SUBCHAPTER F—AIR TRAFFIC AND GENERAL OPERATING RULES

[Docket No. 10261, Amdt. 91-112]

PART 91—GENERAL OPERATING AND FLIGHT RULES

Civil Aircraft Sonic Boom

The purpose of this amendment is to afford the public protection from civil aircraft sonic boom. The primary basis for this amendment is section 611 of the Federal Aviation Act of 1958 (49 U.S.C. 1431). This amendment prohibits the supersonic flight of civil aircraft except under the terms of an authorization to exceed mach 1.

This amendment is based on a notice of proposed rule making (Notice 70-16) issued on April 10, 1970, and published in the FEDERAL REGISTER on April 16, 1970 (35 FR 6189). Interested persons have been afforded an opportunity to participate in the making of these amendments. Due consideration has been given to all matter presented.

Pursuant to 49 U.S.C. 1431(a), the Federal Aviation Administration has consulted with the Secretary of Transportation, concerning all matters contained herein, prior to the adoption of this amendment. Pursuant to section 8(b) of the guidelines of the Council on Environmental Quality concerning statements on proposed Federal actions affecting the environment, published in the FEDERAL REGISTER on April 23, 1971 (36 FR 7724), the Federal Aviation Administration has submitted this amendment to the Environmental Protection Agency for review and comment.

Several comments in response to Notice 70-16 expressed concern for the airport noise levels to be expected from supersonic aircraft. The problem of airport noise levels is distinct from the sonic boom problem and is the subject of separate proposed regulatory action by the FAA (see Notice 70-33, Civil Supersonic Aircraft Noise Type Certification Standards, advance notice of proposed rule making, issued on August 4, 1970, and published in the FEDERAL REGISTER (35 FR 12555) on August 6, 1970).

Comments expressed concern that the exhaust of supersonic transport aircraft could have long-term environmental effects on the upper atmosphere. Under the Clean Air Amendments of 1970 (Public Law 91-604, December 31, 1970), Part B of title II of the Clean Air Act, as amended, provides, in section 231, that the Administrator of the Environmental Protection Agency shall issue "emission standards applicable to emissions of any air pollutant from any class or classes of aircraft or aircraft engines which in his judgment cause or contribute to or are likely to cause or contribute to air pollution which endangers the public health or welfare." When such standards are issued for supersonic aircraft, the Department of Transportation will comply with section 232 of that Act, which directs the Secretary of Transportation to prescribe regulations to insure compliance with all standards prescribed under section 231. Such regulation, however, is distinct from the purpose of this amendment, which is limited to the control and abatement of sonic boom.

The policy of environmental management underlying this amendment is, first, that the burden of establishing the environmental acceptability of new and potentially harmful actions rests on the proponent of such actions rather than on the potentially affected public, but, second, that where consistent with this objective, reasonable opportunity for demonstrating or developing environmental acceptability should be available to the proponent of action who is willing and able to control his demonstration of acceptability in the public interest. Reasonable opportunity for the operators or manufacturers of civil supersonic aircraft to conduct sonic boom research is thus provided, in this amendment, in the form of closely controlled authorizations to exceed mach 1 in designated test areas (where the test cannot be safely or properly conducted offshore).

However, it is not intended that any of the burden of environmental risk be shifted to the general public in the form of an uncertain probability of sonic boom annoyance. The policy against causing the public at large to bear the risk of annoyance caused by sonic boom experimentation provides the basis for rejecting comments to the notice suggesting that regular air carrier routes be used as experimental sonic boom corridors. Contrary to the concern expressed in some comments, there is no authority whatsoever in this amendment for sonic boom producing flight over the United States except in the designated test areas.

