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LEGAL BASIS OF THE CIVIL AIR REGULATIONS

FRED D. FAGG, JR.*

I. INTRODUCTION

Air Commerce Act of 1926. The Civil Air Regulations, as originally published, were based upon the provisions of the Air Commerce Act of 1926. That legislation found its source of power largely in the commerce clause of the Constitution although it is quite clear that, as to choice of language to channel the authority, the framers of the legislation availed themselves of the best experience to be found in other statutes and international agreements dealing with analogous situations.¹

Scope of Federal Jurisdiction. The Civil Air Regulations do not extend the Federal jurisdiction over aeronautics beyond the interstate and foreign air commerce provisions of the basic statute. They leave more functions to the individual States than do the earlier regulations. In submitting the draft of the Air Commerce Act to Congress, the Commerce Committee of the Senate, in its report to accompany the draft, stated that intrastate flying activity was to be left to the States.² On the other hand, in its report, the House managers indicated a desire to subject all aircraft to the Federal air traffic rules.³ The early air traffic rules issued by the Secretary of Commerce followed the desires of the House managers—despite the probable lack of legal basis therefor. In the Civil Air Regulations, the scope of Federal jurisdiction has been limited to the field which can be supported on sound constitutional grounds.⁴

Civil Aeronautics Act of 1938. The safety provisions of the new Civil Aeronautics Act were written so as to codify Department of Commerce practices set up by the Civil Air Regulations. The original bills introduced during 1938, to deal with the airline problems, included only part of the safety provisions and the bills were

* Dean, School of Commerce, Northwestern University.
1. See the legislative history of the Air Commerce Act, Law Memoranda Upon Civil Aeronautics, compiled by Frederic P. Lee for the House Committee on Interstate and Foreign Commerce, 1928.
2. Ibid., p. 29.
3. Ibid., p. 60.
4. The Department of Commerce began its change of front in this regard during the summer of 1936. A memorandum to the Solicitor, prepared by Mr. Quigley of the Solicitor’s office, urged a limitation of Federal Jurisdiction in the matter of air races. The present writer prepared a supporting memorandum on the same subject which was concurred in by Col. J. H. Wigmore, Consulting Expert to the Department of Commerce.
amended so as to deal with the entire Federal field of civil aeronautics.

II. Certificate versus License

Misuse of Terms. The term license cannot be found in the Air Commerce Act of 1926 nor in any report issued by the framers of the legislation. For nearly ten years, however, the Federal regulations issued by the Secretary of Commerce used the term regularly. The framers of the statute were well aware of the CINA Convention of 1919 and employed the term certificate when dealing with aircraft airworthiness and airman competency. The persons who drafted the early regulations were probably less familiar with the international background of experience and no doubt followed the language employed in the various State statutes which had existed since 1911.

International Background. In this connection, it is interesting to note the usage in the international convention. Article 11 of the CINA Convention provides that “Every aircraft engaged in international navigation shall . . . be provided with a certificate of airworthiness . . .” The term license is not used in that article. Article 12 of the Convention provides that “The commanding officer, pilots, engineers and other members of the operating crew of every aircraft shall . . . be provided with certificates of competency and licenses . . .” To understand the differentiation, we must turn to the provisions of Annex E to the Convention. There we discover that the license includes the certificate of competency and that the latter relates solely to the flight test (for pilots) or radio test (for navigators). The license seems to issue as a result of two showings, as follows (1) a satisfactory medical examination and (2) a certificate of competency awarded upon completion of a satisfactory flight or radio examination, as the case might be.

American Statutory Usage. When the framers of the Air Commerce Act came to write those particular provisions, they decided to include the medical requirement within the meaning of the competency certificate along with the flight test requirement, and this seems eminently sound. Hence they changed (enlarged) the meaning of certificate of competency from mere proficiency in manipulating the controls of an aircraft, or using radio equipment, to fitness to perform some function with respect to aircraft—including physical and other types of fitness.

American Treaty Usage. Following close on the heels of

5. See Annex E, Ch. I, Sec. 1, par. 3.
6. See Annex E, Ch. I, Sec. 5.
the Air Commerce Act of 1926 came the Pan American Convention of 1928, signed at Havana, in which the expression *certificate of competency* only is used. In the bilateral arrangements, the term *license* seems to be used only to cover the case of aliens, as is illustrated in the recent arrangement between the United States and Canada, effective August 1, 1938.\(^7\)

**Advantage of Certificate Concept.** The wisdom of the *certificate* concept is at once apparent when one considers that the Air Commerce Act of 1926 assumes that there is a *right* to fly limited only by the fitness of the aircraft and operating personnel—in the interest of safety to those participating in aeronautics and to persons on the ground. In Section 10, the Air Commerce Act specifically declares a public right of freedom of interstate and foreign air navigation in the navigable airspace. The concept of license must always be associated with *privilege* instead of *right*, and nothing seems clearer than that neither the case law of the United States nor the Federal statute considers flight to rest on mere privilege. The critic may insist that both concepts come essentially to the same thing and that this argument possesses little merit. Let us make one simple point: If there be a *right* of flight subject only to a statutory limitation of fitness, then no over-zealous administrative officer can prevent from flying one who qualifies as fit. He may, of course, accomplish something of the same end by setting up very rigid safety standards, but the necessity for (or reasonableness of) the standard may be challenged in a court proceeding, and the officer may be compelled to issue the certificate. If flight be but a *privilege* subject to administrative control, the degree of discretion left to the administrative official is quite likely to be greater and cover more than *safety* matters—unless the administrative decision has been limited by a very detailed statutory standard. And this last possibility is the one thing that should be avoided in a field that is growing as rapidly as aviation. Further, it must be remembered that a *license* may be terminated at any time at the will of the sovereign, that there will be no recourse by way of compensation for business or property, and that "due process" has no application.

