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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 71, 91, 95, 121, 125, 129, 135

[Docket No. FAA-2003-14305; Special Federal Aviation Regulation No. 97

RIN 2120-AH93

Special Operating Rules for the Conduct of Instrument Flight Rules (IFR) Area Navigation (RNAV) Operations Using Global Positioning Systems (GPS) in Alaska

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: Under Special Federal Aviation Regulation (SFAR) No. 97, the FAA allows the use of Global Positioning System /Wide Area Augmentation Systems for the en route portion of flights on routes in Alaska outside the operational service volume of ground based navigation aids. The use of aircraft navigation equipment other than area navigation systems, that only permit navigation to or from ground-based navigation stations, often results in less than optimal routes or instrument procedures and an inefficient use of airspace. SFAR 97 optimizes routes and instrument procedures and provides for a more efficient use of airspace. Further, the FAA anticipates that it will result in an associated increase in flight safety.

DATES: ~~SFAR 97~~ This final rule is effective March 13, 2003.

JMA 3/18/03

FOR FURTHER INFORMATION CONTACT: Donald W. Streeter, Flight Technologies and Procedures Division (AFS-400), Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone: (202) 385-4567; e-mail: donald.w.streeter@faa.gov.

SUPPLEMENTARY INFORMATION:

Availability of Final Rules

You can get an electronic copy of this final rule through the Internet by:

(1) Searching the Department of Transportation's electronic Docket Management System (DMS) web page (http://dms.dot.gov/search);

(2) Visiting the Office of Rulemaking's web page at http://www.faa.gov/avr/armhome.htm; or

(3) Accessing the Federal Register's web page at http://www.access.gpo.gov/su_docs/aces/aces140.html.

You also can get a copy by submitting a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267-9680. Make sure to identify the docket number or amendment number of this rulemaking.

Background

Aviation is critical to Alaska for routine travel and commerce, and for nearly any kind of emergency. Only 10% of Alaska is accessible by road, and waterways are impassable most of each year. Alaska also is very large and crisscrossed by mountains that block radio and radar transmissions so that aviation services and infrastructure that

are available in the 48 contiguous states are not available in many areas of Alaska. Aviation is essential to Alaska, but there also is a safety consequence of operating in this environment. The aviation accident rate for rural Alaska is 2.5 times the average for the rest of the United States. The Capstone Program is one initiative by the FAA to reduce this accident rate.

The Capstone Program is a joint initiative by the FAA Alaskan Region and the aviation industry to improve safety and efficiency in Alaska by using new technologies. Derived from the National Transportation Safety Board (NTSB) and industry recommendations, Capstone Phase I focuses on southwest Alaska (the Yukon and Kuskokwim River Delta - YK Delta), which is isolated, has limited infrastructure, and has the same high rate of aviation accidents experienced in the rest of the state. Under Capstone, installation of advanced avionics in the YK Delta aircraft began in November 1999 and expansion of ground infrastructure and data collection will continue through December 2004. Relying on lessons learned during Phase I, Capstone Phase II is beginning in southeast Alaska. A more robust set of avionics, that include Global Positioning Systems/Wide Area Augmentation Systems (GPS/WAAS), is being deployed that aims at further reduction of controlled flight into terrain and mid-air collision accidents. In addition, instrument flight rules (IFR) area navigation (RNAV) procedures are being introduced that enable participants to conduct IFR operations on published routes, improving overall safety and capacity.

The current operating rules under the Federal Aviation Regulations in title 14 of the Code of Federal Regulations (14 CFR) do not accommodate the use of GPS/WAAS technology for IFR RNAV outside the operational service volume of ground-based

navigation aids. SFAR 97 allows the timely approval of approximately 200 aircraft that are being equipped under Capstone Phase II to conduct IFR RNAV operations using GPS/WAAS navigation systems. Additionally, SFAR 97 provides the opportunity for air carrier and general aviation operators, other than those participating in the Capstone Program, to voluntarily equip aircraft with advanced GPS/WAAS avionics that are manufactured, certified, and approved for IFR RNAV operations. This SFAR serves two purposes: (1) it allows persons to conduct IFR en route RNAV operations in the State of Alaska and its airspace on published air traffic routes using TSO C145a/C146a navigation systems as the only means of IFR navigation; and (2) it allows persons to conduct IFR en route RNAV operations in the State of Alaska and its airspace at Special MEA that are outside the operational service volume of ground-based navigation aids.

The FAA proposed SFAR 97 on January 24, 2003 (68 FR 3778). The comment period closed on February 24, 2003. The FAA received four comments on the proposed SFAR.