Several comments concerned operation of supersonic aircraft outside of the United States. Two main issues were stressed. First was the concern that sonic booms may be injurious to sea life, damaging to ships, or annoying to persons at sea. In addition, there was considerable concern expressed that, because of the width of the sonic boom swath, the borders of the United States may be subjected to sonic booms generated by supersonic aircraft that are outside of the United States. Both of these issues involve regulation of foreign aircraft in international airspace over the high seas. For this reason, international concern and cooperation is a highly desirable part of any satisfactory resolution of these issues on a worldwide basis. In this connection, the National Environmental Policy Act of 1969 states (section 102(2)(E)) that the proper response to worldwide environmental issues is for Federal agencies, where consistent with U.S. foreign policy, to "lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment." Since before the passage of that Act, the International Civil Aviation Organization (ICAO) has been actively engaged in establishing a basis for international sonic boom control for civil aircraft. To this end, the ICAO sonic boom panel, with U.S. representation, has been meeting since 1969 to study the problem. In March of 1971, the ICAO Council, in further recognition of the importance of the sonic boom problem, replaced the sonic boom panel with a committee having wider scope and reporting directly to the Council. The United States is represented in all proceedings of the Sonic Boom Committee. In response to public comments, the FAA believes that the form of international cooperation now underway provides an appropriate means of orderly investigation of the sonic boom problem over the high seas.

Several comments stated that the notice was unclear with respect to the intent of the FAA to protect the territorial seas of the United States from sonic boom. The intent of this amendment is to provide the territorial seas of the United States with the same degree of sonic boom protection that is provided for the land areas of the United States. For this reason, the words "excluding the territorial waters thereof," which appeared in proposed § 91.55(c), are deleted from this amendment.

One comment requested that the final rule include military aircraft and not be limited to civil aircraft. The limitation to civil aircraft is appropriate at this time to reflect the limits of regulatory authority under title VI of the Federal Aviation Act of 1958, which provides the primary legal basis for this amendment.

Concern was expressed that the general terms of the provisions for the issuance of authorizations to exceed mach 1 will actually authorize what the rule is designed to prohibit. It was stated, for example, that the words "necessary for aircraft development" could be interpreted as permitting almost any sonic boom producing flight desired by those concerned with aircraft development. The FAA agrees that proposed § 91.55(b) could be read as implying that an authorization to exceed mach 1 would be issued upon a mere showing that one of the listed categories (e.g., aircraft development) applies. This was not intended. The intent of the proposal was to require environmental investigation of the effects of the issuance of an authorization to exceed mach 1 for flight in a designated test area. For this reason, proposed § 91.55(e) provided that "an application for an authorization to exceed mach 1 may be denied if the Administrator finds that such action is necessary to protect and enhance the environment." However, in order to more adequately describe the extent of the environmental investigation that is intended, this amendment requires the applicant for an authorization to exceed mach 1 in a designated test area to submit all information deemed necessary to permit the Administrator

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to comply with the National Environmental Policy Act of 1969 and related Executive orders, guidelines, and orders, that are determined to apply to the issuance of an authorization or designation of a test area. In addition, in agreement with other comments, the provision for issuance of authorizations to exceed mach 1 for flights "necessary for aircraft development" is eliminated from this amendment for reasons discussed below.

Several comments requested that all opportunity for supersonic airworthiness investigations and sonic boom flight testing be eliminated from the final rule and stated that no provision should exist for the issuance of an authorization to exceed mach 1 under any condition. Abandonment of civil supersonic air transportation technology itself is in effect urged by these comments. The FAA agrees that the rule should not permit environmentally unacceptable authorizations to be issued. However, the FAA does not agree that the legitimate concern for environmental controls on supersonic flight provides a sound policy basis for requiring that the technology of civil supersonic air transportation itself be prevented from developing in forms that are environmentally acceptable and that are also safe, convenient, productive, and profitable to future generations. Such abandonment of emergent technology is not a rational substitute for its controlled growth. Experimentation and research are an inescapable aspect of environmental, as well as technological, improvements in the public interest, where complex technologies and their interactions are involved. Further, such research is also necessary to promote exploration and understanding of the complex interface between technology and quality of life so that both may be maximized, consistent with the policy of "productive harmony" in section 101 (a) of the National Environmental Policy Act of 1969. Finally, concerted and controlled research efforts may actually achieve a supersonic vehicle that delivers more transportation more quickly with less total environmental cost than subsonic aircraft delivering the same necessary service volume, and the fruits of this research may have environmentally beneficial secondary impacts in the development of other aircraft classes.

It is believed that environmentally responsible growth, not the abandonment of growth, was intended by that Act, which directs Federal agencies to consider environmental amenities "along with" (not in lieu of) economic and technological considerations. Closely controlled experimentation and research are also consistent with the commitment to responsible growth in the President's state of the Union address of June 22, 1970, which states that "the argument is increasingly heard that a fundamental contradiction has arisen between economic growth and the quality of life, so that to have one we must forsake the other. The answer is not to abandon growth, but to redirect it."