**Civil Aeronautics Act of 1938.** The first real issue, in preparing the Civil Air Regulations, involved the overthrow of ten years of faulty thinking on the part of government officials and pilots generally. The aviation public had become accustomed to the term *license* and has even yet failed to realize the legal implications—detrimental to aviation—which are associated therewith. It

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\(^7\) Executive Agreement Series No. 129, 1938.
will no doubt take several years to build up a new language tradition and usage that will accept the term *certificate* as one of aviation's legitimate children. However, the legitimizing process will no doubt be accelerated by the fact that the language of the new Civil Aeronautics Act codifies the practice of the Civil Air Regulations, and that from now on *certificate* is the only term authorized.

## III. Aircraft

### Registration:

*Bureau of Air Commerce Practice.* The second legal problem confronting those drafting the Civil Air Regulations was to clarify the Federal position with regard to aircraft registration. As a result of a conservative interpretation of the provisions of the Air Commerce Act, the Bureau practice for ten years had been to maintain two aircraft registers, one official and another not publicly recognized. The *official* register included only those aircraft which had received a certificate of airworthiness, and Section 7 of the Air Commerce Regulations\(^8\) carried this statement: "Unlicensed aircraft, though entered of record for purposes of *identification* as required by law, are not *registered* aircraft within the meaning of these regulations." In order to have an actual record of the aircraft flying above the lands and waters of the United States, the Bureau had maintained an unofficial register of *identified* (unlicensed) aircraft. This had been made possible by resort to authority granted by Paragraph (e) of Section 3 of the Air Commerce Act which authorized the Secretary to "establish air traffic rules for the . . . identification of aircraft . . ." A desire to bring some order out of this situation led to a re-examination of the legal features involved and the taking of a more bold step as to interpretation of the basic act, though the question was not finally settled until the Civil Aeronautics Act was passed.

*The International Antecedents.* When, in the CINA Convention of 1919, the contracting parties summarily ended the Fauchille arguments as to freedom of the airspace and, in Article 1, asserted that they recognized "that every power has complete and exclusive sovereignty over the airspace above its territory," it was only natural that, in Chapter II of the Convention, they should immediately concern themselves with matters of nationality determination. Annex A to the Convention provided for a certificate of registration which should, among other things, show the nationality and registration marks. To the United States of America was assigned the letter "N" as the *nationality* mark.

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The Air Commerce Act. The framers of the Air Commerce Act were not only familiar with this international background but had also enjoyed a long familiarity with the system of registration of vessels. However, in rewriting the bills in committee, the matter was inadvertently permitted to become confused and the provisions of the act are, at best, ambiguously stated. As a result, the unsatisfactory Bureau procedure above-mentioned was developed.

The Pan American (Habana) Convention. In this treaty, the United States was quite clear as to the distinction between registration and airworthiness certificates. Registration is dealt with in Articles 7-11 and airworthiness in Sections 12 and 10 (b)).

The Civil Air Regulations. The new theory adopted by the Secretary of Commerce, until again supplanted by a more conservative view, was that the certificate of registration was intended primarily for purposes of nationality determination and could be required, through the device of the identification mark, of every American aircraft entering the navigable airspace and that such certificate could be issued without regard to the airworthiness of the aircraft. Authority for its issuance was bottomed here, as in the international convention, upon the declaration of sovereignty of airspace.

Identification Mark. The way in which the desired result was accomplished was through the requirement of an identification mark. Such mark was composed of three parts, as follows: (1) The international symbol “N,” (2) The classification symbol “C,” “R,” “X” or a bar (—), and (3) a number (instead of a combination of letters as provided by the CINA Convention). Again, the power to make air traffic rules was invoked and it was provided that “no flight of aircraft shall be made . . . in the navigable airspace over the lands or waters of the United States unless such aircraft is possessed of and displays a valid identification mark assigned or approved therefor by the Secretary.”

9. For text of the treaty, see 9 J. A. L. 483 (1938).
10. Section 6.
11. This to take care of army, navy, marine corps, etc., aircraft.
12. In the course of a memorandum prepared on this subject by Col. J. H. Wigmore, appears the following: "(1) Crandall v. Nevada, 6 Wall. 35, declares that every citizen of the United States is entitled to freedom of transit from one State to another, regardless of commerce; and since registration proves United States nationality, the title to this freedom of transit can only be proved by registration. (2) The Air Commerce Act declared (Section 10) a 'public right of freedom of interstate navigation in the navigable air-space,' and this public right, accorded to citizens only, can be claimed only after registration proving nationality. (3) The Air Commerce Act requires the Secretary of Commerce to provide for 'the navigation, protection, and identification' of aircraft. Now identification must involve nationality, which is proved only by registration. (4) The Air Commerce Act (Section 11 (a) (2)) forbids any foreign aircraft to navigate in the United States. This is a fundamental basis for national defense. Now registration as a United States aircraft is the only way to detect any foreign craft that may be swarming into any part of the United States.

"It may be objected that the Air Commerce Act provides [Section 3 (a)]
The Civil Aeronautics Act. In order to clarify the law on this problem and give force to the practice first proposed by the Civil Air Regulations (before the conservative doubts went into the ascendency) the provisions of the new act were drawn up with considerable care and should keep the "registration" skeleton in the secure confines of the closet.

