUREAU OF MINES

(Department of the Interior)

The aeronautical work of the Bureau of Mines, Department of the Interior, consists mainly in the development of helium production for use in lighter-than-air craft, which work is being carried on in conjunction with the Helium Board of the Army and Navy.¹

The development of a process whereby helium, a non-inflammable gas, for use in lighter-than-air craft, can be produced in quantities and at a comparatively low cost, constitutes one of the greatest single contributions of the United States to the science of aeronautics. Experimental work on helium production was started by the Bureau of Mines in 1917, when an allotment of \$100,000, half each from the Army and Navy, recommended by the Aircraft Production Board, became available for this purpose. At that time not more than 100 cubic feet of helium had been isolated in the whole world and the cost of one cubic foot was approximately \$1,700, which was absolutely prohibitive for use in balloons and airships.

However, as helium is non-inflammable and its lifting power is but slightly below that of hydrogen, about 92 per cent, the quantity production of helium at a low cost was considered extremely desirable for war service, for it would have eliminated the fire risk of observation balloons and airships.

Therefore, upon our entry into the war three experimental plants for the production of helium from natural gas obtained from the Petrolia pool, at Petrolia, Tex., were erected. The operation of these plants was attended by great success, for at the time of the Armistice altogether 225,000 cubic feet of helium had been produced, 147,000 cubic feet of which was ready for shipment to the battle fronts. This gas was produced at a cost of about 39 cents per cubic foot — a most remarkable reduction in price.

As the result of this success of the experimental helium plants, for which the Bureau of Mines, and in particular its chief metallurgist, Dr. Frederick G. Cottrell, together with the Linde Air Products Company, were mainly responsible the Navy Department decided to erect at Fort Worth, Tex., a large helium production plant employing the Linde process. This plant commenced operation on November 5, 1920, and expects to produce helium at a cost of about 5 cents per cubic foot.

Two of the original experimental helium plants have been dismantled, but in the third plant experimental work is being vigorously pursued by the Bureau of Mines, employing a process entirely different from that used by the Navy, which, it is expected, will further reduce the production cost of helium.

A helium research laboratory is now being erected at Washington, D. C.,

¹ See also Helium Board Report in Appendix.

on funds supplied jointly by the Army and Navy. This plant will be in charge of the Bureau of Mines and its particular function will be the study of the properties of gases and liquids under low temperature conditions with particular reference to helium and its separation from natural gas.

THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

2722 Navy Building, Washington, D. C.

ORGANIZATION

	CHARLES D. WALCOTT, Sc.D., Chairman
	S. W. STRATTON, Sc.D., Secretary
	JOSEPH S. AMES, Ph.D., Chairman, Executive Committee
Major THURMAN H. BANE, U.S.A.	CHARLES F. MARVIN, M.E.
Captain T. T. CRAVEN, U.S.N.	Maj. Gen. CHAS. T. MENOHER, U.S.A.
WILLIAM F. DURAND, Ph.D.	MICHAEL I. PUPIN, Ph.D.
JOHN F. HAYFORD, C.E.	Rear Admiral D. W. TAYLOR, U.S.N.
	ORVILLE WRIGHT, B.S.
	Executive Officer, G. W. LEWIS
	Assistant Secretary, J. F. VICTORY

During the past year the National Advisory Committee for Aeronautics has not only exercised its major functions in the field of scientific research in aeronautics but has also given much thought and attention to the broad general subject of commercial aeronautics, the means of developing it, and the governmental measures that would promote and encourage such development.

During the summer of 1920, the Committee detailed the leader of its aeronautical engineering staff, while in Europe, to make observations. The information thus obtained was made available to the American public through a series of special reports. One of the indications clearly evident from the reports issued by the Committee, is that Great Britain is doing her best to assure mastery of the air and with this object in view is devoting considerable energy and funds to the development of commercial aeronautics. France has subsidized a number of aeronautical enterprises. Germany, hampered as it is by the peace treaty restrictions, is giving greater attention to the development and operation of airships rather than airplanes. The Committee's reports indicate that the prevailing opinion in European countries generally is that the people and governments must develop and support commercial aeronautics as a vital element of their military policies.

The National Advisory Committee for Aeronautics emphasizes the need for the regulation and encouragement of commercial aeronautics in America not only from considerations of wise military preparedness, but also because, aside from military considerations, the development of commercial aviation will in time yield adequate returns in itself in the form of promoting and strengthening means of transportation, advancing the progress of civilization, and increasing the national wealth.

The Committee has proposed to Congress the establishment of a Bureau of Aeronautics in the Department of Commerce for the regulation and encouragement of civil air navigation and has recommended the principle of federal aid to the States in the establishment of landing fields throughout the country.

Two important contributions to the science of aeronautical engineering

have been worked out during the past year by the committee's field station, known as the Langley Memorial Aeronautical Laboratory. By the use of a specially devised accelerometer the stresses developed in an airplane in flight under different conditions have been very carefully computed. These data will be of great aid in the designing of an airplane to perform under certain specified conditions. The problems of stability in an airplane and of the forces acting on the various control surfaces have been studied, with the result that knowledge has been gained that permits the more accurate design of an airplane with assurance of stability and ease of control.

Under its direction, the altitude chamber was erected at the Bureau of Standards which has permitted experiments to be conducted on aircraft engines under operating conditions found at high altitudes. Through the direction and financial support given by the committee to the Bureau of Standards, the airplane radiator problem has been solved.

The most important research conducted in the United States in connection with the development of air propellers has been continuously conducted under the direction of the committee by Dr. W. F. Durand, of Leland Stanford University, member of the committee.

CONVENTION FOR THE REGULATION OF AIR NAVIGATION

(October 13, 1919.)