It should also be noted, as stated above, that the detailed provisions for environmental analysis and public coordination of environmental statements in the guidelines of the Council on Environmental Quality will be complied with in the designation of test areas and in the issuance of authorizations to exceed mach 1 where such actions are determined to be major Federal actions significantly affecting the quality of human environment. The policy of environmental protection in the National Environmental Policy Act of 1969 will be complied with in the issuance of authorizations to exceed mach 1. Therefore, it is not believed that a rule preventing all regulatory opportunity for sonic boom experimentation and research is necessary from an environmental standpoint.

Several comments stressed the current lack of definitive conclusions regarding the effect or acceptability of civil aircraft sonic booms, and urged that steps be taken later to determine whether environmentally acceptable boom generating characteristics can be developed and that the rule be periodically reviewed to take advantage of new knowledge concerning sonic booms. Closely related to this comment was a request that the FAA should now be regulating only the sonic boom characteristics (signatures), not flight conditions such as speed. The FAA agrees that the technology of supersonic air transportation should be given fair opportunity to prove itself fully compatible with the environment. For this reason, the rule contains provisions for flight testing, in designated test areas only, where necessary to establish means of reducing or eliminating the effects of sonic boom (and where the test cannot be safely or properly conducted offshore), subject to FAA's duty to comply with all applicable environmental statutes, Executive orders, and guidelines. The FAA further agrees that the regulation should be reviewed to relieve any restrictions that are demonstrated not to be necessary for consistency with all applicable environmental statutes, Executive orders, and guidelines. However, under the current state of the art of sonic boom control, there is no basis for establishing an "acceptable" overpressure limit, nor is there any assurance that a regulation that addresses only the sonic boom "signature" can provide a predictable basis for protecting the public from sonic boom of any given intensity. Further, it is doubtful that such a rule could be fairly and effectively enforced since, as pointed out in another comment, flight crews at present have no means of monitoring or sensing the surface "signature" of sonic booms. The mach meter, on the other hand, even under today's limited knowledge, can be both an effective shield of the public from sonic boom and a clear and unambiguous indicator of violation to the flight crew. The FAA therefore believes that, under the current limits of sonic boom control technology, control of flight conditions (e.g., speed) is necessary in order to insure effective control of sonic boom generation at the source and believes that the speed limit established as a general operating rule should positively prevent sonic boom generation that could affect the surface. Mach 1 is believed to be such a speed limit. In this connection, the FAA does not agree with other comments suggesting that a high subsonic speed limit, rather than mach 1, is necessary to prevent sonic boom from reaching the surface.

A similar comment concluded that the proposed rule, by banning sonic boom rather than permitting acceptable sonic booms, would so becloud the future operability of small supersonic civil aircraft as to make it unrealistic to seek financing for their development. The commentator stated that, "it would be unacceptably risky to incur the preliminary design, scale model, prototype, and testing costs, without which there could be no prospect of even starting to find out whether the end product of development could operate as far as sonic boom characteristics are concerned." The FAA believes that, until a truly acceptable and controllable sonic boom signature can be conservatively demonstrated, the aircraft industry must weigh the above-cited risk against the market potential for the aircraft. For the company that decides that the potential market is worth the invesment risk, this amendment offers opportunities for that company to demonstrate the environmental acceptability of its sonic boom characteristics. In the meantime, as stated above, it is not believed that the risk cited by the commentator should be shifted to the general public in the form of an uncertain and uncontrolled probability of disturbance from sonic boom. This would be the result of attempting to define an acceptable sonic boom under the limitations of current knowledge.

It should be noted that none of the industry comments recommending an operating authority to create "acceptable" sonic booms contained any evidence that would support a definition of "acceptibility" in terms of specific overpressures, any evidence that industry has developed means of controlling those overpressures, or indeed, any evidence that overpressure itself is a proper index of annoyance.

One comment stated that the proposal was in effect a combination of certification and operating rule, that any showing of sonic boom characteristics should therefore be required of applicants for type certificates (e.g., manufacturers) rather than operators, as in the case of other type certification rules, and that operators should only be required to comply with type certification operating limitations and should not have to go through the environmental or other demonstrations involved in the issuance of an authorization to exceed mach 1. When and if the technology of predicting and closely controlling the generation of clearly acceptable sonic booms reaches a level of certainty comparable to that involved in the airworthiness determinations now made by the FAA during type certification, some provision for approving flight in excess of mach 1 might conceivably become an appropriate aspect of type certification (together with appropriate operating limitations).