Aircraft Certificates:

General. International agreements and statutes deal only with aircraft airworthiness certificates. This is due to the fact that they are only concerned with those aircraft which actually enter the airspace. From an administrative standpoint, however, it is desirable for the government to provide at least two other kinds of aircraft certificate, as follows: (1) A type certificate—issued to a designer of aircraft (or component part thereof) certifying that the type (or component), as represented by authenticated data in the form of specifications, descriptions, and drawings on file in the administrative office, has been found to be suitable as a basis for the manufacture of airworthy aircraft (or component) constructed in accordance with such data, and (2) a production certificate—issued to a manufacturer certifying that he has complied with the prescribed requirements for the production of aircraft (or component part) in quantities of an exact similarity of type, structure, materials, assembly and workmanship with the specifications, descriptions and drawings forming the basis for the type certificate.

Airworthiness Certificate. The essence of the task delegated by Congress to the Secretary of Commerce was that of determining whether or not any particular aircraft presented to him for inspection was fit to fly. To determine this fact in the early days of flying might have been difficult from a technical standpoint but the uses to which aircraft were put were relatively few in number.
Hence the simple classification of aircraft by type\textsuperscript{14} rather than by flying operations engaged in\textsuperscript{15} as provided for in the Civil Air Regulations. With the rapid development of airline operations, it became important to distinguish between those aircraft which were airworthy when engaging in day-contact or night-contact flights and those engaging in instrument or over-the-top flight. Here, again the concept of certificate of airworthiness is far superior to the license (authorization) idea. The scheme provided makes sense and will appear to anyone who is interested in being practical and fair from both private and governmental standpoints. The “C” airworthiness certificate implies that the aircraft is considered airworthy for most purposes (including that of carrying persons or property, for or without hire), and the “R” certificate implies that the aircraft is airworthy for certain special purposes—exclusive of passenger carrying. The use of these letters provides a simple and practical means of public education and, hence, public safety.

Experimental Certificate. The experimental certificate, as set up in the Civil Air Regulations, was provided to give flexibility to the situation and authorize the flight of some aircraft that could not otherwise be lawfully operated within the United States. The “X” certificate was provided so that an aircraft, whose qualities of airworthiness remain unknown—as where the craft has not been test-flown (even though a complete stress analysis may have been made). Manifestly, until the craft has been successfully flown, it cannot be rated as to airworthiness. There must be some paper authorization for such test flight or flights. The “X” certificate therefore denotes only that the aircraft is rated satisfactory for purposes of experimentation in flight because inspection on the ground has disclosed no unairworthy feature with respect to structural integrity, workmanship or flight characteristics. This certainly is as far as government can go in such a situation. The experimental certificate is the nearest thing to a license that is issued, since its main purpose is to authorize one or more flights to demonstrate whether or not the aircraft is fit to receive an airworthiness certificate. Possession of such a document should satisfy the requirements of the Uniform Aeronautical Regulatory Act which requires that the aircraft be possessed of “a currently effective license issued by the Government of the United States;” but which

\textsuperscript{14} It should be noted that in the Civil Air Regulations the basic classification as to type is four-fold, as follows: (1) airplane, (2) glider, (3) rotorplane, and (4) aerostat. See CAR 01.17. A sub-classification, as to type, will be found for each major classification. See, for example, CAR 04.01 for the classification of airplanes.

\textsuperscript{15} This type of classification has been developed for the first time in the Civil Air Regulations. See, for example, CAR 01.220 for the airworthiness certificate classification adopted for airplanes, and CAR 01.221 as respects gliders.
specifically provides that the restriction shall not apply to "a non-pas-
enger carrying flight solely for inspection or test purposes au-
thorized by the (State Aeronautics Authority) to be made without
such license." Possession of such a Federal certificate might render
the local permission unnecessary. At any rate, it will go far to
uphold the uniform State provisions requiring the application of
Federal standards of fitness.

Airworthiness Standards. The minimum requirements to
be met under the classification scheme presented in CAR 01. will be
found duly spelled out in CAR 04. (Airplane Airworthiness),
CAR 05. (Glider Airworthiness), CAR 06. (Rotorplane Airworthi-
ness), and CAR 07. (Aerostat Airworthiness). The last three of
these chapters have not been issued.

The Civil Aeronautics Act. The new legislation codifies
completely the system of aircraft certificates provided for in the
Civil Air Regulations. However, some provision must be made
in or under the new law for the issuance of an airworthiness cer-
tificate for an aircraft for which a type certificate has not been
issued.

IV. AIRMEN

General. The Air Commerce Act of 1926 defines the term
airman as meaning "any individual (including the person in com-
mand and any pilot, mechanic, or member of the crew) who engages
in the navigation of aircraft while under way, and any individual
who is in charge of the inspection, overhauling, or repairing of
aircraft or of parachutes."16 In preparing the Civil Air Regu-
lations, it became necessary for the first time to provide for the rating
of air traffic controllers and airline dispatchers. Neither of those
functions was specifically mentioned in the Act but, for purposes of
the regulations, it was assumed that both the traffic controller and
the dispatcher could reasonably be included within the definition.
Whatever doubts may have existed as to the propriety of inclusion
thereunder have now been resolved satisfactorily for, in the new
Civil Aeronautics Act, the definition of airman specifically includes
the air-traffic control-tower operator and the aircraft dispatcher.17

Pilot Rating:

General Ratings. The general classification and rating of pilots
adopted by the Civil Air Regulations is based upon the number of
hours of solo flight which the pilot has made and the particular
kind of aeronautical activity for which he is deemed competent. Except for the student rating at the time it is first issued, each general rating will include an aircraft rating specifying the type, weight and engine classification of the aircraft which the pilot is deemed competent to fly and a flight area rating specifying the geographical area in which he is deemed competent to pilot aircraft. These latter ratings merely amount to the specification of the details not furnished by the general classification. The general scheme employed in the earlier Department regulations was continued except that the term Solo was substituted for Amateur and Commercial was substituted for Transport. Glider pilot ratings were continued under the same classification as had been used.

