

1935

Federal Aviation Commission Recommendations

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Recommended Citation

Franklin D. Roosevelt, *Federal Aviation Commission Recommendations*, 6 J. AIR L. & COM. 163 (1935)
<https://scholar.smu.edu/jalc/vol6/iss2/2>

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THE JOURNAL OF AIR LAW

Volume VI

APRIL, 1935

Number 2

FEDERAL AVIATION COMMISSION RECOMMENDATIONS*

LETTER OF TRANSMITTAL

TO THE CONGRESS OF THE UNITED STATES:

I AM SUBMITTING HERewith the report of the Federal Aviation Commission appointed by me last summer by direction of the Seventy-third Congress. The commission has made a diligent study of the broad subject of aviation conditions here and elsewhere and emphasizes the excellent American progress in this new form of transportation. The commission has also studied problems of national defense, of procurement policies and of the extension of air transport services. I invite your attention to these comprehensive surveys.

As I have suggested on many occasions, it becomes more and more apparent that the Government of the United States should bring about a consolidation of its methods of supervision over all forms of transportation. When the Interstate Commerce Commission was created in 1887 the railroad was practically the principal method of rapid interstate transportation. Since that time this monopoly of transportation enjoyed by the railroad, to a very important degree, has been limited by the development of the automobile and good interstate roads. Recently water transportation by lake, river, by canal and by oceans has, largely through the construction of the Panama Canal and our inland waterways, definitely brought ships and shipping into the general interstate field. More recently still air transportation has become an element. All of these developments have changed the general problem of transportation and the concern of the Government with them. A number of valuable reports have been prepared on these related questions. The report of the Federal Coordinator of Transportation has already been submitted to the Congress by the Interstate Commerce Commission. The report deals with the many problems relating to buses, trucks, water carriers and railroads. Other reports of departmental committees on ocean mail subsidies have been completed. This present report on aviation is a similar source of information and advice concerning trans-

*Part of the Report prepared and submitted, on January 31, 1935, in accordance with the Act of Congress of June 12, 1934. (See 5 JOURNAL OF AIR LAW 462). The Commission membership included: Clark Howell, *Chairman*, Edward P. Warner, *Vice-Chairman*, Albert J. Berres, Jerome C. Hunsaker, and Franklin K. Lane, Jr. Col. J. Carroll Cone served as Executive Secretary. (See 5 JOURNAL OF AIR LAW 449, 637). The complete report may be had from the Government Printing Office for twenty cents.

portation by air. I earnestly suggest that the Congress consider these various reports together in the light of the necessity for the development of interrelated planning of our national transportation. At a later date I shall ask the Congress for general legislation centralizing the supervision of air and water and highway transportation with adjustments of our present methods of organization in order to meet new and additional responsibilities.

There are detailed questions, however, that require early action. Our extended mail contracts with air lines expire on or about March first and existing legislation dealing with primary and secondary routes should be revised before that time. The commission suggests that the Interstate Commerce Commission be given temporarily the power to lower or increase air mail rates as warranted in their judgment after full investigation. The purpose of this is to prevent the destruction of any efficiently operated part of the present system pending suitable consideration by the Congress of what permanent measures should be taken and what amendment, if any, the present general transportation policy of the Government should undergo. I concur in this recommendation of the Federal Aviation Commission provided always that the grant of this duty to the Interstate Commerce Commission be subject to provisions against unreasonable profits by any private carrier. On account of the fact that an essential objective during this temporary period is to provide for the continuation of efficiently operated companies and to guard against their destruction, it is only fair to suggest that during this period any profits at all by such companies should be a secondary consideration. Government aid in this case is legitimate in order to save companies from disastrous loss but not in order to provide profits.

The commission further recommends the creation of a temporary Air Commerce Commission. In this recommendation I am unable to concur. I believe that we should avoid the multiplication of separate regulatory agencies in the field of transportation. Therefore in the interim before a permanent consolidated agency is created or designated over transportation as a whole, a division of the Interstate Commerce Commission can well serve the needs of air transportation. In the granting of powers and duties by the Congress orderly government calls for the administration of executive functions by those administrative departments or agencies which have functioned satisfactorily in the past and, on the other hand, calls for the vesting of judicial functions in agencies already accustomed to such powers. It is this principle that should be followed in all of the various aspects of transportation legislation.