Discussion of Comments

Three comments received on the proposed SFAR supported the proposal. A pilot commented that this is a positive move toward improved safety and efficiency of operations in Alaska. The Alaska Airmen's Association commented that the SFAR provides more reliable navigation. The Association noted that by allowing safer minimum altitudes, the rule allows aircraft to fly below freezing/icing levels. It also noted greater operational capability. The Aircraft Owners and Pilots Association (AOPA) stated that SFAR 97 would also facilitate further development of the AOPA-

supported Capstone Program, which uses current-day technology to increase capacity while improving safety. Allowing the use of Global Positioning System/Wide Area Augmentation Systems (GPS/WAAS) for the en route portion of flights on routes in Alaska will further reduce the chances for controlled flight into terrain and midair collisions while at the same time improving capacity.

The Boeing Commercial Airplane Group agreed with the intent and goal of proposed SFAR 97 but noted the following:

"1. The NPRMs provisions are inconsistent with movement towards a Performance based International Airspace System (INAS), and are inconsistent with applications of RNP (e.g., it addresses only specific limited technologies; does not credit other more capable technologies, and has underlying angular criteria implications that are inappropriate in an inherently linear future RNAV and RNP criteria world)."

FAA Response: SFAR 97 addresses specific safety issues existing in Alaska. Further, the SFAR only addresses the enroute lateral navigation capability of GPS and is not intended as a model for future rulemaking on RNP in the International Airspace System. Nothing in SFAR 97 precludes development of more capable technologies and systems.

"2. The NPRM sets precedents with regard to inappropriate definitions and concepts that are inconsistent with and adversely interfere with necessary "Global" navigation systems evolution (e.g., Special MEA: 4000G)."

FAA Response: SFAR 97 addresses a specific safety need, is limited in geographic application, and is not proposed as a model for the future. As stated in Section 2 of SFAR 97, the definitions of this rule apply only to this SFAR. It is anticipated that this SFAR may be terminated when the national RNAV rule is in place. Therefore, FAA finds this SFAR does not "adversely interfere with necessary "Global" navigation systems evolution."

"3. By its issuance, the NPRM could inappropriately set a precedent, inferring that this type SFAR is needed when it is not, and thus imply that other better and more capable (e.g., RNP-based or GNSS based) systems may not be useable or eligible for MEA, route, or procedure credit, or that even some current operations (e.g., Alaska Airlines RNP operations) may be addressed by such an SFAR which in fact is not necessary."

FAA Response: As stated in the NPRM for SFAR 97, the current regulatory structure does not accommodate the use of GPS/WAAS technology for IFR RNAV outside the operational service volume of ground-based navigation aids. The FAA does not agree that the operations envisioned by SFAR 97 are appropriately conducted without this regulatory action. Nothing herein is intended to preclude or otherwise address certification, use, or operational approval of "other better and more capable" systems.

"4. The intended Capstone related capability can more easily and readily be achieved other ways (e.g., by FAA approval or specific means via Op Spec, FSDO LOA, or various FAA Orders and associated AIM changes). Even if an SFAR was desired (and it

should not be necessary), it could be done via a very simple SFAR issuance that essentially says that "Other routes, procedures, navigation systems, or operations may be authorized in Alaskan airspace, as determined by the Administrator"."

FAA Response: As noted, the current regulatory structure does not accommodate the use of GPS/WAAS technology for IFR RNAV outside the operational service volume of ground-based navigation aids. Operations envisioned under SFAR 97 include Parts 91, 121, 129, and 135. The FAA finds that due to the disparity in type of operations, no single administrative remedy could address all operators, and such an approach would be overly and unnecessarily burdensome for both the FAA and operators alike. The FAA finds that regulatory action is appropriate in resolving the existing regulatory deficiency for use of GPS systems in Alaska for IFR RNAV outside the operational service volume of ground-based navigational aids.

"5. The currently proposed SFAR appears to set criteria that may actually be harmful to expeditious and beneficial Alaska airspace management and evolution by implicitly invoking airspace standards that are overly restrictive and constraining (e.g., not recognizing the credit of linear criteria capable systems, or better systems related to RNP and networks of LAAS, or limiting airspace planning to very narrowly defined specific systems such as for special GPS MEAs [4000G], when other combinations of navigation systems could provide equal or better airspace performance."

FAA Response: SFAR 97 relaxes current existing regulatory requirements for surface based navigation capability only for aircraft equipped with appropriate TSO C145a/C146a GPS equipment. This rulemaking is not intended to address current or future capabilities attainable with appropriately installed and approved RNP capable systems. The FAA finds that permitting operations beyond service volume of ground based navigation aids adds previously unattainable and beneficial flexibility to management of and safe navigation through Alaskan airspace. The FAA anticipates that that experience gained through these Alaskan operations may provide a more precise and accurate basis for the formulation of future policies on airspace design that are now a work in progress.

"6. Language of the NPRM is technically flawed in that it make assertions like "...(GNSS) encompasses all satellite ranging technologies", when in fact the performance of some satellite-based systems may or may not alone meet specific RNP provisions (e.g., some international systems), particularly in some regions of Alaska airspace."