Special Ratings. The Civil Air Regulations also provided for the addition of special ratings to the general ratings previously explained. These special ratings were two in number as follows: (1) instructor and (2) instrument. The minimum requirements specified in the new regulations were but slightly different from those of the earlier regulations. Under the earlier regulations, the only provision for rating instructors was for those instructors who served in connection with the so-called “approved” schools. Also, under the earlier regulations, a differentiation was made between a “scheduled instrument rating” and a “non-scheduled instrument rating.” The former rating was issued only to pilots actually in the employ of a scheduled airline, and was considered as indicating a superior ability to fly on instruments. Such a distinction caused considerable confusion and dissatisfaction and was quite unsound since the essential significance of the instrument rating was to indicate one’s fitness to operate an aircraft under conditions of instrument flight. That question could only be answered yes or no and, if answered affirmatively, the applicant should be entitled to an instrument rating. Such was the theory of the Civil Air Regulations and this has been generally accepted as not only being legally sound but personally desirable to the various pilots throughout the country.

Student Rating. Under the previous regulations, a student was required to obtain a certificate from a medical examiner prior to manipulating the controls of aircraft in flight. The cost of such certificate was $10.00 and this charge prevented a large number of persons from finding out whether or not they would care to learn to fly. To obviate this difficulty and promote additional aviation activity, the Civil Air Regulations made it lawful for a student to fly with, and receive instructions from, a certificated flight instructor without first being possessed of a medical examination
certificate. However, the public interest was completely safeguarded by the requirement that, prior to solo flight, the student must obtain a student certificate. To get such certificate, he must have successfully passed a medical examination.

Pilot Certificate. The pilot certificate provided for in the Civil Air Regulations consisted of a single document showing the general rating together with any special rating and also showed the aircraft rating as to type, weight, and engine classification of the aircraft which the pilot was deemed competent to fly, together with a specification of the flight area within which the pilot was deemed competent to fly. Any change of rating within the life history of the certificate could be easily incorporated into such document and thus the record kept current for inspection purposes.

Airline Pilot Rating. For the convenience of the airline pilots, the requirements for their rating were set forth in a special division of the Civil Air Regulations. The general classification scheme pertaining to minimum requirements that had been employed for other pilot ratings was used in this chapter and airline pilots were also rated as to specific kinds of aircraft which they were deemed competent to fly in scheduled airline operation.

Air Traffic Controller. To provide a system of control over those persons engaged in directing air traffic in the vicinity of congested terminal areas, the device of Airport Control Tower Operator rating was set up by the Civil Air Regulations. Airport Control Tower Operators were classified as follows: (1) junior, (2) associate and (3) senior control tower operators and minimum requirements were established for each of these three classes. Any question as to the legality of such rating under the terms of the Air Commerce Act has now definitely been settled for the future by the passage of the new Civil Aeronautics Act of 1938. The new legislation provides specifically for such rating.

Airline Dispatcher. As originally proposed, the Civil Air Regulations provided for a three-fold classification of airline dispatchers as follows: (1) junior, (2) associate, and (3) senior airline dispatcher, and this basis of classification will undoubtedly be found to be desirable at some later period. However, for the present, the Regulations satisfied themselves with the establishment of a single set of minimum requirements for an airline dispatcher. Again the legality of such a rating under the terms of the Air Commerce Act of 1926 has now been settled by the passage of the Civil Aeronautics Act of 1938.

18. Part (chapter) 21.
Other Airmen Ratings. The Civil Air Regulations took over almost entirely the provisions of the earlier Department regulations with respect to (1) Ground Instructors, (2) Mechanics, and (3) Parachute Riggers. The rating of mechanics will undoubtedly be spelled out in much greater detail in the future in order to deal with the very complex situation which is developing in the field of aircraft mechanics and aircraft engine mechanics.

V. Air Navigation Facilities

Airport Rating. The Air Commerce Act of 1926 required the Secretary of Commerce to provide, by regulation, for the examination and rating of air navigation facilities available for the use of aircraft of the United States as to their suitability for such use, but the Act also provided that such rating should be made only upon the request of the owners of such air navigation facilities. Therefore, for many years it was the practice of the Bureau of Air Commerce to rate airports and landing fields only when requested to do so. As scheduled airline operations increased within the country, it became necessary, however, for the Secretary of Commerce to determine whether or not it was reasonably safe for any particular type or model of airline aircraft to land at, or take-off from, any given airport, and, if so, under what conditions such landing or take-off would be reasonably safe. The control of scheduled airline operations thus forced the Secretary of Commerce to interest himself in the rating of the large number of airports throughout the country which were regularly being utilized by the air transport companies. This practice led to the establishment of a country-wide airport rating classification system which was set up in preliminary drafts of the Civil Air Regulations. When the larger airline equipment came into use, the airline interests urged the municipalities, in the interest of safety, to enlarge the airports. The cities complied quite willingly for a time but, when the airline requests for greater space continued, the cities began to rebel. Some had borrowed to their legal limit on the solemn, if misguided, assurance that 3,500 foot runways would be entirely adequate for any aircraft needs. When told otherwise, at a later date, they were quite naturally indignant. Mail service with this larger equipment was halted by the airlines, or upon order of the government. What was needed was at least two-fold: (1) an immediate yardstick of safe performance in terms of types of aircraft and length of runway (which yardstick was simple enough to be easily understood,
and accurate enough to be considered reasonable), and (2) a forecast of runway lengths which would be adequate for future aircraft needs, to be determined, in part, by estimated aircraft performance. The government position was clear. It did not intend to dictate to any municipality as to what kind of an airport it should have. Its only function was to determine whether or not any particular equipment could be safely operated in scheduled service to and from a given airport. The city was, therefore, the sole judge of whether it wanted Queen Mary or rowboat service. Legally, such a position seemed eminently sound. The subject matter of these airport regulations had been complicated by so many difficult elements that no official regulations in this field have yet been issued.20 Until the Civil Aeronautics Authority has completed its national airport survey, it is probable that it will not issue the airport rating chapter.