FRANKLIN D. ROOSEVELT.

THE WHITE HOUSE,
January 31, 1935.

RECOMMENDATIONS

Air Transport:

(1) It should be the policy of the United States to maintain a position of world leadership in air transport, and to lend such aid as may be necessary to insure that the most modern and efficient equipment and methods shall be applied on American domestic and foreign airlines.

(2) There should be no legal limitation upon the growth of air transport.

(3) The carriage of mail should be put on a commercial basis, with payments to lines within the amount received by the Post Office. Whatever additional sums are for the time being necessary to maintain and develop adequate transport services should be allocated specifically to that purpose by the government.

(4) There should be a close and continuous governmental control of the financial aid having to be given to airlines. Certificates of convenience and necessity should be issued under proper safeguards and specifications. Provision should be made to specify a minimum quality of service and a minimum frequency of schedule on airlines. Rates of fare should be subject to governmental approval, and the financial structure of airlines should be supervised and their general conformity with the letter and spirit of the law watched over by appropriate governmental agencies. For these purposes we suggest the creation of a nonpartisan commission, described in detail in another section of our report.

(5) All regular domestic scheduled transport operations should require a certificate of convenience and necessity, to be issued by the commission hereinafter proposed. Such certificates should not be cancelled except for good cause without equitable compensation to the holder.

(6) Direct Federal aid should not as a matter of course be extended to all airlines having certificates of convenience and necessity, but only to such airlines as are deserving of such aid in the public interest.

(7) Every airline operating on December 1, 1934, should be considered to have a presumptive right to the receipt of a certificate of convenience and necessity.

(8) The development of new airways and the provision of navigation facilities thereon should be a responsibility of the Department of Commerce, subject to commission approval.

(9) It should be the general policy to preserve competition in the interest of improved service and technological development, while avoiding uneconomical paralleling of routes or duplication of facilities.

(10) The Post Office Department should be free to use any service that exists, without being limited by specific contracts.

(11) The rates to be paid by the Post Office Department to airlines carrying mail should be fixed by the commission hereinafter proposed.

(12) The direct financial aid given to airlines should be under the constant control of the commission, and subject at all times to revision as technical improvement, changes in operating conditions, or the needs of the particular territory served may require. The formulas under which aid is extended should be such as to encourage good management and technical progress, and to stimulate rapid evolution towards complete self-support and independence of direct governmental aid.

(13) The control of a multiplicity of airlines through holding

companies should be prohibited. The ownership of stock in airlines by corporations engaged in other activities, or the interlocking of diverse aeronautical interests, should be strictly controlled by the commission hereinafter proposed. Nothing should be permitted which would in any way reduce the effectiveness of any competition, the preservation of which could serve the public interest, or which would interfere with the exercise of the government's regulatory functions. Subject to these paramount considerations, the door should be left open as far as possible for a free flow of investment capital into air transportation in the interest of a strengthening of its structure and an improvement of its facilities.

(14) Airlines should be made eligible, as railroads now are, for loans from the Reconstruction Finance Corporation upon suitable security.

(15) In connection with the placing of the carriage of air mail upon a strictly commercial basis, involving no net financial burden upon the Post Office Department, there should be authorization for experiments with special classes of light-weight air mail matter carried at a low rate, in the interest of an increase of the total volume of air mail and the gross receipts of the service.

(16) It should be a duty of the commission hereinafter proposed to require periodic financial and operating reports from all airlines, to examine into their status at suitable intervals, and to make public record of such reports.

(17) It should be the policy of the commission herein proposed to subscribe to the principles contained in Section 7 (a) of the National Industrial Recovery Act, and to foster adherence thereto, in all branches and activities of air transport; and to use its influence to bring together employers and the duly chosen representatives of their own choosing of the several crafts and callings with a view to agreeing upon a method of procedure to be followed in the handling and adjustment of all questions involving wages, hours, and conditions of employment.