However, under the current rudimentary state of the art of sonic boom prediction and control, no approval to exceed mach 1 should be given during type certification, particularly since such approval would thereby become protected by the procedural requirements applicable to the amendment, modification, suspension, or revocation of certificates under section 609 of the Federal Aviation Act. At this early stage in the development of civil supersonic air transportation, it is believed that type certification is too cumbersome a procedure to provide the continuous and flexible administrative control and review that is necessary to insure that no unacceptable environmental impacts result from sonic boom research. In the light of the increasing public concern for environmental understanding and control, the flexibility and control inherent in the form of operating rule contained in this amendment (and not available in type certification) is also believed to be necessary to insure that supersonic air transportation is given a fair chance to prove itself compatible with environmental values while at the same time protecting those values as research progresses.

Several comments opposed the proposal not on its specific merits but on the basis that all sonic boom control should be done directly by the Congress. The Department of Transportation appreciates the concern that underlies these comments and has on previous occasions stated to congressional committees that no objections would be interposed to further congressional action per se to protect the public from sonic boom. Any forthcoming statutes concerning sonic boom will be administered by the Department if such is the will of the Congress. In the meantime, the Department recognizes that the question of who provides protection from sonic boom is secondary to the need to provide effective protection, and intends to insure that the public receives the full measure of protection from sonic boom intended by the Congress in Public Law 90–411 and subsequent environmental laws, Executive orders, and guidelines.

One comment stated that the FAA should make clear the right of State and local municipal authorities to enact their own restrictions on supersonic overland flights and sonic booms. This would be inappropriate in view of the Federal preemption of the flight of aircraft as acknowledged in legislative history of Public Law 90–411. Senate Report 1353 (90th Cong. 2d sess., July 1, 1968) accompanying H.R. 3400 specifically states that "since the flight of aircraft has been preempted by the Federal Government, State and local governments can presently exercise no control over sonic boom. The bill makes no change in this regard." (P. 7.)

One comment suggested that the regulation provide an exception to permit operation at speeds in excess of mach 1 for safety, stating that there may be emergency situations where a pilot may have to increase speed (such as in an emergency descent) in order to protect his aircraft and passengers. The current emergency deviation authority given the pilot in command by § 91.3 is adequate in this regard.

One comment stated that the rule should be clarified to indicate that the "conditions and limitations" referred to in proposed § 91.55(c) include weather or other atmospheric conditions. Atmospheric conditions are a fundamental variable affecting the propagation of sonic boom. They are thus a fundamental portion of the conditions and limitations referred to in § 91.55. It is not believed that further clarification is necessary.

One comment raised a potentially important point with respect to the meaning of the phrase "cause a sonic boom to reach the surface." In this connection, the question was asked whether a pressure event that was not perceptible by man but was detectable by instruments on the surface would be considered a "sonic boom." Perceptibility or audibility are highly subjective variables. These variables are closely related to the equally subjective concept of "acceptability" as applied to sonic boom overpressure control and limitation. As stated above, the technology of sonic boom propagation control had not yet achieved a prediction capability adequate to insure public protection from sonic boom. Thus, while a measurable but imperceptible boom might be demonstrated under one set of atmospheric conditions, an attempt to duplicate the event, under today's limited knowledge, may result in a perceptible boom on the surface. Considering all of the above factors, together with the Department's commitment to provide real and effective sonic boom protection as research proceeds, it is believed reasonable to require public protection from "measurable sonic boom overpressures." This term is therefore adopted in this amendment in response to this comment.

One comment stated that there is no proof of any incompatibility between the quality of the environment and the technical and economic advantages of supersonic transportation, that no civil supersonic transport will be put into service for years, that research should yield much information during this period, and that no emergency requiring this amendment exists at this time. The commentator stated that most activities involved in economic progress "entail favorable consequences for some people and unfavorable for others" and urged that this amendment either be postponed or that it be revised to incorporate language that would permit sonic boom to reach the surface provided that such sonic boom does not "create damage" to people, property, and environment.