Other Facilities. While provision has been made in the classification scheme of the Civil Air Regulations for regulations dealing with other air navigation facilities, none have yet been issued.

VI. AIR CARRIER OPERATION

Scheduled Airline Certificate:

Air Commerce Act. The Air Commerce Act of 1926, as originally passed, contained no provisions specifically providing for the issuance of an airline competency certificate. The only possible authorization for such a certificate, prior to amendment of the Act, existed in the rather general authorization given to the Secretary of Commerce to issue “such other certificates as the Secretary of Commerce deems necessary in administering the functions vested in him under this Act,”21 or in that part of the Act which authorized the Secretary of Commerce, in blanket fashion, “to make such regulations as are necessary to execute the functions vested in him by this Act.”22 When the Act was originally passed, the framers were concerned only with aircraft airworthiness certificates and airmen certificates. On June 19, 1934, an amendment to the Air Commerce Act was approved which provided specifically for the issuance of an airline certificate by the Secretary of Commerce to any person (airline) which passed a satisfactory examination given by such Secretary in order to determine his (its) fitness. Prior to the issuance of the Civil Air Regulations in 1937, no airline certificate

21. Section 8 (f).
22. Section 8.
was issued by the Secretary of Commerce. Instead, for a long period of years, the device of an informal *letter of authority* was issued to those scheduled airlines which were rated as competent by the Secretary. The theory adopted seems clearly to have followed from the concept of *license* and so the document issued by the Secretary was construed to be an *authorization* to the individual company to carry on its operations. In granting this *permit* the Secretary frequently included terms of limitation with respect to the operation which appeared to him to be necessary in the interest of safety. These letters of authority were most informal in nature and were frequently to be found in the correspondence (including telegrams) between the government and the airlines. In some cases, the authorization consisted of a mere handful of words in effect authorizing the applicant to *run an airline*.

**Scheduled Airline Competency Certificate.** The Civil Air Regulations immediately terminated the license concept and substituted therefor the airline certificate of competency. Under this theory, an applicant was prima facie entitled to operate an airline in interstate or foreign air commerce if he could demonstrate his ability to meet the minimum safety standards set up by the Secretary of Commerce for such operation. The approach of the new Regulations was through the establishment of a reasonable set of minimum requirements for scheduled airline operations and attention was given to the classification of such minimum requirements into a practicable system. An applicant who desired to carry *passengers* in scheduled air transportation was required to show: (1) evidence of sufficient financial strength as to enable him to conduct his operations with safety for a period of at least one year; (2) a route properly equipped with air navigation facilities requisite to the type of service proposed; (3) proper and sufficient aircraft; (4) qualified airmen; (5) schedules established with regard to safe operation; and (6) operations and maintenance manuals containing the material and procedures deemed necessary for safe operation. In each case the applicant was required to show the kind of carrier operations he proposed to engage in—whether (1) visual-contact day, (2) visual-contact night, or (3) instrument or over-the-top operations. When such applicant had reasonably demonstrated his fitness for such carrier operations, the Secretary then issued to him a *certificate*, together with several appended documents (*letters of competency*) which were considered legally a part of such certificate and which specified in considerable detail the individual elements of operation for which said operator was deemed fit. In these appended letters of competency, there were specified the particular details with re-
spect to (1) service, (2) route, (3) aircraft, (4) maintenance, (5)) airmen and (6) weather, affecting the airline operations. The intention of the Regulations was to provide a simple and flexible scheme which would meet both the needs of Government and the airlines and permit amendment from time to time as the rapid change of the business required. Again let it be repeated that the theory was not that Government granted a privilege to an operator but rather that the Government took the position that an operator was entitled to engage in any kind of airline operation for which he could demonstrate fitness. The applicant who proposed to carry goods only could qualify under a less rigid set of minimum requirements.23

Airlines in Foreign Commerce. CAR 41 (which has not been issued) was scheduled to establish the minimum requirements and certificate procedure for American flag airlines going outside the Continental limits of the United States. There seems to be no question of jurisdiction over such airline operations—within or without the three-mile limit—but obvious differences in operating technique made necessary because of a lack of ground aids (or the existence of a different type of such aids) and the problems of over-water flying etc., made it desirable to prepare these regulations with considerable care, in the light of our best experience. Foreign flag airlines were to be covered in CAR 45. The operating regulations of these carriers, as distinguished from the certificating chapters, were to appear as CAR 71 and CAR 66, respectively.

CAR 40 and CAR 61. CAR 40 sets up the minimum requirements for a scheduled interstate airline competency certificate and establishes the procedure by which the certificate and its component letters of competency may be secured, whereas CAR 61 sets up the regulations under which such airline is operated after it has secured such certificate. For some time it was urged that these two chapters be combined but the merits of separating them finally became so apparent that they were issued as two distinct chapters of the Civil Air Regulations. The provisions found in CAR 61 were in the main revisions of the old Aeronautics Bulletin No. 7-E, prepared by Major R. W. Schroeder and Denis Mulligan of the Bureau staff. Bulletin No. 7-E represents a landmark in the field of airline regulations and the new Civil Air Regulations chapters pertaining to airlines owe a great deal to its authors.