Amended Text as Signed by the United States of America with Reservations:

CHAPTER I

GENERAL PRINCIPLES

ARTICLE 1

The high contracting Parties recognize that every Power has complete and exclusive sovereignty over the air space above its territory.

For the purpose of the present convention the territory of a State shall be understood as including the national territory, both that of the Mother Country and of the colonies, and the territorial waters adjacent thereto.

ARTICLE 2

Each contracting State undertakes in time of peace to accord freedom of innocent passage above its territory to the aircraft of the other contracting States, provided that the conditions laid down in the present Convention are observed.

Regulations made by a contracting State as to the admission over its territory of the aircraft of the other contracting States shall be applied without distinction of nationality.

ARTICLE 3

Each contracting State is entitled, for military reasons or in the interest of public safety, to prohibit the aircraft of the other contracting States, under the penalties provided by its legislation and subject to no distinction being made in this respect between its private aircraft and those of the other contracting States, from flying over certain areas of its territory.

In that case the locality and the extent of the prohibited areas shall be published and notified beforehand to the other contracting States.

ARTICLE 4

Every aircraft which finds itself above a prohibited area shall, as soon as aware of the fact, give the signal of distress provided in paragraph of Annex D and land as soon as possible outside the prohibited area at one of the nearest aerodromes of the State unlawfully flown over.

CHAPTER II

NATIONALITY OF AIRCRAFT

ARTICLE 5

No contracting State shall, except by a special and temporary authorization, permit the flight above its territory of an aircraft which does not possess the nationality of a contracting State.

ARTICLE 6

Aircraft possess the nationality of the State on the register of which they are entered, in accordance with the provisions of Section I.(c) of Annex A.

ARTICLE 7

No aircraft shall be entered on the register of one of the contracting States unless it belongs wholly to nationals of such States.

No incorporated company can be registered as the owner of an aircraft unless it possesses the nationality of the State in which the aircraft is registered, unless the president or chairman of the Company and at least two-thirds of the directors possess such nationality, and unless the company fulfils all other conditions which may be prescribed by the laws of the said State.

ARTICLE 8

An aircraft cannot be validly registered in more than one State.

ARTICLE 9

The contracting States shall exchange every month among themselves and transmit to the International Commission for Air Navigation referred to in Article 34 copies of registrations and of cancellations of registration which shall have been entered on their official registers during the preceding month.

ARTICLE 10

All aircraft engaged in international navigation shall bear their nationality and registration marks as well as the name and residence of the owner in accordance with Annex A.

CHAPTER III

CERTIFICATES OF AIRWORTHINESS AND COMPETENCY

ARTICLE 11

Every aircraft engaged in international navigation shall, in accordance with the conditions laid down in Annex B, be provided with a certificate of airworthiness issued or rendered valid by the State whose nationality it possesses.

ARTICLE 12

The Commanding officer, pilots, engineers and other members of the operating crew of every aircraft shall, in accordance with the conditions laid down in Annex E, be provided with certificates of competency and licenses issued or rendered valid by the State whose nationality the aircraft possesses.

ARTICLE 13

Certificates of airworthiness and of competency and licenses issued or rendered valid by the State whose nationality the aircraft possesses, in accordance with the regulations established by Annex B and Annex E and hereafter by the International Commission for Air Navigation, shall be recognized as valid by the other States.

Each State has the right to refuse to recognize for the purpose of flights within the limits of and above its own territory certificates of competency and licenses granted to one of its nationals by another contracting State.

ARTICLE 14

No wireless apparatus shall be carried without a special license issued by

the State whose nationality the aircraft possesses. Such apparatus shall not be used except by members of the crew provided with a special license for the purpose.

Every aircraft used in public transport and capable of carrying ten or more persons shall be equipped with sending and receiving wireless apparatus when the methods of employing such apparatus shall have been determined by the International Commission for Air Navigation.

This Commission may later extend the obligation of carrying wireless apparatus to all other classes of aircraft in the conditions and according to the methods which it may determine.

CHAPTER IV

ADMISSION TO AIR NAVIGATION ABOVE FOREIGN TERRITORY

ARTICLE 15

Every aircraft of a contracting State has the right to cross the air spaces of another State without landing. In this case it shall follow the route fixed by the State over which the flight takes place. However, for reasons of general security it will be obliged to land if ordered to do so by means of the signals provided in Annex D.

Every aircraft which passes from one State into another shall, if the regulations of the latter State require it, land in one of the aerodromes fixed by the latter. Notification of these aerodromes shall be given by the contracting States to the International Commission for Air Navigation and by it transmitted to all the contracting States.

The establishment of international airways shall be subject to the consent of the States flown over.

ARTICLE 16

Each contracting State shall have the right to establish reservations and restrictions in favor of its national aircraft in connection with the carriage of persons and goods for hire between two points on its territory.

Such reservations and restrictions shall be immediately published, and shall be communicated to the International Commission for Air Navigation, which shall notify them to the other contracting States.

ARTICLE 17

The aircraft of a contracting State which establishes reservations and restrictions in accordance with Article 16 may be subjected to the same reservations and restrictions in any other contracting State, even though the latter State does not itself impose the reservations and restrictions on other foreign aircraft.

ARTICLE 18

Every aircraft passing through the territory of a contracting State, including landing and stoppages reasonably necessary for the purpose of such transit, shall be exempt from any seizure on the ground of infringement of patent, design, or model, subject to the deposit of security the amount of which in default of amicable agreement shall be fixed with the least possible delay by the competent authority of the place of seizure.