FAA Response: SFAR 97 makes no attempt to address or compare RNP performance to performance of existing satellite systems and only addresses operations with TSO C145a/C146a equipment in Alaska.

"7. The NPRM appears to exclusively attempt to credit systems meeting criteria only of TSO C145a/C146a. This is not appropriate technically because of certain characteristics of those systems which can be contrary to the general direction navigation needs to

evolve in an RNP-based global system (e.g., aspects of inappropriate angular criteria of C146 versus the more appropriate linear criteria of RNP; and system pilot interface issues). While these C145a/C146a systems may be beneficially purchased and operationally used, their inappropriate (e.g., angular) characteristics should not be the basis (and certainly not exclusive basis) for future INAS procedure or airspace design, even in a limited region, in limited circumstances."

FAA Response: As previously noted, the FAA intends SFAR 97 to address specific safety issues existing in Alaska, limits applicability to operations based on GPS within Alaska, addresses lateral navigation capabilities only, and is not proposed as a model for future rulemaking on RNP in the International Airspace System. The purpose of this SFAR is to address en route operations and is not intended to address approach procedures. FAA further finds nothing in SFAR 97 that precludes continued development of more capable technologies or eventual evolution of global RNP systems as eventually determined appropriate.

"8. Application of any of this SFAR to FAR 129 Operators is most inappropriate (e.g., international operators flying in US airspace). International Operations and international operators should be planning and equipping exclusively based on RNP-based criteria, ILS, LAAS, and GLS. Even if WAAS is used as a sensor in RNAV systems, international navigation criteria should be principally focused on RNP capability, not be defined as sensor specific."

FAA Response: SFAR 97 neither precludes or requires international operators to equip with navigation systems other than as currently provided in existing regulations and operations specifications. Additionally, nothing in SFAR 97 addresses operations other than within Alaskan airspace. The rule gives part 129 operators the ability to operate in areas (including lower altitudes) that are outside the service volume of ground-based navigational rules.

"9. This NPRM is not currently consistent with some key FAA criteria (AC120-29A) and the direction key large aircraft manufacturers and operators are evolving future navigation systems or operational capability. If adopted without significant change, any final rule based significantly on this NPRM could unnecessarily restrict and inhibit beneficial and necessary evolution of RNP related systems and applications."

FAA Response: While stating the NPRM is not consistent with some key FAA criteria per AC120-29A, the commenter does not provide sufficient information to identify the inconsistency. Advisory circulars provide advice on methods to comply with regulatory requirements; therefore, there is no requirement that an SFAR conform to an Advisory Circular. SFAR 97 provides the appropriate and intended regulatory structure for operations in Alaskan airspace that are outside the service volume of ground-based navigational aids. Additionally, as already noted, SFAR 97 does not preclude appropriate evolution and broad inclusion of other appropriately certificated and approved systems, including RNP systems, into the Global NAS.

"10. Numerous areas of analysis or comment in the NPRM preamble are also inappropriate, incorrect, or misleading. Significant revision of the preamble is also needed, before any final rule is issued (e.g., incorrect suppositions about the applicability or flexibility of current rules)."

FAA Response: Insufficient specificity is provided to locate any such unintended anomalies. Specific comments addressing issues of applicability and/or flexibility of current rules have already been addressed above.

As a general comment, Boeing also recommended that this SFAR not be issued independently, but rather that the editing of this SFAR be delegated to the AWO and TAOARC groups. While no reason for such additional editing by specific named groups is offered, providing such an additional period would be unfair to those who commented during the prescribed period . The FAA does not agree with this recommendation and finds the rulemaking provisions of 14 CFR part 11 are applicable to this SFAR and have been followed.

In a separate comment, American Trans Air stated, "The proposed rule uses language, terms and definitions found only in other OPEN Proposed Rule making actions (FAA-2002-14002 and FAA-2003-14449). Request this action be delayed/postponed until public comments regarding critical language contained in FAA-2002-14002 are resolved. This delay is necessary to allow the Proposed Rule to be reviewed in it's proper context and ensure common understanding and terminology with RNAV operations."

FAA Response: FAA recognizes that language, terms, and definitions used in SFAR 97 also are found in other open rule-making proposals. Definitions of language and terms used in SFAR 97 are applicable only to this SFAR, as stated in Section 2.

Based on its analysis of comments, the FAA adopts SFAR 97 as proposed.

Reference Material Relevant to SFAR 97

(1) Technical Standard Order (TSO) C145a, Airborne Navigation Sensors Using The Global Positioning System (GPS) Augmented By The Wide Area Augmentation System (WAAS); and (2) TSO C146a, Stand-Alone Airborne Navigation Equipment Using The Global Positioning System (GPS) Augmented By The Wide Area Augmentation System (WAAS). Copies of these TSOs may be obtained from the FAA internet website at www.faa.gov/certification/aircraft/TSOA.htm.