(18) The control, in the interest of public safety, of the minimum standards of equipment and the operating methods and organizations and ground facilities of civil aeronautics should continue approximately as at present, but under the jurisdiction of the proposed commission.

(19) There should be no attempt to require the inclusion of military features in the design or equipment of transport airplanes.

(20) Air transport in American territories and possessions should be developed, and in particular there should be an increase of air transport service and ground facilities available for air navigation in Alaska.

(21) The national policy of stimulating air transport should extend to the promotion of American-flag airlines connecting the United States with our territories overseas and serving our major trade routes to foreign countries. The time has now come when air transport can be regarded on a world-wide basis, and in particular when the early inauguration of regular trans-oceanic services by aircraft can be foreseen.

(22) The Secretary of Commerce should study ways and means

to foster American airlines to foreign countries and recommend to the Congress, from time to time, legislation governing the extension of financial aid. Consideration should be given to the nature of similar aid given the merchant marine, with a view to developing a coordinated policy.

(23) The policy of making available for the carriage of mail all American airlines rendering regular service, and of payment by the Post Office Department to the airlines only for service rendered, should be extended to future arrangements for foreign airlines. The rates of payment to the airlines for the carriage of mail should be fixed by the commission hereinafter proposed, and such additional aid as may be necessary to build up and maintain a proper service under the American flag outside of the boundaries of the United States should be allocated by the commission.

(24) No changes should henceforth be made in the existing foreign air mail contracts except with the approval of the commission hereinafter proposed.

(25) The governmental administration of foreign air transport should as far as possible be kept similar to that of the domestic airline system, but with such modifications as may be clearly necessitated by a fundamentally different political, legal, and operating status. The status of American air transport in foreign fields competing with foreign-owned airlines should in general not be one of competition between American lines, but of carefully-controlled regional monopoly. The general powers of the commission hereinafter proposed in connection with foreign air transport should be essentially similar to those which it enjoys in the domestic field, and the commission should have the additional power of stipulating for fixed periods certain minimum and maximum conditions of service and of governmental aid in the interest of stability of the undertaking and of encouragement of large investment in ground facilities.

(26) The policy of the United States should be to support and assist American airlines in their relations with foreign governments and with foreign competitors. It should be considered as in the public interest to regulate and control foreign airlines entering the United States with the purpose of securing for American airlines equality of opportunity in foreign countries.

(27) It should be provided by legislation that American airlines outside the continental United States should have the same opportunity now given by the Shipping Act to American steamship lines to enter into trade and traffic agreements with their competitors. Such agreements should be subject to approval by the commission hereinafter proposed.

(28) The existing regulations for customs clearance, immigration, and public health clearance should undergo early revision and the greatest possible measure of simplification to meet the special problems of aircraft operation in international service.

(29) As a measure of immediate emergency, the present Air Mail Act (Public 308, 73rd Congress) should be amended so as to empower the Interstate Commerce Commission to revise existing air mail rates

either upward or downward as the facts may warrant, and subject to such revision existing contracts should continue in force until such date as the commission hereinafter proposed, in the exercise of its full powers and duties, may prescribe.

(30) As a measure of immediate emergency, the provisions of the present Air Mail Act (Public 308, 73rd Congress) regarding the designation of primary and secondary routes, and the prohibition of an airline from holding more than one primary and two secondary route contracts, should be amended so as to postpone their effective date to January 1, 1936.

Miscellaneous Civil Aviation:

(31) It should be the policy of the government to impose a minimum of regulation upon private flying, and to determine that minimum with reference to public safety alone. The technical regulation of aircraft and personnel engaged in commercial activities should remain substantially as at present.

(32) In the interest of improved utility and increased safety of aircraft suitable for private use, and to extend the scope of the ownership and operation of aircraft by private individuals, the Department of Commerce should be authorized to make experimental purchases by negotiation of aircraft or other aeronautical equipment seeming to promise special advantages to civil aviation and not likely to be promptly developed otherwise, and to pay substantially the full development cost therefor. Such purchases should have the prior approval of the National Advisory Committee for Aeronautics.