CHAPTER V

RULES TO BE OBSERVED ON DEPARTURE, WHEN UNDER WAY,
AND ON LANDING

ARTICLE 19

Every aircraft engaged in international navigation shall be provided with:—

- (a) A certificate of registration in accordance with Annex A.
- (b) A certificate of airworthiness in accordance with Annex B.
- (c) Certificates and licences of the commanding officer, pilots and crew in accordance with Annex E.
- (d) If it carries passengers, a list of their names.
- (e) If it carries freight, bills of lading and manifest.
- (f) Log books in accordance with Annex C.
- (g) If equipped with wireless, the special licence prescribed by Article 14.

ARTICLE 20

The log books shall be kept for two years after the last entry.

ARTICLE 21

Upon the departure or landing of an aircraft, the authorities of the country shall have, in all cases, the right to visit the aircraft and to verify all the documents with which it must be provided.

ARTICLE 22

Aircraft of the contracting States shall be entitled to the same measures of assistance for landing, particularly in case of distress, as national aircraft.

ARTICLE 23

With regard to the salvage of aircraft wrecked at sea the principles of maritime law will apply in the absence of any agreement to the contrary.

ARTICLE 24

Every aerodrome in a contracting State, which upon payment of charges is open to public use by its national aircraft, shall likewise be open to the aircraft of all the other contracting States.

In every such aerodrome there shall be a single tariff of charges for landing and length of stay applicable alike to national and foreign aircraft.

ARTICLE 25

Each contracting State undertakes to adopt measures to ensure that every aircraft flying above the limits of its territory, and every aircraft whatever it may be, carrying its nationality mark, shall comply with the regulations contained in Annex D.

Each of the contracting States undertakes to ensure the prosecution and punishment of all persons contravening these regulations.

CHAPTER VI

PROHIBITED TRANSPORT

ARTICLE 26

The carriage by aircraft of explosives and of arms and munitions of war is forbidden in international navigation. No foreign aircraft shall be permitted to carry such articles between any two points in the same contracting State.

ARTICLE 27

Each State may, in aerial navigation, prohibit or regulate the carriage or use of photographic apparatus. Any such regulations shall be at once notified to the International Commission for Air Navigation, which shall communicate this information to the other contracting States.

ARTICLE 28

As a measure of public safety, the carriage of objects other than those mentioned in Articles 26 and 27 may be subjected to restrictions by any contracting State. Any such regulations shall be at once notified to the International Commission for Air Navigation, which shall communicate this information to the other contracting States.

ARTICLE 29

All restrictions mentioned in Article 28 shall be applied equally to national and foreign aircraft.

CHAPTER VII

STATE AIRCRAFT

ARTICLE 30

The following shall be deemed to be State aircraft:—

- (a) Military aircraft.
- (b) Aircraft exclusively employed in State service, such as posts customs, police.

Every other aircraft shall be deemed to be a private aircraft.

All State aircraft other than military, customs, and police aircraft shall be treated as private aircraft and as such shall be subject to all the provisions of the present Convention.

ARTICLE 31

Every aircraft commanded by a person in military service detailed for the purpose shall be deemed to be a military aircraft.

ARTICLE 32

No military aircraft of a contracting State shall fly over the territory of another contracting State nor land thereon without special authorization. In case of such authorization the military aircraft shall enjoy, in principle, in the absence of special stipulation the privileges which are customarily accorded to foreign ships of war.

A military aircraft which is forced to land or which is requested or summoned to land shall by reason thereof acquire no right to the privileges referred to in the above paragraph.

ARTICLE 33

Special arrangements between the States concerned will determine in what cases police and customs aircraft may be authorized to cross the frontier. They shall in no case be entitled to the privileges referred to in Article 32.

CHAPTER VIII

INTERNATIONAL COMMISSION FOR AIR NAVIGATION

ARTICLE 34

There shall be instituted, under the name of the International Commission for Air Navigation, a permanent Commission placed under the direction of the League of Nations, and composed of:

Two representatives of each of the following States: The United States of America, France, Italy, and Japan;

One representative of Great Britain and one of each of the British Dominions and of India;

One representative of each of the other contracting States.

Each of the five States first named (Great Britain, the British Dominions and India counting for this purpose as one State) shall have the least whole number of votes which, when multiplied by five, will give a product exceeding by at least one vote the total number of votes of all the other contracting States.

All the States other than the five first named shall each have one vote.

The International Commission for Air Navigation shall determine the rules of its own procedure and the place of its permanent seat, but it shall be free to meet in such places as it may deem convenient. Its first meeting shall take place at Paris. This meeting shall be convened by the French Government, as soon as a majority of the signatory States shall have notified to it their ratification of the present Convention.

The duties of this Commission shall be:

- (a) To receive proposals from or to make proposals to any of the contracting States for the modification or amendment of the provisions of the present Convention and to notify changes adopted;
- (b) To carry out the duties imposed upon it by the present Article and by Articles 9, 13, 14, 15, 17, 27, 28, 36, and 37 of the present Convention;
- (c) To amend the provisions of the Annexes A—G;
- (d) To collect and communicate to the contracting States information of every kind concerning international air navigation;
- (e) To collect and communicate to the contracting States all information relating to wireless telegraphy, meteorology, and medical science which may be of interest to air navigation;
- (f) To ensure the publication of maps for air navigation in accordance with the provisions of Annex F;
- (g) To give its opinion on questions which the States may submit for examination.

Any modification of the provisions of any one of the Annexes may be made by the International Commission for Air Navigation when such modification shall have been approved by three-fourths of the total possible votes which could be cast if all the States were represented, and shall become effective from the time when it shall have been notified by the International Commission for Air Navigation to all the contracting States.

Any proposed modification of the Articles of the present Convention shall be examined by the International Commission for Air Navigation, whether it originates with one of the contracting States or with the Commission itself. No such modification shall be proposed for adoption by the contracting

States unless it shall have been approved by at least two-thirds of the total possible votes.

All such modifications of the Articles of the Convention (but not of the provisions of the Annexes) must be formally adopted by the contracting States before they become effective.