With respect to the question of the timing of this amendment the FAA does not believe that the potential for further research justifies postponement of this amendment until supersonic air transportation is imminent. While the FAA agrees that no emergency now exists, early promulgation of this amendment is believed to be appropriate in order to insure that, to the maximum extent possible, persons concerned with the development or future operation of supersonic civil aircraft will not miscalculate and make major technological decisions on the economic assumption that regular overland sonic boom may ultimately be permitted. Also, under the influence of an early regulation, industry efforts to develop environmentally acceptable alternative designs, such as the supercritical wing for efficient cruise at transonic speeds may be further encouraged.

With respect to the request to permit all sonic booms that do not "create damage" on the surface, it is believed that not only is such a standard vague and difficult to enforce since proof of damage is best left to the courts, but such a standard ignores the fact that much annoyance and environmental disturbance might thereby be permitted short of actual damage. The goal of the FAA is to prevent the disturbance itself and not permit the level of public protection to decay to the point of actual damage.

One comment opposed the proposed procedure under which an authorization to exceed mach 1 could be terminated, without notice or other protective process, if the Administrator determines that such action is necessary to protect the environment. The authority to operate supersonically is not viewed as a matter of right but as a privilege conditioned entirely upon demonstrated ability to control the environmental effects of such operation in the public interest. If, at any time and for any reason, the effects of such flight are not being controlled within the conditions and limitations under which an authorization is issued, or those conditions and limitations are determined to be environmentally inadequate, no vested interest in continuing such flight is created by the authorization and its effectiveness must remain within the immediate control of the FAA. However, it is believed that the necessary authority to take immediate action against the authorization can be properly exercised by temporary amendment or suspension pending final amendment or termination, and that procedural fairness can be better served, consistent with environmental protection, by providing for immediate temporary amendment or suspension rather than immediate termination, and by permitting the holder to show, during the period of temporary amendment or suspension, why the authorization should not be finally amended or terminated. This change is incorporated in this amendment.

One comment concluded that, because the flights for which an authorization to exceed mach 1 may be issued are described in the singular, the rule prohibits the grant of an authorization to exceed mach 1 covering more than one flight. This is not correct. In this amendment, as throughout the Federal Aviation Regulations, the singular includes the plural (see § 1.3, Rules of Construction, in Part 1 of the Federal Aviation Regulations). The extent of the coverage of an authorization will be determined, in large part, by the completeness of control over sonic boom demonstrated by the applicant.

One comment pointed out that Part 91 is used by a wide range of general aviation and other subsonic operators and should be kept as useful as possible to them. The FAA agrees. Therefore, the detailed provisions concerning authorizations to exceed mach 1 are issued as new Appendix B of Part 91, leaving in the main body of that part only the prohibition against supersonic flight without an authorization to exceed mach 1.

One comment questioned the provision for issuance of an authorization to exceed mach 1 for flights that are "necessary for aircraft development" (in addition to flights that are necessary to show compliance with airworthiness rules or necessary for sonic boom research). If the flight is neither necessary for airworthiness compliance purposes not necessary for sonic boom research, the FAA agrees that no separate and clear reason for permitting supersonic flight is stated in the words "necessary for aircraft development." These words are therefore omitted from this amendment. Also, since the purposes of § 2(a) (1) and (3) are not limited to pure "research and development," those words are deleted from the section. No substantive change from the notice results.

One comment requested that the rule be modified to eliminate authority to grant permission for overland supersonic flight in designated test areas where the purpose of the flight can be achieved by overocean flight. The FAA agrees that feasibility of overocean testing is a valid consideration in the issuance of authorizations to exceed mach 1 in designated test areas over the United States. This amendment therefore requires applicants for such authorizations to show why the flight test cannot be safely or properly conducted over the ocean.

In consideration of the foregoing, Subchapter F of Chapter I of Title 14 of the Code of Federal Regulations is amended effective April 27, 1973, as to all persons, by amending Part 91 of the Federal Aviation Regulations as hereinafter set forth:

1. Section 91.1(b)(3) is amended to read as follows:

§ 91.1 Applicability.

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(b) Each person operating a civil aircraft of U.S. registry outside of the United States shall—

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(3) Except for §§ 91.15(b), 91.17, 91.38, 91.43, and 91.55, comply with Subparts A, C, and D of this part so far as they are not inconsistent with applicable regulations of the foreign country where the aircraft is operated or Annex 2 to the Convention on International Civil Aviation.