Related Activity

The FAA is conducting a thorough review of its rules to ensure consistency between the operating rules of 14 CFR and future RNAV operations for the NAS. This review may result in rulemaking that could enable the use of space-based navigation aid sensors for aircraft RNAV systems through all phases of flight (departure, en route, arrival, and approach) to enhance the safety and efficiency of the NAS. The changes anticipated could result in greater flexibility in air traffic routing, instrument approach procedure design, and airspace use than is now possible with a ground-based navigation aid system structure. The improved navigation accuracy and flexibility could enhance both system

capacity and overall flight safety, and could promote the "free flight" concept in the NAS by enabling the NAS to move away from reliance on ground-based NAVAIDs. SFAR 97 supports this activity as an early implementation effort. The FAA anticipates that that experience gained through these Alaskan operations may provide a more precise and accurate basis for future policies on airspace design which are now a work in progress.

Contrary Provisions of the Current Regulations

People who conduct operations in Alaska in accordance with SFAR 97 are excepted from certain provisions of the FAA's regulations. For instance:

14 CFR § 71.75. Extent of Federal airways. The extent of Federal airways is currently referenced as a center line that extends from one navigational aid or intersection to another navigational aid or intersection specified for that airway. SFAR 97 allows the Federal airway and other routes published by the FAA to be referenced and defined by one or more fixes that are contained in an RNAV system's electronic database that is derived from GPS satellites and used by the pilot to accurately fly the Federal airway or other published routes without reference to the ground based navigational aids that defines those routes.

14 CFR § 91.181. Course to be flown. Section 91.181 defines courses to be flown along Federal airways that are only referenced to station referenced navigational aids or fixes defining that route. SFAR 97 allows courses to be flown on Federal airways and other published routes that are defined by waypoints or fixes contained in a GPS WAAS navigation system that is certified for IFR navigation.

14 CFR § 91.205(d)(2). Powered civil aircraft with standard category U.S. airworthiness certificates: Instrument and equipment requirements. Section 91.205(d)(2) states that navigational equipment appropriate to the ground facilities to be used is required for IFR operations and does not include RNAV equipment. Under SFAR 97, operations can be conducted using navigation equipment that is not dependent on navigating only to and from ground-based radio navigation stations.

14 CFR §§ 91.711(c)(1)(ii) and 91.711(e). Special rules for foreign civil aircraft. Section 91.711(c)(1)(ii) requires foreign civil aircraft operating within the United States and conducting IFR operations to be equipped with radio navigational equipment appropriate to the navigational signals to be used and does not accommodate the use of RNAV systems for instrument flight rules operations. Section 91.711(e) states that no person may operate a foreign civil aircraft within the 50 states and the District of Columbia at or above flight level (FL) 240 unless the aircraft is equipped with distance measuring equipment (DME) capable of receiving and indicating distance information from the VORTAC facilities to be used. Although an IFR approved RNAV system provides distance information, this section does not allow the use of an RNAV system in lieu of DME.

14 CFR § 95.1. Applicability. Part 95 prescribes altitudes governing the operation of aircraft under IFR on Federal airways, jet routes, area navigation low or high routes, or other direct routes for which a minimum enroute altitude (MEA) is designated. In addition, it designates mountainous areas and changeover points. In general, the IFR altitudes prescribed in this section are determined by a route analysis based on the following factors: (1) An obstacle clearance assessment; (2) the lowest altitude at which

the aircraft radio navigation receivers are able to receive the ground-based radio navigation fixes defining the airway, segment or route; and (3) the lowest altitude at which two-way voice communication between the aircraft and the air traffic control unit can be maintained. No accommodation is made for IFR altitudes determined by the above route analysis factors over routes that may be defined by fixes other than ground-based navigation aid fixes. Under SFAR 97, operators using IFR certified GPS/WAAS RNAV systems are permitted to conduct operations over routes in Alaska at the lowest minimum en route altitude based only on route obstacle assessments and ATC two-way voice communication capability. This MEA is defined as the "special MEA" for purposes of SFAR 97 to distinguish it from MEAs established under part 95.

14 CFR §121.349(a). Radio equipment for operations under VFR over routes not navigated by pilotage or for operations under IFR or over-the-top. Section 121.349(a) requires airplanes to be equipped with two independent radio navigation systems that are able to receive radio navigational signals from all primary en route and approach navigational facilities intended to be used. This section does not allow, nor does any other section of part 121, allow the use of RNAV GNSS for IFR navigation on Federal airways and other routes. SFAR 97 allows the use of IFR-certified RNAV GPS/WAAS systems for IFR navigation.