The expenses of organization and operation of the International Commission for Air Navigation shall be borne by the contracting States in proportion to the number of votes at their disposal.

The expenses occasioned by the sending of technical delegations will be borne by their respective States.

CHAPTER IX
FINAL PROVISIONS

ARTICLE 35

The High Contracting Parties undertake as far as they are respectively concerned to co-operate as far as possible in international measures concerning:

(a) The collection and dissemination of statistical, current, and special meteorological information, in accordance with the provisions of Annex G.;

(b) The publication of standard aeronautical maps, and the establishment of a uniform system of ground marks for flying, in accordance with the provisions of Annex F.;

(c) The use of wireless telegraphy in air navigation, the establishment of the necessary wireless stations, and the observance of international wireless regulations.

ARTICLE 36

General provisions relative to customs in connection with international air navigation are the subject of a special agreement contained in Annex H. to the present Convention.

Nothing in the present Convention shall be construed as preventing the contracting States from concluding, in conformity with its principles, special protocols as between State and State in respect of customs, police, posts, and other matters of common interest in connection with air navigation. Any such protocols shall be at once notified to the International Commission for Air Navigation, which shall communicate this information to the other contracting States.

ARTICLE 37

In the case of a disagreement between two or more States relating to the interpretation of the present Convention, the question in dispute shall be determined by the Permanent Court of International Justice to be established by the League of Nations and until its establishment by arbitration.

If the parties do not agree on the choice of the arbitrators, they shall proceed as follows:

Each of the parties shall name an arbitrator, and the arbitrators shall meet to name an umpire. If the arbitrators cannot agree, the parties shall

each name a third State, and the third State so named shall proceed to designate the umpire, by agreement or by each proposing a name and then determining the choice by lot.

Disagreement relating to the technical regulations annexed to the present Convention shall be settled by the decision of the International Commission for Air Navigation by a majority of votes.

In case the difference involves the question whether the interpretation of the Convention or that of a regulation is concerned, final decision shall be made by arbitration as provided in the first paragraph of this Article.

ARTICLE 38

In case of war, the provisions of the present Convention shall not affect the freedom of action of the contracting States either as belligerents or as neutrals.

ARTICLE 39

The provisions of the present Convention are completed by the Annexes A to H, which, subject to Article 34(c), shall have the same effect and shall come into force at the same time as the Convention itself.

ARTICLE 40

The British Dominions and India shall be deemed to be States for the purposes of the present Convention.

The territories and nationals of protectorates or of territories administered in the name of the League of Nations shall for the purposes of the present Convention be assimilated to the territory and nations of the Protecting or Mandatory States.

ARTICLE 41

States which have not taken part in the war of 1914-1919 shall be permitted to adhere to the present Convention.

This adhesion shall be notified through the diplomatic channel to the Government of the French Republic, and by it to all the signatory or adhering States.

ARTICLE 42

A State which took part in the war of 1914-1919 but which is not a signatory of the present convention may adhere only if it is a member of the League of Nations or until January 1st, 1923, if its adhesion is approved by the Allied and Associated Powers signatories of the Treaty of Peace concluded with the said State. After January 1st, 1923, this adhesion may be admitted if it is agreed to by at least three-fourths of the signatory and adhering States voting under the conditions provided by Article 34 of the present convention.

Applications for adhesions shall be addressed to the Government of the French Republic, which will communicate them to the other contracting Powers. Unless the State applying is admitted *ipso facto* as a member of the League of Nations, the French Government will receive the votes of the said Powers and will announce to them the result of the voting.

ARTICLE 43

The present Convention may not be denounced before January 1st, 1922. In case of denunciation, notification thereof shall be made to the Government of the French Republic, which shall communicate it to the other contracting parties. Such denunciation shall not take effect until at least one year after the giving of notice, and shall take effect only with respect to the Power which has given notice.

EDITOR'S NOTE.—A postscript to the Convention provides that:

"The present Convention shall be ratified.

"Each Power will address its ratification to the French Government, which will inform the other signatory Powers.

"The ratifications will remain deposited in the archives of the French Government.

"The present Convention will come into force for each signatory Power, in respect of other Powers which have already ratified, forty days from the date of the deposit of its ratification."

There follow the signatures of the representatives of the signatory Powers.

ANNEX A

THE MARKING OF AIRCRAFT

SECTION I.

GENERAL

(a) The nationality mark shall be represented by capital letters in Roman characters, *e. g.*,

France.....F.

The registration mark shall be represented by a group of four capital letters; each group shall contain at least one vowel, and for this purpose the letter Y shall be considered as a vowel. The complete group of five letters shall be used as a call sign of the particular aircraft in making or receiving signals by wireless telegraphy or other methods of communication, except when opening up communication by means of visual signals, when the usual methods will be employed. The nationality and registration marks are assigned in accordance with the table contained in section VIII. of this Annex.

(b) On aircraft other than State and commercial, the registration mark shall be underlined with a black line.

(c) The entry in the register and the certificate of registration shall contain a description of the aircraft and shall indicate the number or other identification mark given to it by the maker; the nationality and registration marks mentioned above; the usual station of the aircraft; the full name, nationality, and residence of the owner and the date of registration.

(d) All aircraft shall carry affixed to the car or to the fuselage in a prominent position a metal plate, inscribed with the names and residence of the owner and the marks of nationality and registration.

CERTIFICATE OF REGISTRATION

(Provisional Form)

Nationality
 Nationality mark
 Registration marks
 Date of registration.....

Type of Aircraft.....

Tourist	}
Commercial	
State	
Maker	
Maker's number	
Description	
Owner's full name	
Owner's residence	
Owner's nationality	
Station of the aircraft.....	
Signature and seal of authority issuing this certificate	}

.....

SECTION II.