2. A new § 91.55 is added to read as follows:

§ 91.55 Civil aircraft sonic boom.

No person may operate a civil aircraft at a true flight mach number greater than 1 except in compliance with conditions and limitations in an authorization to exceed mach 1 issued to the operator under Appendix B of this part.

3. A new Appendix B is added to read as follows:

APPENDIX B

AUTHORIZATIONS TO EXCEED MACH 1 (§ 91.55)

SECTION 1. *Application.* (a) An applicant for an authorization to exceed mach 1 must apply in a form and manner prescribed by the Administrator and must comply with this appendix.

(b) In addition, each application for an authorization to exceed mach 1 covered by section 2(a) of this appendix must contain all information, requested by the Administrator, that he deems necessary to assist him in determining whether the designation of a particular test area, or issuance of a particular authorization, is a "major Federal action significantly affecting the quality of the human environment" within the meaning of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), and to assist him in complying with that Act, and with related Executive orders, guidelines, and orders, prior to such action.

(c) In addition, each application for an authorization to exceed mach 1 covered by section 2(a) of this appendix must contain—

(1) Information showing that operation at a speed greater than mach 1 is necessary to accomplish one or more of the purposes specified in section 2(a) of this appendix, including a showing that the purpose of the test cannot be safely or properly accomplished by overocean testing;

(2) A description of the test area proposed by the applicant, including an environmental analysis of that area meeting the requirements of paragraph (b) of this section; and

(3) Conditions and limitations that will insure that no measurable sonic boom overpressure will reach the surface outside of the designated test area.

(d) An application is denied if the Administrator finds that such action is necessary to protect or enhance the environment.

SEC. 2. *Issuance.* (a) For a flight in a designated test area, an authorization to exceed mach 1 may be issued when the Administrator has taken the environmental protective actions specified in section 1(b) of this appendix, and the applicant shows one or more of the following:

(1) The flight is necessary to show compliance with airworthiness requirements.

(2) The flight is necessary to determine the sonic boom characteristics of the airplane, or is necessary to establish means of reducing or eliminating the effects of sonic boom.

(3) The flight is necessary to demonstrate the conditions and limitations under which speeds greater than a true flight mach number of 1 will not cause a measurable sonic boom overpressure to reach the surface.

(b) For a flight outside of a designated test area, an authorization to exceed mach 1 may be issued if the applicant shows conservatively under paragraph (a)(3) of this section that—

(1) The flight will not cause a measurable sonic boom overpressure to reach the surface when the aircraft is operated under conditions and limitations demonstrated under paragraph (a)(3) of this section; and

(2) Those conditions and limitations represent all foreseeable operating conditions.

SEC. 3. *Duration.*

(a) An authorization to exceed mach 1 is effective until it expires or is surrendered, or until it is suspended or terminated by the Administrator. Such an authorization may be amended or suspended by the Administrator at any time if he finds that such action is necessary to protect the environment. Within 30 days of notification of amendment, the holder of the authorization must request reconsideration or the amendment becomes final. Within 30 days of notification of suspension, the holder of the authorization must request reconsideration or the authorization is automatically terminated. If reconsideration is requested within the 30-day period, the amendment or suspension continues until the holder shows why, in his openion, the authorization should not be amended or terminated. Upon such showing, the Administrator may terminate or amend the authorization if he finds that such action is necessary to protect the environment, or he may reinstate the authorization without amendement if he finds that termination or amendment is not necessary to protect the environment.

(b) Findings and actions by the Administrator under this section do not affect any certificate issued under title VI of the Federal Aviation Act of 1958.

(Sec. 307(c), 313(a), 611, Federal Aviation Act of 1958, 49 U.S.C. 1348(c), 1354(a), 1431; sec. 2(b)(2), 6(c), Department of Transportation Act, 49 U.S.C. 1651(b)(2), 1655(c), title I of the National Environmental Policy Act of 1969, 42 U.S.C. 4321 et seq., Executive order 11514, Protection and Enhancement of Environmental Quality, March 5, 1970)

Issued in Washington, D.C., on March 23, 1973.

ALEXANDER P. BUTTERFIELD,
Administrator.

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