23. CAR 40.3.
VII. AIR TRAFFIC RULES

General. The early air traffic rules were designed to cover visual-contact flight and, as additional navigation instruments were designed and as technical skill progressed to make instrument flight possible, there arose a need for additional rules to safeguard this type of operation. *Inter-airline agreements* were drawn up, with the assistance of the Department of Commerce, to prevent collisions and these *gentlemen’s agreements* served an important part in promoting safety. The inherent weakness of the device was that the itinerant aircraft, civil or military, was not aware of these agreements or could not be counted on to observe them. The collision hazard continued until the situation became intolerable. Several near accidents were observed when passenger airline aircraft nearly ran into formation, and other flights of military aircraft. The draftsmen of the Civil Air Regulations, therefore, inherited a very perplexing problem which had been forced upon everyone in aviation by its own technical advance. And, if then, the Civil Air Regulations seem complicated in this respect, it is at least in part due to the fact that—whether we like it or not—flying has become complicated.

Jurisdiction. The early air traffic rules consisted of a carefully drafted set of sensible regulations which purported to be applicable to all aircraft (wherever flying) within the United States. But the legal theory implicit in the Civil Air Regulations is that Federal jurisdiction extends only to interstate (and foreign) commerce. It assumes that, in this respect, the framers of the Air Commerce Act were somewhat guilty of wishful thinking (in their statements relative to traffic rules) and that, in preparing the new regulations, it would be wise to follow a course that seemed certain to have Constitutional support. The draftsmen, therefore, proceeded with caution into any field that might seem to be subject to State jurisdiction, yet did not hesitate to subject intrastate activity to control when that activity could be reasonably said to constitute a burden on interstate commerce, or a danger to it.

Civil Airway Designation:

*The Air Commerce Act*. As defined in the Air Commerce Act, civil airway meant "a route in the navigable airspace designated by the Secretary of Commerce as a *route suitable for interstate or foreign air commerce.*"\(^24\) The Act authorizes the Secretary to designate and establish civil airways and to provide air navigation facilities along such airways.\(^25\)

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\(^24\) Section 9 (f).
\(^25\) Section 5 (b).
The types of physical facilities which have been furnished by the Federal Government as an aid to aeronautical activity, and which serve in part to determine the location of an airway, are of several types and will include the following:

1. Emergency landing fields—for all types of operation.
2. Light beacons—for visual-contact night operation.
4. Radio markers—for instrument operation.
5. Cone of silence markers—for instrument operation.

Informal Airway Designation: The Secretary of Commerce commenced the establishment of airway aids immediately after the passage of the Act but did not attempt any formal (legal) designation of civil airways until July 7, 1936—ten years after the Act was passed. To understand the reason for his inaction, we must consider the history of air navigation facility development and utilization. When the air mail system was instituted, the first step taken was the provision of intermediate landing fields for use in case of motor failure or other emergency, and a line traced from one emergency field to another between terminal points would serve

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26. There are other services performed for the aviator besides the mere physical facilities established and maintained by the Federal Government. The first step to be taken in locating a civil airway is the making of a route survey (in the air and on the ground) in order to determine the most favorable terrain over which to fly. To accomplish this purpose, it is necessary to find an area which offers the greatest number of natural emergency landing fields (in the shape of level farm land, cow pastures, etc.), and which offers the best percentage of good flying weather. And, when an airway has been selected, it is of course necessary to have accurate maps—which have been designed for aviation use—available.

27. The light beacon structure is frequently used as a check point for visual-contact day flying, although the usage at present is largely confined to itinerant aircraft not equipped with apparatus for receiving radio range signals.

28. These beacons are used also for flights made under visual-contact flight conditions—particularly by the scheduled airlines. As more aircraft are being equipped with radio apparatus, the usefulness of this type of facility increases.

29. This is the so-called fan-type marker and is used to identify a position on a civil airway. Emitting a radio wave that goes out in the form of a fan or screen, it serves to mark the boundary of a control zone of intersection, a point of fix on an airway, or to otherwise aid an aircraft in determining its exact position. For studies on this type of facility, see Bureau of Air Commerce Safety and Planning Division Report No. 5, "Report on the Development of Fan Type Ultra-High Frequency Radio Markers as a Traffic Control and Let-Down Aid," by Henry I. Metz (January, 1938); Report No. 14, "The Development of Improved Ultra-High Frequency Radio Fan Marker," by P. D. McKeel, J. M. Les, and H. I. Metz (July, 1938); and Report No. 17, "Tests of the First Manufactured Fan Marker," by W. E. Jackson, P. D. McKeel, and H. I. Metz (July, 1938).

30. The positive cone of silence marker represents a distinct advance in aids to safe navigation and is particularly useful in the working of an orientational aid. For studies on this facility, see Bureau of Air Commerce Safety and Planning Division Report No. 8, "Report on Cone Silence Tests at Knoxville, Tennessee," by D. M. Stuart (April, 1938); and Report No. 16, "The Development, Adjustment, and Application of the Z Marker," by W. E. Jackson and H. I. Metz (July, 1938).

to locate the civil airway. So long as visual-contact day flight was engaged in, there probably was no need (from a flyer's viewpoint) for any more formal airway designation. Visual-contact night operation depended upon the establishment of light beacons and the civil airways could then be more accurately identified by reference to these new beacons (patterned after and first installed by the marine lighthouse service) which was located every few miles along the airway.

While there was still no formal designation of civil airways, the result (from a flyer's viewpoint) was quite satisfactory. Collision hazards were to be avoided by simple right-side traffic rules, and the center of the airway was to be identified by reference to the light beacons (also marked for day-contact operation). In general, the light beacons followed the course of the emergency fields and so no confusion resulted. Then came demand for instrument operation and the provision of numerous radio ranges made such operation possible. For the first time, a real problem arose. Radio range courses could not be projected in such a way as to follow curves and twists in the terrain. Instead, despite all their eccentricities as to swinging, multiple courses, etc., they were projected essentially in straight lines. Immediately, therefore, the problem was presented: which airway aids determined the civil airway—the string of emergency fields, the line of light beacons, or the radio range courses? Formal designation of civil airways now became necessary.