LOCATION OF MARKS

The nationality and registration marks shall be painted in black on a white ground in the following manner:—

(a) *Flying Machines*.—The marks shall be painted once on the lower surface of the lower main planes and once on the upper surface of the top main planes, the top of the letters to be towards the leading edge. They shall also be painted along each side of the fuselage between the main planes and the tail planes. In cases where the machine is not provided with a fuselage the marks shall be painted on the nacelle.

(b) *Airships and Balloons*.—In the case of airships the marks shall be painted near the maximum cross section on both sides and on the upper surface equidistant from the letters on the sides.

In the case of balloons the marks shall be painted twice near the maximum horizontal circumference, as far as possible from one another.

In the case both of airships and balloons the side marks shall be visible both from the side and ground.

SECTION III.

ADDITIONAL LOCATION OF NATIONALITY MARKS

(a) *Flying Machines and Airships*.—The nationality mark shall also be painted on the left and right sides of the lower surface of the lowest tail planes or elevators and also on the upper surface of the top tail planes or elevators, whichever is the larger. It shall also be painted on both sides of the rudder, and on the outer sides of the outer rudders if more than one rudder is fitted.

(b) *Balloons*.—The nationality mark shall be painted on the basket.

SECTION IV.

MEASUREMENTS OF NATIONALITY AND REGISTRATION MARKS

(a) *Flying Machines*.—The height of the marks on the main planes and tail planes respectively shall be equal to four-fifths of the chord, and in the case of the rudder shall be as large as possible. The height of the marks on the fuselage or nacelle shall be four-fifths of the depth of the narrowest part of that portion of the fuselage or nacelle on which the marks are painted.

(b) *Airships and Balloons*.—In the case of airships, the nationality marks painted on the tail plane shall be equal in height to four-fifths of the chord of the tail plane and in the case of the rudder the marks shall be as large as possible. The height of the other marks shall be equal to at least one-twelfth of the circumference of the maximum transverse cross section of the airship.

In the case of balloons the height of the nationality mark shall be four-fifths of the height of the basket, and the height of the other marks shall be equal to at least one-twelfth of the circumference of the balloon.

(c) *General*.—In the case of all aircraft the letters of the nationality and registration marks need not exceed 2.5 metres in height.

SECTION V.

MEASUREMENT, TYPE OF LETTERS, &c.

(a) The width of the letters shall be two-thirds of their height and the thickness shall be one-sixth of their height. The letters shall be painted in plain block type and shall be uniform in shape and size. A space equal to half the width of the letters shall be left between the letters.

(b) In the case of underlined letters the thickness of the line shall be equal to the thickness of the letter and the space between the bottom of the letters and the line shall be equal to the thickness of the line.

SECTION VI.

SPACING BETWEEN NATIONALITY AND REGISTRATION MARKS

Where the nationality and registration marks appear together, a hyphen of a length equal to the width of one of the letters shall be painted between the nationality mark and registration mark.

SECTION VII.

MAINTENANCE

The nationality and registration marks shall be displayed to the best possible advantage, taking into consideration the constructional features of the aircraft. The marks must be kept clean and visible.

SECTION VIII.

TABLE OF MARKS

The nationality mark of each State named below applies to the aircraft of its Dominions, Colonies, Protectorates, dependencies, or of countries over which it is the Mandatory State.

Country.	Nationality Mark.	Registration Marks.
United States of America.....	N	All combinations made in accordance with the provisions of Section I (a) of this Annex, using a group of 4 letters out of the 26 of the alphabet, each group containing at least one vowel, <i>e.g.</i> , ADCJ, PURN.
British Empire.....	G	
France	F	All combinations made with B as first letter.
Italy	I	
Japan	J	All combinations made with C as first letter.
Bolivia	C	
Cuba	C	All combinations made with P as first letter.
Portugal	C	
Roumania	C	All combinations made with R as first letter.
Uruguay	C	
Czecho-Slovakia ..	L	All combinations made with B as first letter.
Guatemala	L	
Liberia	L	All combinations made with G as first letter.
Brazil	P	
Poland	P	All combinations made with L as first letter.
Belgium	O	
Peru	O	All combinations made with P as first letter.
China	X	
Honduras	X	All combinations made with C as first letter.
Serbia-Croatia- Slavonia	X	
Haiti	H	All combinations made with H as first letter.
Siam	H	
Ecuador	E	All combinations made with S as first letter.
Greece	S	
Panama	S	All combinations made with E as first letter.
Hedjaz	A	
Nicaragua	A	All combinations made with P as first letter.
		All combinations made with H as first letter.
		All combinations made with N as first letter.

ANNEX B

CERTIFICATES OF AIRWORTHINESS

The following main conditions govern the issue of certificates of airworthiness:—

1. The design of the aircraft in regard to safety shall conform to certain standard minimum requirements.
2. A satisfactory demonstration must be made in flying trials of the actual flying qualities of the type of aircraft examined, provided that machines subsequently manufactured which conform to the approved type need not be subject to such trials. The trials shall conform to certain standard minimum requirements.
3. The construction of every aircraft with regard to workmanship and materials must be approved. The control of the construction and of the tests shall be in accordance with certain standard minimum requirements.
4. The aircraft must be equipped with suitable instruments for safe navigation.
5. The standard minimum requirements of paragraphs 1 to 3 inclusive shall be fixed by the International Commission for Air Navigation. Until

they have been so fixed each contracting State shall determine the regulations under which certificates of airworthiness shall be granted or remain valid.

ANNEX C
LOG BOOKS

SECTION I.
JOURNEY LOG

This shall be kept for all aircraft and shall contain the following particulars:—

(a) Category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner; name of maker and the carrying capacity of the aircraft.

(b) In addition for each journey—

(i) The names, nationality and residence of each of the members of the crew.