(33) The National Advisory Committee for Aeronautics should give the development of those qualities in aircraft which render them particularly suitable for private operation an enlarged place on its program of research, and should cooperate with the Department of Commerce in determining the qualities and performance of aircraft of new types which may be offered for consideration.

(34) There should be a general survey of governmental mapping projects and other undertakings requiring the observation of wide areas to determine the extent to which aerial survey or observation can profitably be used. Where such work is economically advantageous it should be done by contract by commercial aircraft operators wherever reasonable bids can be obtained.

(35) Fixed-base aircraft operators, maintaining schools, service stations, and charter services, should be made eligible for Reconstruction Finance Corporation loans upon proper security, in the same way as manufacturing industries and railroads are already eligible.

(36) The usefulness of gliding and soaring flights in the promotion of aeronautics, and in the aeronautical activities of the various departments of government, should be carefully studied. In particular, the authorities charged with the technical regulation of aircraft should give special consideration to glider problems and to means of simplifying the formalities connected with glider control and licensing.

Airports:

(37) The installation of lights and other navigational aids should be undertaken by the Department of Commerce at airports designated by the commission hereinafter proposed as forming effective elements in a national airport system. The cost of maintenance of such lighting equipment, or of that already installed by local enterprise when designated by the commission, should be shared between the Federal Government and the appropriate local agency.

(38) It should be the policy of the Federal agencies concerned to provide airports and glider sites in or adjacent to recreational areas under Federal control, such as national parks and monuments.

(39) Action should be taken without further delay for the early determination of the site of a permanent airport for the national capital, and for the provision there of a model airport installation.

National Defense Organization:

(40) The modification in air force organization now being put in effect should be continued until their merits or otherwise shall have been proven by experience. The employment of air force as an independent striking unit should continue under constant study, both in the Army and in the Navy, and should be developed to its limit by tactical maneuvers and through the procurement of material best suited to such independent operations.

(41) The personnel and equipment of the air forces should be further developed, and where necessary expanded, in accordance with fixed programs of regular growth based upon the current plans of the Army and Navy. The effectiveness of the forces should be kept at the highest pitch by constant attention to superior quality of equipment and of personnel, and by the conduct of training exercises under widely diversified climatic and geographical conditions offering the greatest possible variety of operating problems.

(42) Intense study and prompt remedy should be given to the inter-relationship of the national defense Services.

(43) The budgetary practices of the Army and Navy in respect of aeronautical matters should be standardized for easy comparison. In both Services the funds for equipment to be used on aircraft should be directly allocated to the authorities in charge of aeronautical development, and subsequently transferred to other branches or offices if necessary.

(44) A number of officer pilots of the regular Army and Navy should be assigned annually to the other Service, and given duty with other active air units.

(45) The experimental and developmental work of the Army and Navy should be carried on on an increased scale. The funds provided for such work should be materially increased, as the necessary consequence of the increasing complexity of aircraft and engine construction. Special allocations should be made by both Services for a particularly vigorous developmental campaign on high-powered and highly super-charged engines, and on power-plants of Diesel type.

(46) Funds appropriated for experimental purposes, and not paid out when expected because of a failure of an article to meet the contractor's guarantees or a failure of any contractor to come forward with an article meeting a Service specification under which funds had been set aside, should remain available until used.

(47) There should be a closer coordination of Army and Navy experimental and developmental work, and the National Advisory Committee for Aeronautics should be more largely used as an agency for such coordination. A much higher degree of uniformity than now exists should be attained in auxiliary material and the methods for its development, and also in the practices of the Army and Navy in technical matters as analyzing aircraft for strength, performance testing, etc.

(48) Arrangements should be made for the temporary attachment of a few officers of the Army and of the Navy to civil activities, and especially to air transport, for study in order that the armed Services may secure the greatest benefit from civil aeronautical experience.