14 CFR § 125.203(b) and (c). Radio and navigational equipment. These sections state that no person may operate an airplane over-the-top or under IFR unless it has two independent receivers for navigation that are able to receive radio signals from the ground facilities to be used and which are capable of transmitting to, and receiving from, at any place on the route to be flown, at least one ground facility. These sections

do not allow the use of RNAV GNSS for IFR navigation for any airplanes conducting IFR operations under part 125 in the NAS. SFAR 97 allows for the use of IFR-certified RNAV GPS/WAAS systems for IFR navigation.

14 CFR § 129.17(a) and (b). Radio Equipment. Sections 129.17(a) and (b) state that subject to the applicable laws and regulations governing ownership and operation of radio equipment, each foreign air carrier shall equip its aircraft with such radio equipment as is necessary to properly use the air navigation facilities. This section does not include or allow IFR RNAV GNSS to be used for air navigation on Federal airways or other published routes. SFAR 97 allows the use of IFR-certified RNAV GPS/WAAS systems for air navigation on Federal airways or other published routes.

14 CFR § 135.165. Radio and navigational equipment: Extended overwater or IFR operations. Section 135.165 excludes turbojet airplanes with 10 or more passenger seats, multiengine airplanes in a commuter operations, as defined under 14 CFR part 119, and other aircraft from conducting IFR or extended overwater operations unless they have a minimum of two independent receivers for navigation appropriate to the facilities to be used that are capable of transmitting to, and receiving from, at any place on the route to be flown, at least one ground facility. Since IFR-certified RNAV GPS/WAAS systems do not receive navigation position information from ground facilities, they would not be acceptable for navigation based on this section. SFAR 97 allows the use of IFR-certified RNAV GPS/WAAS systems in lieu of aircraft navigation equipment that uses ground-based navigation facilities to navigate.

Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. The FAA has determined that there are no new information collection requirements associated with this final rule.

International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to comply with International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has determined that there are no ICAO Standards and Recommended Practices that correspond to SFAR 97.

Economic Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs each Federal agency to propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (19 U.S.C. section 2531-2533) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, the Trade Agreements Act also requires agencies to consider international standards and, where appropriate, use them as the basis for U.S. standards Fourth, the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that

include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of $100 million or more annually (adjusted for inflation.)

In conducting these analyses, FAA has determined that this rule: (1) will generate benefits and not impose any costs, is not a "significant regulatory action" as defined in section 3(f) of Executive Order 12866, and is not "significant" as defined in DOT's Regulatory Policies and Procedures; (2) will not have a significant economic impact on a substantial number of small entities; (3) will not constitute a barrier to international trade; and does not impose an unfunded mandate on state, local, or tribal governments, or on the private sector.

The Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If it is determined that the expected impact is so minimal that the rule does not warrant a full evaluation, a statement to that effect and the basis for it is included in the regulation. No comments were received that conflicted with the economic assessment of minimal impact published in the notice of proposed rulemaking for this action. Given the reasons presented below, and the fact that no comments were received to the contrary, the FAA has determined that the expected impact of this rule is minimal and that the final rule does not warrant a full evaluation.

This rule establishes a minimum equipment and operational approval requirements that operators have to comply with to operate at lower minimum en route altitudes (MEAs) that are outside the service volume of ground-based navigation aids. It is anticipated that most of the participants who volunteer to participate in Capstone Phase

II will not incur any costs to equip their aircraft or conduct required training. Operators are not required to operate at these lower MEAs. Those who voluntarily decide to incur the costs to equip their aircraft and conduct the required training under this SFAR will have made their own business decisions that the cost associated with this SFAR's equipment and other requirements are worth the benefits of lower MEAs. For example, some operators will have concluded that flying at lower altitudes opens up markets that they could not previously have served because currently they do not have aircraft that can fly at certain altitudes on some routes and maintain reception with ground-based navigation aids. Other operators will conclude that having the ability to operate at lower MEAs will result in fewer flight cancellations or delays due to adverse weather (e.g., icing at higher altitudes).

Regarding benefits, this rule implements the National Transportation Board's recommendation "to demonstrate a low altitude instrument flight rules (IFR) system that better fulfills the needs of Alaska's air transportation system."[1] An interim assessment of the safety impact of Capstone Phase 1 test program found that "while the rates of accidents for specific causes have not changed in a way that is statistically significant yet, the over-all accident counts for the equipped and non-equipped groups were different: 12 accidents for non-equipped versus 7 for equipped even though each had nearly identical operations counts."[2] Operators having RNAV-equipped aircraft and flightcrews trained under this SFAR will realize safety benefits when such flights encounter adverse weather conditions en route at higher altitudes and they have the ability to seek clearance to the lower MEAs en route. In addition to the anticipated safety benefits, the rule might result

[1] Aviation Safety In Alaska (NTSB/SS-95/03) November 1995 page 77
[2] The Safety Impact of Capstone Phase 1 (W. Worth Kirkman, Mitre) August 2002 page 15

in cost savings. The use of IFR RNAV equipment permits the use of more direct and therefore shorter routes and aircraft using RNAV equipment may require less fuel and time to reach their destinations. The FAA has established a number of test routes throughout the United States and some airlines have estimated annual cost savings in excess of $30 million dollars due to flying these advanced RNAV routes.[3] The FAA finds that the potential safety benefits and cost savings justify the adoption of this rule.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation." To achieve that principle, the RFA requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions. The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposed or final rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section