(ii) The place, date, and hour of departure, the route followed, and all incidents *en route* including landings.

SECTION II.
AIRCRAFT LOG

This is obligatory only in the case of aircraft carrying passengers or goods for hire, and shall contain the following particulars:—

(a) Category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner; name of maker and the carrying capacity of the aircraft.

(b) Type and series number of engine; type of propeller showing number, pitch, diameter and maker's name.

(c) Type of wireless apparatus fitted.

(d) Table showing the necessary rigging data for the information of persons in charge of the aircraft and of its maintenance.

(e) A fully detailed engineering record of the life of the aircraft, including all acceptance tests, overhauls, replacements, repairs and all work of a like nature.

SECTION III.
ENGINE LOG

This is obligatory only in the case of engines installed in aircraft carrying passengers or goods for hire, and in such cases a separate log book shall be kept for each engine and shall always accompany the engine. It shall contain the following particulars:—

(a) Type of engine, series number, maker's name, power, normal maximum revolutions of engine, date of production and first date put into service.

(b) Registration mark and type of aircraft in which the engine has been installed.

(c) A fully detailed engineering record of the life of the engine, including all acceptance tests, hours run, overhauls, replacements, repairs, and all work of a like nature.

SECTION IV.
SIGNAL LOG

This is obligatory only in the case of aircraft carrying passengers or goods for hire, and shall contain the following particulars:—

(a) Category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner.

(b) Place, date, and time of the transmission or reception of any signal.

(c) Name or other indication of the person or station to whom a signal is sent or from whom a signal is received.

SECTION V.

INSTRUCTIONS FOR USE OF LOG BOOKS

(a) The constructor shall fill in and sign the original entries in the log books, as far as he is in a position to do so. Subsequent entries shall be made and signed by the pilot or other competent person.

(b) A copy of the certificate of airworthiness shall be kept in the pocket of the aircraft log book.

(c) All entries to be in ink, except in the case of journey and signal log books; the entries for these may be made in pencil in a rough note book, but shall be entered in ink in the log book every 24 hours. In the event of any official investigation the rough note book may be called for.

(d) No erasures shall be made in, nor pages torn from, any log book.

(e) A copy of these instructions shall be inserted in each log book.

ANNEX D

RULES AS TO LIGHTS AND SIGNALS

RULES OF THE AIR

DEFINITIONS

The word "aircraft" comprises all balloons, whether fixed or free, kites, airships, and flying machines.

The word "balloon" either fixed or free, shall mean an aircraft using gas lighter than air as a means of support, and having no means of propulsion.

The word "airship" shall mean an aircraft using gas lighter than air as a means of support, and having means of propulsion.

The words "flying machine" shall mean all airplanes, seaplanes, flying boats, or other aircraft heavier than air, and having means of propulsion.

An airship is deemed to be "under way" within the meaning of these rules when it is not made fast to the ground or any object on land or water.

SECTION I.

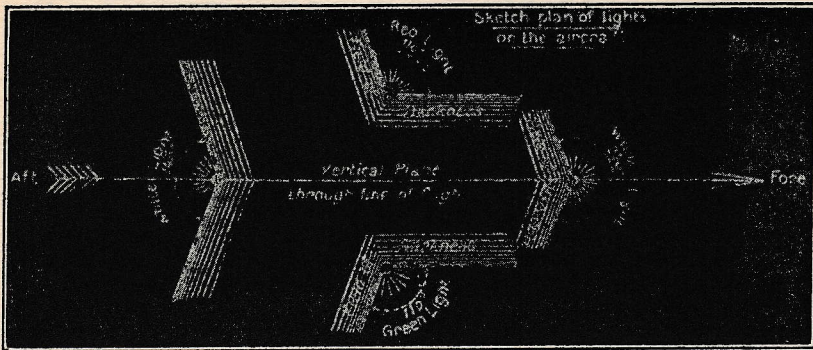
RULES AS TO LIGHTS

The word "visible" in these rules when applied to lights shall mean visible on a dark night with a clear atmosphere. The angular limits laid down in these rules as shown in the sketch (attached) shall be determined when the aircraft is in its normal attitude for flying on a rectilinear horizontal course.

1. The rules concerning lights shall be complied with in all weathers from sunset to sunrise, and during such time no other lights which may be mistaken for the prescribed lights shall be exhibited. The prescribed navigation lights must not be dazzling.

2. A flying machine, when in the air or manœuvring on land or water under its own power, shall carry the following lights:—

(a) Forward, a white light visible in a dihedral angle of 220 degrees bisected by a vertical plane through the line of flight, and of such a character as to be visible at a distance of at least 8 kilometres.



"Sketch Plan for Lights on Aircraft."

(b) On the right side, a green light so constructed and fixed as to show an unbroken light between two vertical planes whose dihedral angle is 110 degrees when measured to the right from dead ahead, and of such a character as to be visible at a distance of at least 5 kilometres.

(c) On the left side, a red light so constructed and fixed as to show an unbroken light between two vertical planes whose dihedral angle is 110 degrees when measured to the left from dead ahead, and of such a character as to be visible at a distance of at least 5 kilometres.

(d) The said green and red side lights shall be fitted so that the green light shall not be seen from the left side, nor the red light from the right side.

(e) At the rear, and as far aft as possible, a white light shining rearwards and visible in a dihedral of 140 degrees bisected by a vertical plane through the line of flight and of such a character as to be visible at a distance of at least 5 kilometres.

(f) In the case where, in order to fulfil the above conditions, the single light has to be replaced by several lights, the field of visibility of each of these lights should be so limited that only one can be seen at a time.

3. The Rules determined for the lighting of flying machines shall apply to airships subject to the following modifications:—

(a) All lights shall be doubled; the forward and aft lights vertically, and the side lights horizontally in a fore and aft direction.