(49) The War and Navy Departments should adopt the practice, where possible without increase of cost to the government, of making reasonable use of the facilities of approved civil aircraft repair stations for repair and service work on military and naval aircraft.

(50) There should be immediate and positive action to improve the promotion situation in the Army, with special reference to the Air Corps. The authority to provide temporary rank in the Air Corps, to make the rank commensurate with the responsibilities held, should be broadened and then used.

(51) The authority to select a Chief of Air Corps from among all the officers of long service in that arm, which has now expired, should be renewed.

(52) The maximum term of active service with regular forces on the part of Reserve pilots graduated from the Army and Navy training schools should be increased, at least to three years and perhaps further. A cash payment should be given upon termination of this duty to ease the shock of transference to civilian life.

(53) Cadets accepted for training in either the Army or Navy flying schools should be required to take a definite obligation to perform a definite period of active duty after graduation, except as their resignations may be accepted in the discretion of the War or Navy Departments.

(54) The aviation Reserves both of the Army and Navy should be materially strengthened, and should receive a higher priority than they at present enjoy in the allotment of funds. Consideration should be given to the establishment of Assistant Secretaries of War and of the Navy for Reserve or personnel matters. Their duties would include the encouragement and maintenance of a more effective Reserve force in both Services, particularly with regard to the fields requiring a specialized combination of technical ability and military training.

(55) The Army and Navy should organize special classifications in the Reserve for essential personnel of airline organizations, and every

effort should be made to secure the enrollment of such personnel in one or the other of the Reserve forces.

(56) The War and Navy Departments should give serious study to measures of securing a general enrollment in some category of the Reserve of private pilots and commercial pilots other than those employed in air transport, to the maintenance of an appropriate check on the individual qualifications of civil pilots, and to the establishment of special training courses to supply highly trained civil pilots with such specifically military training as might be necessary to make them immediately effective members of a reserve.

(57) There should be created a new type of government insurance for Reserve officers, covering the aviation hazard exclusively, available in amounts substantially beyond the present \$10,000 limitation, and with premiums arbitrarily maintained on a very moderate scale. The personnel of the aviation Reserves should receive the same protection in case of injury or death in line of duty as would be given to Regular officers under the same circumstances.

(58) The provision for officer personnel of special engineering ability and industrial experience in the aviation field should be reconsidered both by the Army and by the Navy. An adequate number of such officers should be developed and given assurance by legislation of attractive careers in the Service. In the case of the Navy at least, we recommend the commission of such officers in a staff corps to insure continuous employment on duties connected with their specialty.

Procurement of Military and Naval Aeronautical Matériel:

(59) The paramount importance of quality in military aircraft should be recognized, and procurement policies should be fixed with primary reference to the securing at all times of the best material. Price should not be the primary consideration.

(60) The general purpose in the relations of the government to the industry engaged in manufacturing Service aircraft should be to maintain units sufficiently stable and sufficiently well organized so that they would be available for expansion in the event of war. The strength and efficiency both in design and in production of the individual manufacturing units, rather than the number of independent units existing, should be regarded as the test of the nation's industrial preparedness.

(61) Procurement policies should be planned to encourage the development of integrated manufacturing units carrying on their own research, development, design, and production work.

(62) The practices of the government departments procuring aircraft should, as far as practicable, be the same. The Federal Director of Procurement should promulgate the necessary directions to this end.

(63) Every effort should be made to organize procurement policy so that the supply of each general type of aircraft for replacement and for modernization should proceed at a substantially regular rate, and so that there may be a substantially regular flow of productive work in the plants of the aircraft industry.

(64) The War and Navy Departments should so organize their technical forces as to obviate the simultaneous functioning of any personnel in the roles of competitor and of judge.

(65) The development of new types of aircraft should continue to be provided for either by design competition or by experimental contracts for a specific article, but the rules now governing formal design competitions should be modified to allow administrative flexibility, and in particular to provide for the holding of competitions in which design development is allied with experimental construction of the article designed.