Formal Airway Designation. In attempting to make formal compliance with the provisions of the Air Commerce Act when finally forced to do so by the intricacies of instrument flight, the Secretary chose a strip of land fifty miles in width to identify the civil airways designated. Such a width was thought sufficient to include within its path, all three types of aids—fields, light beacons and radio ranges. When the civil airways were narrowed to twenty miles, the problem of designation became more difficult. The method finally adopted was to start with the airspace located vertically above an area lying within a twenty-mile circle (ten mile radius) at each terminal, intermediate, or other specified point along the route, together with the area lying within the parallel lines (20 miles apart) connecting each of the above points. Where necessary, the radio range courses were shifted so that they were projected down the center line of such airway.

Designation System. Since the very essence of the air traffic rules relates to flight conduct on the civil airways, the regulations issued by the Secretary of Commerce designating such airways are
included in those rules. And, for purposes of establishing an air traffic procedure which would reduce the collision hazard, civil airways were classified (further designated) as follows:

1. Green airways—the main east and west trunk lines.
2. Amber airways—the main north and south trunk lines.
4. Blue airways—tertiary, connecting airways.

Civil Aeronautics Act of 1938. Under the terms of the new law, the Administrator is empowered to designate and establish civil airways, but this legislation spells out in greater detail the method by which airways shall be designated and established.

Control Airport Designation. In order to prescribe a system of air traffic regulation with reference to activities in and around the most congested air terminals which would provide for the safety of aircraft moving in interstate or foreign air commerce, a selected number of airports were designated as control airports, and control zones were designated and defined in connection with these airports.

Control Zone of Intersection Designation. Similarly, in order to protect aircraft moving in interstate or foreign air commerce, it was necessary to designate certain control zones of intersection—those areas within which civil airways intersected and within which accordingly a considerable collision hazard existed. The center of such zone is represented either by (1) the radio range station located at an intersection of airways, or (2) the center of the intersection of the “on course” radio range signals projected down intersecting airways, or (3) the center of an “on course” signal projected down an airway, at a point designated by the Secretary. The control zone of intersection is the airspace above an area within a circle with a radius of 25 miles drawn from the center of such zone, whereas a control zone is the airspace above an area within a circle with a radius of 3 miles drawn from the center of a control airport. For purposes of determining the flight procedure and priorities, there was an additional classification and designation of green, amber, and red control zones of intersection.

Radio Fix Designation. For the same purpose of protecting interstate and foreign aircraft movements, it was necessary to designate certain radio fixes—a fix being a geographical location on a civil airway above which the position of an aircraft in flight can be accurately determined by means of radio only.

Flight on Civil Airways. Just as land or water traffic tends
to move along certain well-defined highways or sea-lanes, so also
does air traffic tend to follow the most favorable air lanes. These
lanes have been officially designated as the *preferred channels* for
the flow of interstate and foreign air commerce. They were selected
with due regard to their suitability for such air commerce and they
have been implemented with various air navigation facilities to
make their use more safe. The aviation public has been notified
of their existence and has been invited to utilize them. During good
weather they will normally be used because they offer the *best* means
for safe travel; during bad weather, they *must* be used because they
offer the *only* practical means of safe travel. The Federal Govern-
ment would, therefore, be extremely unmindful of its responsibility
if it did not provide necessary regulations for the use of such civil
airways. With respect to these airways, its powers are supreme.
State rights must yield to the paramount requirements of interstate
and foreign air commerce. As an exercise of its power in this
direction, bottomed upon the reasonable necessities of protecting
interstate and foreign air movements, the Civil Air Regulations
require that any person\(^\text{84}\) or aircraft\(^\text{85}\) engaged in flight within the
limits of a civil airway (even though flying between strictly intra-
state points) shall be possessed of a currently effective pilot cer-
tificate of competency and aircraft certificate. Any other course of
action would be courting disaster. But this advanced step was
not taken until the Civil Air Regulations were adopted. And the
step was taken only in the light of the plain terms of recent rulings
of the Federal Supreme Court.

**Flight Elsewhere Than on Civil Airways.** While the normal
movement of interstate and foreign air commerce will be channeled
within the geographical limits of the civil airways, it is quite pos-
sible (particularly during periods of good weather) to engage in
such flights without such limits. For the protection of other such
movements, the Civil Air Regulations require the possession of a
currently effective pilot and aircraft certificate by all persons and
aircraft engaging in such interstate or foreign air commerce. The
Federal Government does not attempt to require such certificates
of persons not engaged in such activity, although it may subject
them to certain air traffic rules which are necessary for the pro-
tection of interstate and foreign movements. It leaves entirely to
the States, the certification of persons and aircraft engaged in
*intrastate* activities. Whenever the interstate movements on off-
airway flights become sufficiently numerous, or the hazards thereto

\(^\text{84}\) Exceptions as to aliens are, of course, provided.

\(^\text{85}\) Exceptions are provided for.
sufficiently great, it is always possible to designate a new civil air-
way and thus afford adequate protection without concern as to jurisdic-
tion. However, any attempt to designate the entire area of the continental United States as a civil airway would no doubt meet with failure in the courts as lacking necessary Constitutional support. The reasonable necessities of interstate and foreign air commerce will continue to set the limits to proper Federal control.

Contact Flight Rules. The air traffic rules relating to contact flight involve very few legal matters. The basic idea has been to permit the widest latitude, consistent with safe flying practice, to persons making flights wherein the altitude of the aircraft and its flight path can at all times be controlled by means of visual reference to the ground or water. The provisions with respect to weather minimums are based upon safe flying practice and have been quite generally accepted as reasonable.