(b) Both lights of each pair forward and aft shall be visible at the same time.

The distance between the lights comprising a pair shall not be less than 2 metres.

4. An airship, when being towed, shall carry the lights specified in paragraph 3, and, in addition, those specified in paragraph 6 for airships not under control.

5.—(a) A flying machine, or airship, when on the surface of the water, and when not under control, that is to say, not able to manœuvre as required by the Regulations for the Prevention of Collisions at Sea, shall carry two red lights not less than 2 metres apart one over the other, and of such a character as to be visible all around the horizon at a distance of at least 3 kilometres.

(b) The aircraft referred to in this paragraph, when not making way through the water, shall not carry the side lights, but when making way shall carry them.

6. An airship which from any cause is not under control, or which has voluntarily stopped her engines shall, in addition to the other specified lights, display conspicuously two red lights, one over the other, not less than 2 metres apart, and constructed to show a light in all directions, and of such a character as to be visible at a distance of at least 3 kilometres.

By day an airship, when being towed, which from any cause is not under control, shall display conspicuously two black balls or shapes, each 60 cms. in diameter, placed one over the other not less than 2 metres apart.

An airship moored, or under way but having voluntarily stopped its engines, shall display conspicuously by day a black ball or shape, 60 cms. in diameter, and shall be treated by other aircraft as being not under control.

7. A free balloon shall carry one bright white light below the car at a distance of not less than 5 metres, and so constructed as to show an unbroken light in all directions, and of such a character as to be visible at a distance of at least 3 kilometres.

8. A fixed balloon shall carry in the same position as the white light mentioned in paragraph 7, and in lieu of that light, three lights in a vertical line one over the other, not less than 2 metres apart. The highest and lowest of these lights shall be red, and the middle light shall be white, and they shall be of such a character as to be visible in all directions at a distance of at least 3 kilometres.

In addition, the mooring cable shall have attached to it at intervals of 300 metres, measured from the basket, groups of three lights similar to those mentioned in the preceding paragraph. In addition, the object to which the balloon is moored on the ground shall have a similar group of lights to mark its position.

By day the mooring cable shall carry in the same position as the groups of lights mentioned in the preceding paragraph, and in lieu thereof, tubular streamers not less than 20 cms. in diameter and 2 metres long, and marked with alternate bands of white and red, 50 cms. in width.

9. An airship when moored near the ground shall carry the lights specified in paragraphs 2 (a) and (e) and 3.

In addition, if moored but not near the ground, the airship, the mooring cable, and the object to which moored, shall be marked in accordance with the provisions of paragraph 8, whether by day or by night.

Sea anchors or drogues used by airships for mooring purposes at sea are exempt from this regulation.

10. A flying machine stationary upon the land or water but not anchored or moored shall carry the lights specified in paragraph 2.

11. In order to prevent collisions with surface craft:—

(a) A flying machine when at anchor or moored on the water shall carry forward, where it can best be seen, a white light, so constructed as to show an unbroken light visible all round the horizon at a distance of at least 2 kilometres.

(b) A flying machine of 50 metres or upwards in length, when at anchor or moored on the water, shall, in the forward part of the flying machine, carry one such light, and at or near the stern of the flying machine, and at a height that it shall not be less than 5 metres lower than the forward light, another such light.

The length of a flying machine shall be deemed to be the overall length.

(c) Flying machines of 50 metres or upwards in span, when at anchor or moored in the water, shall in addition carry at each lower wing tip one light as specified in (a) of this paragraph.

The span of a flying machine shall be deemed to be the maximum lateral dimension.

12. In the event of the failure of any of the lights specified under these rules to be carried by aircraft flying at night, such aircraft shall land at the first reasonably safe opportunity.

13. Nothing in these rules shall interfere with the operation of any special rules made by any State with respect to the additional station or signal lights for two or more military aircraft, or for aircraft in formation, or with the exhibition of recognition signals adopted by owners of aircraft which have been authorized by their respective Governments and duly registered and published.

SECTION II.

RULES AS TO SIGNALS

14.—(a) An aircraft wishing to land at night on aerodromes having a ground control shall before landing:—

Fire a green Very's light or flash a green lamp, and in addition shall make by international Morse code the letter-group forming its call-sign.

(b) Permission to land will be given by the repetition of the same call-sign from the ground, followed by:—

A green Very's light or flashing a green lamp.

15. The firing of a red Very's light or the display of a red flare from the ground shall be taken as an instruction that aircraft are not to land.

16. An aircraft compelled to land at night shall, before landing, fire a red Very's light or make a series of short flashes with the navigation lights.

17. When an aircraft is in distress and requires assistance, the following shall be the signals to be used or displayed, either together or separately:—

(a) The international signal, S O S, by means of visual or wireless signals.

(b) The international code flag signal of distress, indicated by NC.

(c) The distant signal, consisting of a square flag having either above or below it a ball, or anything resembling a ball.

(d) A continuous sounding with any sound apparatus.

(e) A signal, consisting of a succession of white Very's lights fired at short intervals.

18. To warn an aircraft that it is in the vicinity of a prohibited zone and should change its course, the following signals shall be used:—

(a) By day: three discharges, at intervals of 10 seconds, of a projectile showing, on bursting, white smoke, the location of the burst indicating the direction the aircraft should follow.

(b) By night: three discharges, at intervals of 10 seconds, of a projectile showing, on bursting, white stars, the location of the burst indicating the direction the aircraft should follow.

19. To require an aircraft to land, the following signals shall be used:—

(a) By day: three discharges, at intervals of 10 seconds, of a projectile showing or bursting black or yellow smoke.

(b) By night: three discharges, at intervals of 10 seconds, of a projectile showing on bursting red stars or lights.