(66) The Army and Navy should adopt a policy in holding design competitions by which details of the military characteristics of the aircraft and equipment desired to be created shall be disclosed only to fully responsible competitors, of American nationality, and qualified for the work contemplated in the opinion of the Secretary of War or of the Navy.

(67) The announcements of design competitions should include the statement of the fixed price at which, subject to bonuses and penalties for performance, machines from the best designs will be purchased from the originators of the types.

(68) Where the interests of the government clearly require that the construction of equipment from a particular design be thrown open to general competition or that orders for such construction be allocated to others than the originator of the design, royalties should be paid to the originator in reimbursement for the right to use his drawings, calculations, and production information.

(69) The attempt to introduce a standard catch-all patent-license clause into all developmental contracts for aircraft and aeronautical material should be abandoned. Reproduction rights on patentable inventions should accrue to the government, in connection with a developmental contract for purchase of an article embodying the inventions, only in case the contractor is engaged to conduct a specific experimental development under governmental direction.

(70) Existing provisions of law should be amended as necessary to allow direct suit (but not injunctive procedure) against a manufacturer alleged to be infringing a patent in connection with work done by him for the Federal government.

(71) Explicit authority should be granted to the Secretary of War and to the Secretary of the Navy to negotiate contracts for quantity purchases of aircraft and other aeronautical material, subject to the requirement of a full report to Congress in each case where the authority is used.

(72) In order that there may be no incentive for an uneconomic expansion of plants that could not be kept regularly running at anywhere near their capacity, it should be procurement policy to avoid any concentration in any one plant of an abnormally large proportion of the total military and naval work then outstanding.

(73) When purchases are to be made as the result of a process of competitive bidding, the Secretary of War or Secretary of Navy should be authorized either to award a contract for the whole quantity

sought to the bidder who can best perform the work, or to divide the work among two or more bidders if that be in the best interest of the government.

(74) Where definite profit limitation is to be employed, as in the present Naval Construction act, it should not be applied to the individual contract, but, in the interest of equity, of simplicity of accounting, and of stimulation of technical development, should be extended over all the work done for the government Service over a considerable length of time.

(75) Industrial mobilization plans in the field of aeronautics should be pressed by the joint effort of the Army and Navy.

Coast Guard:

(76) The Coast Guard should give to its aviation personnel essentially the same opportunity to specialize on aviation duty over long periods as does the Navy.

(77) A limited number of aviation specialists should be allowed to enter the Coast Guard directly upon completion of their terms of active duty as reservists with Naval aviation.

(78) The Coast Guard should procure its aircraft through the Navy Department, which should assume the responsibility of necessary experimental and developmental work to produce equipment especially suited to Coast Guard needs. Both experimental work and quantity procurement for the special purposes of the Coast Guard should be covered by Coast Guard funds to be transferred to the Navy Department for the purpose.

Lighter-than-Air Craft:

(79) It should be the policy of the United States to undertake further construction and operation of rigid airships in naval and commercial service.

(80) The Navy should determine by actual experience the scouting value of airships and the need for their further construction for naval purposes.

(81) The prompt construction for the Navy of a training airship to replace the *Los Angeles*, as recommended by the Navy General Board, should be undertaken.

(82) The early inauguration of an experimental trans-Atlantic airship service should be undertaken to meet the competition of the newest foreign ocean liners and of a projected foreign airship line. The initial step should be the construction by the government, for charter or lease to a commercial operator, of a commercial airship and a commercial terminal, with necessary docking and handling facilities.

(83) The production of helium by the Bureau of Mines should be continued, with authority to sell helium to commercial users and to foreign purchasers for export when it is available in excess of naval and military needs. Such domestic sales and export sales should be subject to the approval of the commission hereinafter proposed and should involve no net cost to the government. Export of helium from

production by others than the Bureau of Mines should also be subject to approval of the commission.

(84) The helium tank cars now owned by the Army and Navy should be transferred to the Bureau of Mines.

Relations of Government and Industry:

(85) The degree of control by the government of the design and construction of civil aircraft should remain for the time being approximately as at present. The ultimate purpose should be a minimizing, in the degree consistent with public safety, of detailed control over the work of responsible manufacturers maintaining an adequate inspection and engineering organization of their own.