[3] 2001 ACE Plan, Building Capacity Today for the Skies of Tomorrow, FAA Office of System Capacity, prepared jointly by FAA and ARP Consulting, L.L.C., December 2001 page 50-51

605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

This rule establishes the minimum equipment and operational approval requirements that operators comply with to participate in the Alaska Capstone Phase II test and evaluation program. Most of the participants who volunteer to participate in this test program will not incur any costs to equip their aircraft or conduct required training since the Capstone Program was congressionally funded. No comments were received that differed with the assessment given in this section of the proposed rulemaking. The FAA therefore certifies that the rule will not have a significant economic impact on a substantial number of small operators.

Trade Impact Assessment

The Trade Agreement Act of 1979 prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards.

This rule imposes requirements on foreign air carriers operating in the SFAR area if they elect to participate in the test program. These requirements mirror the communication and navigation equipment requirements placed on domestic carriers that participate in the test program. No comments were received objecting to these provisions. The FAA has assessed the potential effect of this final rule and has determined that it will

have a neutral impact on foreign trade and, therefore, create no obstacles to the foreign commerce of the United States.

Unfunded Mandates Assessment

The Unfunded Mandates Reform Act of 1995 (the Act) is intended, among other things, to curb the practice of imposing unfunded Federal mandates on State, local, and tribal governments. Title II of the Act requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of $100 million or more (adjusted annually for inflation) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action."

This final rule does not contain such a mandate. The requirements of Title II do not apply.

Executive Order 13132, Federalism

The FAA has analyzed SFAR 97 under the principles and criteria of Executive Order 13132, Federalism. We determined that this action will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government, and therefore would not have federalism implications.

Regulations Affecting Interstate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying regulations under title 14 of the CFR that affect

interstate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation, and to establish such regulatory distinctions as he or she considers appropriate. The FAA considers that this rule will be beneficial to operations in Alaska.

Environmental Analysis

FAA Order 1050.1D defines FAA actions that may be categorically excluded from preparation of a National Environmental Policy Act (NEPA) environmental impact statement. In accordance with FAA Order 1050.1D, appendix 4, paragraph 4(j), SFAR 97 qualifies for a categorical exclusion.

Energy Impact

The energy impact of the notice has been assessed in accordance with the Energy Policy and Conservation Act (EPCA) Public Law 94-163, as amended (42 U.S.C. 6362) and FAA Order 1053.1. We have determined that SFAR 97 is not a major regulatory action under the provisions of the EPCA.

Justification for Immediate Adoption

Because this final rule is optional, that is, operators in Alaska may choose to meet the equipment and operational requirements of SFAR 97 or comply with the current regulations, the FAA finds that this SFAR may be adopted without meeting the required minimum 30-day notice period. The effective date for SFAR 97, March 13, 2003, is

based, in part, on route charting dates for southeast Alaska and delay beyond that date would incur additional expense to the Government and be detrimental to operators.

List of Subjects

14 CFR Part 71

Airspace, Navigation (air).

14 CFR Part 91

Agriculture, Air traffic control, Aircraft, Airmen, Airports, Aviation safety, Canada, Freight, Mexico, Noise control, Political candidates, Reporting and recordkeeping requirements.

14 CFR Part 95

Air traffic control, Airspace, Alaska, Navigation (air), Puerto Rico

14 CFR Part 121

Air carriers, Aircraft, Airmen, Aviation safety, Charter flights, Drug testing, Reporting and recordkeeping requirements, Safety, Transportation.

14 CFR Part 125

Aircraft, Airmen, Aviation safety, Reporting and recordkeeping requirements

14 CFR Part 129

Air carriers, Aircraft, Aviation safety, Reporting and recordkeeping requirements, Security, Smoking.

14 CFR Part 135

Air taxis, Aircraft, Airmen, Aviation safety, Reporting and recordkeeping requirements.

The Amendment

In consideration of the foregoing, the Federal Aviation Administration amends Chapter I of Title 14, Code of Federal Regulations, as follows:

Part 71—Designation Of Class A, Class B, Class C, Class D, And Class E Airspace Areas; Airways; Routes; And Reporting Points

1. The authority citation for part 71 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40113, 40120, E.O. 10854, 24 FR 9565, 3 CFR, 1959-1963 Comp., p. 389.