In addition, when necessary to prevent the landing of aircraft other than the one ordered, a searchlight which shall be flashed intermittently shall be directed towards the aircraft whose landing is required.

20.—(a) In the event of fog or mist rendering aerodromes invisible, their presence may be indicated by a balloon acting as an aerial buoy and (or) other approved means.

(b) In fog, mist, falling snow or heavy rainstorm, whether by day or night, an aircraft on the water shall make the following sound signals with a sound apparatus:—

(1) If not anchored or moored, a sound at intervals of not more than two

minutes, consisting of two blasts of above five seconds' duration with an interval of about one second between them.

(2) If at anchor or moored, the rapid ringing of an efficient bell or gong for about five seconds at intervals of not more than one minute.

SECTION III.

RULES OF THE AIR

21. Flying machines shall always give way to balloons, fixed or free, and to airships. Airships shall always give way to balloons, whether fixed or free.

22. An airship, when not under its own control, shall be classed as a free balloon.

23. Risk of collision can, when circumstances permit, be ascertained by carefully watching the compass bearing and angle of elevation of an approaching aircraft. If neither the bearing nor the angle of elevation appreciably change, such risk shall be deemed to exist.

24. The term "risk of collision" shall include risk of injury due to undue proximity of other aircraft. Every aircraft that is required by these rules to give way to another to avoid collision shall keep a safe distance, having regard to the circumstances of the case.

25. While observing the rules regarding risk of collision contained in paragraph 24, a motor-driven aircraft must always manœuvre according to the rules contained in the following paragraphs as soon as it is apparent that, if it pursued its course, it would pass at a distance of less than 200 metres from any part of another aircraft.

26. When two motor-driven aircraft are meeting end on, or nearly end on, each shall alter its course to the right.

27. When two motor-driven aircraft are on courses which cross, the aircraft which has the other on its own right side shall keep out of the way of the other.

28. An aircraft overtaking any other shall keep out of the way of the overtaken aircraft by altering its own course to the right, and must not pass by diving.

Every aircraft coming up with another aircraft from any direction more than 110 degrees from ahead of the latter, *i.e.*, in such a position with reference to the aircraft which it is overtaking that at night it would be unable to see either of that aircraft's side lights, shall be deemed to be an overtaking aircraft, and no subsequent alteration of the bearing between the two aircraft shall make the overtaking aircraft a crossing aircraft within the meaning of these rules, or relieve it of the duty of keeping clear of the overtaken aircraft until it is finally past and clear.

As by day the overtaking aircraft cannot always know with certainty whether it is forward or abaft the direction mentioned above from the other aircraft, it should, if in doubt, assume that it is an overtaking aircraft and keep out of the way.

29. Where by any of these rules one of the two aircraft is to keep out of the way, the other shall keep its course and speed. When, in consequence of thick weather or other causes, the aircraft having the right of way finds itself so close that collision cannot be avoided by the action of the givingway aircraft alone, it shall take such action as will best aid to avert collision.

30. Every aircraft which is directed by these rules to keep out of the way of another aircraft shall, if the circumstances of the case admit, avoid crossing ahead of the other.

31. In following an officially recognized air route every aircraft, when

it is safe and practicable, shall keep to the right side of such route.

32. All aircraft on land or sea about to ascend shall not attempt to "take off" until there is no risk of collision with alighting aircraft.

33. Every aircraft in a cloud, fog, mist, or other conditions of bad visibility shall proceed with caution, having careful regard to the existing circumstances and conditions.

34. In obeying and construing these rules, due regard shall be had to all dangers of navigation and collision and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger.

SECTION IV.

BALLAST

35. The dropping of ballast other than fine sand or water from aircraft in the air is prohibited.

SECTION V.

RULES FOR AIR TRAFFIC ON AND IN THE VICINITY OF AERODROMES

36. At every aerodrome there shall be a flag hoisted in a prominent position which shall indicate that if an aircraft about to land or leave finds it necessary to make a circuit, or partial circuit, such circuit shall be left-handed (anti-clockwise) or right-handed (clockwise), according to the color of the flag. A white flag shall indicate a right-handed circuit, *i.e.*, that the flag is kept to the right side or side which carries the green light of the aircraft, and a red flag shall indicate a left-handed circuit, *i.e.*, that the red flag is kept to the left side or side which carries the red light of the aircraft.

37. When an airplane starts from an aerodrome it shall not turn until 500 metres distance from the nearest point of the aerodrome, and the turning then must conform with the regulations provided in the preceding paragraph.

38. All airplanes flying between 500 and 1,000 metres distance from the nearest point of an aerodrome shall conform to the above-mentioned circuit law, unless such airplanes are flying at a greater height than 2,000 metres.

39. Acrobatic landings are prohibited at aerodromes of contracting States used for international aerial traffic. Aircraft are prohibited from engaging in aerial acrobatics within a distance of at least 2,000 metres from the nearest point of such aerodromes.

40. At every recognized aerodrome the direction of the wind shall be clearly indicated by one or more of the recognized methods, *e.g.*, landing tee, conical streamer, smudge fire, &c.

41. Every airplane when taking off or alighting on a recognized aerodrome used for international air traffic shall do so up-wind, except when the natural conditions of the aerodrome do not permit.

42. In the case of airplanes approaching aerodromes for the purpose of landing, the airplanes flying at the greater height shall be responsible for avoiding the airplane at the lower height, and shall as regards landing observe the rules of paragraph 28 for passing.

43. Airplanes showing signals of distress shall be given free way in attempting to make a landing on an aerodrome.

44. Every aerodrome shall be considered to consist of three zones when looking up-wind. The right-hand zone shall be the taking-off zone, and the left-hand shall be the landing zone. Between these there shall be a neutral zone. An airplane when landing should attempt to land as near as possible