(86) The examination of a new type of aircraft by the government should include a numerical determination of all the essential elements of performance, and the figures so obtained should be recorded in the approved type certificate.

(87) Every assistance should be given by the appropriate agencies of government to manufacturers of commercial aircraft, engines, and accessories seeking an export market for their product. In those cases where possible military and commercial applications exist for the same article, there should be no presumption of prospective military use in the absence of any specific evidence pointing in that direction.

(88) The State Department and Department of Commerce should make every effort to obtain an increased number of international agreements for the mutual recognition of airworthiness certificates, with the object of permitting a free trade in aircraft and the free travel of private owners in their own machines.

(89) The principle of cross-licensing of patents in the aircraft industry should be recognized as beneficial to the government and as promoting a rapid development, and should be encouraged. The government should take an active interest in the operations of a cross-license association, membership in which is open to all on reasonable terms, to insure fair treatment for all participants in its affairs and to protect the government's interest. The commission hereinafter proposed should be authorized to act as an adjudicator, either between private parties or between a private party and a government department, in such cases arising under such an agreement as the commission may elect to hear.

Research and Education:

(90) The National Advisory Committee for Aeronautics should remain the central agency of governmental research in aeronautics, and also the recognized body for coordinating experimental and developmental work of the various government departments and the results obtained from the researches of various institutions. It should extend its mechanism of unpaid subcommittees to include frequent conferences upon particular questions with technically qualified representatives of the commercial industry, and to draw the industry's personnel engaged

in the development of aeronautical products more directly into the planning of its research work.

(91) The best qualities of present-day aircraft are preeminently due to organized research work, and the work done by the government in that field has paid for itself repeatedly in the improved service that aircraft have been able to render as a result. The extent of such governmental research work should be increased to substantially above its present level as rapidly as the personnel can be trained and special laboratories equipped.

(92) The National Advisory Committee for Aeronautics should have a moderate appropriation specifically ear-marked for the support of approved research projects at universities and other semi-public institutions which have competent staff and proper equipment to perform the work, and should be authorized to contract for the conduct of such researches and to publish the results.

General Governmental Organization:

(93) There should be created an additional Assistant Secretaryship of Commerce especially qualified to supervise the responsibilities of the Department under the Air Commerce Act. Ultimately the duties of this office might well include the supervision of the Department's functions with regard to other forms of transportation.

(94) The Bureau of Air Commerce should be definitely recognized as a purely professional and technical organization, and its personnel, including division heads, should have a high degree of security of tenure.

(95) The Weather Bureau should be transferred to the Department of Commerce.

(96) Authority should be given to detail certain members of the Weather Bureau's organization for training at government expense in new methods of weather forecasting.

Aeronautical Law:

(97) If the several states do not adopt substantially uniform aeronautical regulatory laws within a reasonably early time, a Federal constitutional amendment should be adopted which will give to the Federal government exclusive control of all phases of civil aeronautics within the United States.

(98) The United States should participate actively in the codification of international private air law, with annual appropriations therefor as necessary.

(99) The commission hereinafter proposed should undertake a careful study of the subject of international public air navigation agreements to determine the desirable extent, if any, of American participation therein.

(100) One or more specialists on aeronautical matters should be attached to all American delegations to international conferences having aeronautical topics on the agenda.

(101) The application of general legal principles to matters specifically aeronautical should be modified as experience has shown to be wise, and in particular there should be provisions for Federal recording of title to aircraft and of mortgages and other liens.

Air Commerce Commission:

(102) There should be created an air commerce commission, its members appointed by the President by and with the consent of the Senate for long terms. The commission so created should have broad supervisory and regulatory powers over civil aeronautics, and particularly over domestic and foreign air transport. It should have all powers necessary to the attainment of its general supervisory and regulatory purposes, including the power to hold hearings and conduct investigations upon any subject pertaining to civil aeronautics. It should be subject to merger by executive order at any time with any other body of a similar nature having similar functions.