~~2. Amend part 71 by adding a note to read as follows:~~

~~Note: For the text of SFAR No. 97, see part 91 of this chapter.~~

JMA 3/18/03

Part 91—General Operating And Flight Rules

2. 3. The authority citation for part 91 continues to read as follows:

JMA 3/18/03

Authority: 49 U.S.C. 106(g), 1155, 40103, 40113, 40120, 44101, 44111, 44701, 44709, 44711, 44712, 44715, 44716, 44717, 44722, 46306, 46315, 46316, 46504, 46506-46507, 47122, 47508, 47528-47531, articles 12 and 29 of the Convention on International Civil Aviation (61 stat. 1180).

71, 95, 121, 125, 129, and 135 by adding SFAR No. 97. JMA 3/18/03

3 ~~4~~. Amend part 91, by adding SFAR No. 97. ~~to read as follows~~: The full text will appear in Part 91. JMA 3/18/03

Special Federal Aviation Regulation No. 97 – Special Operating Rules for the Conduct of Instrument Flight Rules (IFR) Area Navigation (RNAV) Operations using Global Positioning Systems (GPS) in Alaska

Those persons identified in Section 1 may conduct IFR en route RNAV operations in the State of Alaska and its airspace on published air traffic routes using TSO C145a/C146a navigation systems as the only means of IFR navigation. Despite contrary provisions of parts 71, 91, 95, 121, 125, and 135 of this chapter, a person may operate aircraft in accordance with this SFAR if the following requirements are met.

Section 1. Purpose, use, and limitations.

a. This SFAR permits TSO C145a/C146a GPS (RNAV) systems to be used for IFR en route operations in the United States airspace over and near Alaska (as set forth in paragraph c of this section) at Special Minimum En Route Altitudes (MEA) that are outside the operational service volume of ground-based navigation aids, if the aircraft operation also meets the requirements of sections 3 and 4 of this SFAR.

b. Certificate holders and part 91 operators may operate aircraft under this SFAR provided that they comply with the requirements of this SFAR.

c. Operations conducted under this SFAR are limited to United States Airspace within and near the State of Alaska as defined in the following area description:

From 62°00'00.000"N, Long. 141°00'00.00"W.; to Lat. 59°47'54.11"N., Long. 135°28'38.34"W.; to Lat. 56°00'04.11"N., Long. 130°00'07.80"W.; to Lat. 54°43'00.00"N., Long. 130°37'00.00"W.; to Lat. 51°24'00.00"N., Long. 167°49'00.00"W.; to Lat. 50°08'00.00"N., Long. 176°34'00.00"W.; to Lat.

45°42'00.00"N., Long. -162°55'00.00"E.; to Lat. 50°05'00.00"N., Long. -159°00'00.00"E.; to Lat. 54°00'00.00"N., Long. -169°00'00.00"E.; to Lat. 60°00 00.00" N., Long. -180°00' 00.00"E; to Lat. 65°00'00.00"N., Long. 168°58'23.00"W.; to Lat. 90°00'00.00"N., Long. 00°00'0.00"W.; to Lat. 62°00'00.000"N, Long. 141°00'00.00"W.

(d) No person may operate an aircraft under IFR during the en route portion of flight below the standard MEA or at the special MEA unless the operation is conducted in accordance with sections 3 and 4 of this SFAR.

Section 2. Definitions and abbreviations. For the purposes of this SFAR, the following definitions and abbreviations apply.

Area navigation (RNAV). RNAV is a method of navigation that permits aircraft operations on any desired flight path.

Area navigation (RNAV) route. RNAV route is a published route based on RNAV that can be used by suitably equipped aircraft.

Certificate holder. A certificate holder means a person holding a certificate issued under Part 119 or Part 125 of this chapter or holding operations specifications issued under Part 129 of this chapter.

Global Navigation Satellite System (GNSS). GNSS is a world-wide position and time determination system that uses satellite ranging signals to determine user location. It encompasses all satellite ranging technologies, including GPS and additional satellites. Components of the GNSS include GPS, the Global Orbiting Navigation Satellite System, and WAAS satellites.

Global Positioning System (GPS). GPS is a satellite-based radio navigational, positioning, and time transfer system. The system provides highly accurate position and velocity information and precise time on a continuous global basis to properly equipped users.

Minimum crossing altitude (MCA). The minimum crossing altitude (MCA) applies to the operation of an aircraft proceeding to a higher minimum en route altitude when crossing specified fixes.

Required navigation system. Required navigation system means navigation equipment that meets the performance requirements of TSO C145a/C146a navigation systems certified for IFR en route operations.

Route segment. Route segment is a portion of a route bounded on each end by a fix or NAVAID.

Special MEA. Special MEA refers to the minimum en route altitudes, using required navigation systems, on published routes outside the operational service volume of ground-based navigation aids and are depicted on the published Low Altitude and High Altitude En Route Charts using the color blue and with the suffix "G." For example, a GPS MEA of 4000 feet MSL would be depicted using the color blue, as 4000G.