Instrument Flight Rules. For this type of flight, the air traffic rules must necessarily be more stringent. Again, the theory has been to provide a practicable scheme of traffic control which can be readily understood, easily complied with, and which is the minimum of regulation for the type of flying engaged in. Flight altitudes must be carefully prescribed, and somewhat elaborate procedures developed to prevent collisions on the airways and, particularly, at the terminals. When the airways have been completely equipped with radio range courses, fan-type markers, positive cone of silence markers, and instrument approach systems, the procedure may be changed and simplified. Until that time, the present procedure will serve as the only adequate protection to instrument flight operations.

Air Meet Rules. The Civil Air Regulations leave all local air meet matters to the States, unless such meet is to be held on a civil airway or will endanger aircraft moving in interstate or foreign air commerce. The Federal Government has rightfully limited its jurisdiction to federal matters.

Certificate of Non-Application. Under the earlier air traffic rules, waivers were granted to particular individuals which in effect gave them permission to do certain things despite the prohibition of the general regulations. This waiver practice was believed to be legally unsound. The Supreme Court rulings had made it clear that a law, being a law, must be general in its terms, equally binding upon all persons under similar circumstances; and hence, that no administrative officer can exempt an individual citizen from obeying the general law. And, of course, the same principle applied to general regulations. Hence, the old practice of issuing a “waiver,” i.e., of
exempting an individual from obeying a law was legally unsafe. The practice was full of risk to the regulations, because it was often necessary to impose penalties for violation of regulations, and the practice of "waivers" was thus likely to lead to judicial rulings declaring them void. In the re-drafting of the regulations, it was necessary to avoid this legal risk, and yet it was equally necessary to give some flexibility to certain traffic regulations. The remedy taken was to re-word such regulations so as to make them applicable only in certain classes of circumstances, and then to authorize the administrative officer to declare that the one or another set of circumstances existed; thus making the regulation applicable or not. Henceforth, whenever the public safety, the safety of those engaged in aeronautics or the interests of sound fostering and promotion of aeronautics is deemed by the Federal authority to require that these general air traffic rules, or any special rule, should not apply, or were never intended to apply, to the given situation, the Federal authority shall evidence such situation by a certificate setting forth in considerable detail the conditions under which the certificate will operate. The underlying theory is based upon the fact that the general rules were never intended (or are not now intended) to prevent this particular activity but that it was (or is) too difficult to spell out, in the air traffic rules, all the particular situations to which they would (or do) not apply. In legal effect, then, this is not permitting one person to do an act which is prohibited (by the rules) to all persons (including the person now exempted), but is instead stating that the general prohibition directed against a particular act or activity was (or is) not intended, by the Federal authority issuing such rules, to apply to persons who could (or can) meet specified requirements or to acts or activities when conducted in some specified manner—insuring, with reasonableness, the safety or general good of aeronautics. While the result may be much the same, there is an essential legal difference between the waiver and non-application certificate approach.

**General.** For ready reference and use of the pilot, the air traffic rules include, as appendix material, (1) a list of Federal airspace reservations, (2) a list of State airspace reservations—(if any are established), (3) a list of areas restricted by other Federal agencies, (4) a list of Federal traffic control stations, and (5) one special air traffic rule relating to the downtown district of Washington, D. C. (and which should have been issued by an Executive Order providing for an airspace reservation and so included in the first appendix).
Civil Aeronautics Act. The provisions of the new law, with respect to air traffic rules, follow those of the Air Commerce Act of 1926.

VIII. PROCEDURAL AND MISCELLANEOUS CHAPTERS

Air Mail. These provisions related to the duties of the Secretary of Commerce under the provisions of the Air Mail Act of 1934, and dealt with the method by which the Secretary would comply with such provisions. This chapter is now rendered obsolete by the new legislation.

Aircraft Accident Investigations. The Civil Air Regulations codify the practice set up by the Secretary of Commerce, after March 1, 1937, whereby one or more persons not in the employ of the Department of Commerce, was appointed to serve as a member of the accident investigation board. This gave added assurance to the public of unbiased findings as to the cause of aircraft accidents. The Civil Aeronautics Act further codified the essential elements of this procedure by establishing an Air Safety Board to investigate accidents and report thereon and make recommendations with respect thereto.

Hearings Upon Certificates. This represents the first attempt to publish any procedural matters affecting civil aviation. It served a long felt want, but involves no new legal principles. It is, however, carefully drafted to meet the requirement of recent Supreme Court decisions and, in this respect, is in notable contrast with the practice of some other administrative agencies.

Penalties. The provisions of the Commerce Act with respect to penalties were assembled, classified, and republished for availability to all persons concerned. A separate chapter detailed the procedure incident to the imposition, remission, and mitigation of penalties. This procedure and that for certificate hearings provided for a full and fair hearing.

Authorization to Act. The intent of this Chapter was to provide by regulation, for the delegation by the Secretary of Commerce of authority to act for him in certain specified cases, and with respect to certain documents which issued from the Federal Government. It was intended to serve the needs of the Department of Commerce in giving authority to certain persons and set up the limits of such authority, and also to serve the public need by giving notice of such delegation of authority.

Definitions. In this chapter could be found the general glossary of all technical terms used in the Civil Air Regulations and
given some special meaning therein. Individual definitions, appertaining to a given chapter, could be found in such chapter. Hence, they were gathered together, for reference purposes, into a single convenient source.

**Mode of Citing Regulations.** As the Civil Air Regulations adopt the decimal system, for convenient reference and easy citation, it was believed desirable to spell out in considerable detail the exact method of citation utilized within the Regulations themselves. This was done with particular thought of controverted situations that might arise in course of litigation and not be immediately clear to counsel or to a court.