Standard MEA. Standard MEA refers to the minimum en route IFR altitude on published routes that uses ground-based navigation aids and are depicted on the published Low Altitude and High Altitude En Route Charts using the color black.

Station referenced. Station referenced refers to radio navigational aids or fixes that are referenced by ground based navigation facilities such as VOR facilities.

Wide Area Augmentation System (WAAS). WAAS is an augmentation to GPS that calculates GPS integrity and correction data on the ground and uses geo-stationary satellites to broadcast GPS integrity and correction data to GPS/WAAS users and to provide ranging signals. It is a safety critical system consisting of a ground network of reference and integrity monitor data processing sites to assess current GPS performance, as well as a space segment that broadcasts that assessment to GNSS users to support en route through precision approach navigation. Users of the system include all aircraft applying the WAAS data and ranging signal.

Section 3. Operational Requirements.

To operate an aircraft under this SFAR, the following requirements must be met:

a. Training and qualification for operations and maintenance personnel on required navigation equipment used under this SFAR.

b. Use authorized procedures for normal, abnormal, and emergency situations unique to these operations, including degraded navigation capabilities, and satellite system outages.

c. For certificate holders, training of flight crewmembers and other personnel authorized to exercise operational control on the use of those procedures specified in paragraph b of this section.

d. Part 129 operators must have approval from the State of the operator to conduct operations in accordance with this SFAR.

e. In order to operate under this SFAR, a certificate holder must be authorized in operations specifications.

Section 4. Equipment Requirements.

a. The certificate holder must have properly installed, certificated, and functional dual required navigation systems as defined in section 2 of this SFAR for the en route operations covered under this SFAR.

b. When the aircraft is being operated under part 91, the aircraft must be equipped with at least one properly installed, certificated, and functional required navigation system as defined in section 2 of this SFAR for the en route operations covered under this SFAR.

Section 5. Expiration date.

This Special Federal Aviation Regulation will remain in effect until rescinded.

Part 95—IFR ALTITUDES

4. ~~5~~. The authority citation for part 95 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40113, and 14 CFR 11.49 (b)(2).

JMa 3/18/03

~~6. Amend part 95 by adding a note to read as follows:~~

~~Note: For the text of SFAR No. 97, see part 91 of this chapter.~~

JMa 3/18/03

PART 121—OPERATING REQUIREMENTS: DOMESTIC, FLAG, AND SUPPLEMENTAL OPERATIONS

5 ~~9~~. The authority citation for part 121 continues to read as follows: gma 3/18/03

Authority: 49 U.S.C. 106(g), 40113, 40119, 44101, 44701-44702, 44705, 44709-44711, 44713, 44716-44717, 44722, 44901, 44903-44904, 44912, 46105 .

~~10. Amend part 121 by adding a note to read as follows:~~

~~Note: For the text of SFAR No. 97, see part 91 of this chapter.~~ gma 3/18/03

PART 125—CERTIFICATION AND OPERATIONS: AIRPLANES HAVING A SEATING CAPACITY OF 20 OR MORE PASSENGERS OR A MAXIMUM PAYLOAD CAPACITY OF 6,000 POUNDS OR MORE; AND RULES GOVERNING PERSONS ON BOARD SUCH AIRCRAFT

6 ~~11~~. The authority citation for part 125 continues to read as follows: gma 3/18/03

Authority: 49 U.S.C. 106(g), 40113, 44701-44702, 44705, 44710-44711, ~~44713,~~ 44716-44717, 44722.

~~12. Amend part 125 by adding a note to read as follows:~~

~~Note: For the text of SFAR No. 97, see part 91 of this chapter.~~

PART 129—OPERATIONS: FOREIGN AIR CARRIERS AND FOREIGN OPERATORS OF U.S.-REGISTERED AIRCRAFT ENGAGED IN COMMON CARRIAGE

7. ~~13~~. The authority citation for part 129 continues to read as follows: gma 3/18/03

Authority: 49 U.S.C. 106(g), 40104-40105, 40113, 40119, 41706, 44701-44702, 44712, 44716-44717, 44722, 44901-44904, 44906.

~~14. Amend part 129 by adding a note to read as follows:~~

~~Note: For the text of SFAR No. 97, see part 91 of this chapter.~~

JMA 3/18/03

PART 135—OPERATIING REQUIREMENTS: COMMUTER AND ON DEMAND OPERATIONS AND RULES GOVERNING PERSONS ON BOARD SUCH AIRCRAFT

8. ~~15~~. The authority citation for part 135 continues to read as follows:

Authority: 49 U.S.C. 106(g) 41706, 44113, 44701-44702, 44705, 44709, 44711-44713, 44715-44717, 44722.

~~16. Amend part 135 by adding a note to read as follows:~~

~~Note: For the text of SFAR No. 97, see part 91 of this chapter.~~

JMA 3/18/03

Marion C. Blakey
Administrator

Issued in Washington, DC on MAR 13 2003

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