DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 91

[Docket No. 27717; Amdt. No. 91–244]

RIN 2120–AF35

Notification to Air Traffic Control (ATC) of Deviations From ATC Clearances in Response to Traffic Alert and Collision Avoidance System Resolution Advisories

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action codifies the previously announced policy extended to pilots during the initial testing of the Traffic Alert and Collision Avoidance System (TCAS) during the Limited Implementation Plan for TCAS, and during the actual implementation of TCAS under the TCAS Transition Plan (TTP). This policy permitted pilots to deviate from an air traffic control (ATC) clearance, in non-emergency situations, when responding to a TCAS resolution advisory (RA). The language contained in current regulations suggests that deviation from an ATC clearance is authorized only in an emergency situation. The intended effect of this action is to add the TCAS RA as a reason to deviate from a clearance, and to require that whenever a pilot deviates from an ATC clearance, ATC will be advised as soon as possible.

EFFECTIVE DATE: October 30, 1995.

FOR FURTHER INFORMATION CONTACT: Mrs. Ellen Crum, Air Traffic Rules Branch, ATP–230, Airspace Rules and Aeronautical Information Division, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; telephone (202) 267–8783.

SUPPLEMENTARY INFORMATION:

Background

On December 26, 1989, the FAA published a petition for rulemaking, received from the Air Transport Association of America (ATA), that requested the FAA amend section 91.75(a) of the Federal Aviation Regulations (FAR) to permit a pilot to deviate from an ATC clearance when responding to a TCAS RA (54 FR 52951). (Effective August 18, 1990, part 91 of the FAR was revised (54 FR 34284; August 18, 1989) to renumber all of its sections. Section 91.75(a) was renumbered as section 91.123(a).)

Section 91.123 of the FAR states, in pertinent part, that each pilot in command who, in an emergency, deviates from an ATC clearance shall notify ATC of that deviation as soon as possible. The ATA petition states that TCAS is an advisory system and not an emergency system. The ATA feels that pilots should be able to comply with a TCAS RA without exercising emergency authority. The ATA petition mirrors current FAA policy and guidance for the use of TCAS II. The petition drew no negative comments and one positive comment from the Airline Pilots Association (ALPA) that supported the proposal.

On April 9, 1994, the FAA published a Notice of Proposed Rulemaking (59 FR 22142, Notice No. 94–16) that proposed to amend Section 91.123(a) of the FAR in accordance with the ATA petition. In addition, this NPRM proposed to amend § 91.123(c) of the FAR to require pilots to notify ATC as soon as possible if they deviate from a clearance in response to a RA. The comment period for this NPRM closed on May 31, 1994 and comments are discussed later in this document.

Currently, regulations do not provide for any deviation from an ATC clearance except in an emergency situation. However, during the initial trial and implementation of TCAS II, the FAA notified pilots that no enforcement action would be initiated if the pilot deviated from an ATC clearance when responding to a TCAS RA. A letter signed by former FAA Administrator James B. Busey was published as Appendix C to the TTP Project Management Plan, dated August 1, 1990. The FAA also provided procedural guidance in Advisory Circular 120–55, ''Air Carrier Operational Approval and Use of TCAS II'' dated October 23, 1991, and later amended as AC 120–55A dated August 27, 1993. The policy and guidance proved successful during the testing and implementation of TCAS II.

Related Agency Actions

On January 10, 1989, the FAA published a final rule (54 FR 940), known as the ''TCAS rule,'' that required airplanes having more than 30 passenger seats and operated under part 121, 125, or 129 to be equipped with TCAS II by December 30, 1991. The TCAS rule also required airplanes having 10 to 30 passenger seats and operated under part 129 or 135 to be equipped with TCAS I by February 9, 1995; this compliance date was subsequently extended to December 31, 1995 (59 FR 67584, December 29, 1994). On April 9, 1990, the FAA amended the TCAS rule by revising the schedule for the installation of TCAS II equipment in airplanes having more than 30 passenger seats (55 FR 13242). Operators of airplanes having more than 30 passenger seats and operated under part 121 were required to install TCAS II equipment in accordance with a phased-in schedule so that 100% of an operator's covered airplanes would be equipped by December 30, 1993. Operations conducted under part 125 or 129 with airplanes having more than 30 passenger seats were also required to install TCAS II equipment by December 30, 1993.

TCAS

TCAS is airborne equipment that interrogates ATC transponders of other aircraft nearby. By computer analysis of the replies, TCAS equipment determines which transponder-equipped aircraft are potential collision hazards and provides appropriate advisory information to the flight crew. If a TCAS-equipped airplane interrogates an aircraft that is equipped with a transponder without altitude reporting capability (Mode A), range and azimuth information will be provided to the TCAS-equipped aircraft. If the interrogated aircraft is equipped with an altitude encoding transponder (Mode C or Mode S), then relative altitude information will be provided in addition to range and azimuth. TCAS equipment cannot detect the presence of an aircraft that is not equipped with a transponder.

TCAS equipment performs proximity tests on each detected target. If the path of a target is projected to pass within certain horizontal and vertical distance criteria, then that target is declared an intruder. An intruder that is determined to pose an even greater risk of collision is declared a threat. When a threat is declared, TCAS equipment will determine the appropriate direction that the TCAS-equipped aircraft must move (climb or descend) and the vertical rate that must be maintained to achieve separation from the threat.

There are two classes of advisories provided by TCAS equipment. The first class, the ''traffic advisory'' (TA), provides supplemental information to the pilot that aids in visual detection of other aircraft. TA's include the range, bearing, and if the intruder has altitude-reporting equipment, the altitude of intruding aircraft relative to the TCAS equipped aircraft. TA's without altitude information may also be provided from non-altitude reporting transponder-equipped intruders. TCAS I equipment provides TA's that only assist the pilot in visually detecting an intruder aircraft. The second class of advisory, the ''resolution advisory'' (RA), indicates

the vertical direction and rate that must be achieved by an aircraft in order to prevent insufficient separation. When an RA occurs, the pilot flying should respond by direct attention to RA displays and should maneuver as indicated unless doing so would jeopardize the safe operation of the flight or unless the flight crew has definitive visual acquisition of the aircraft causing the RA. TCAS II equipment provides both traffic and resolution advisories only in the vertical plane.

The Rule

This rule accomplishes two things. First, it authorizes deviations from an ATC clearance when responding to a TCAS RA. Secondly, it requires pilots to notify ATC as soon as possible if they deviate from a clearance in response to a TCAS RA. This action codifies existing policies and practices that were initiated during the TCAS implementation period.

Discussion of Comments

Interested persons were invited to participate in this rulemaking action by submitting written data, views, or arguments. All comments received during the comment period were considered before making a determination regarding this final rule. The following is a discussion of the comments received.

Five comments were received in response to the NPRM. Of this number, three comments were received from associations and two from individuals. Most commenters supported amending FAR 91.123(a); however, three commenters opposed amending FAR 91.123(c).

I. Compliance With ATC Clearances

Most commenters support this amendment which allows flight crews to deviate from an air traffic control clearance in response to a TCAS RA. The Air Transport Association of America (ATA) and the Air Line Pilots Association (ALPA) stated that the proposal is fully consistent with the ATA petition referenced in the Notice. ATA believes this action will remove a potential obstacle to the full use of TCAS by allowing flight crews to follow a TCAS RA without pausing to determine if the RA maneuver would require the crew to declare an emergency. Another commenter states that he believes safety would be improved with this amendment, and supports it. The National Air Traffic Controllers Association (NATCA) did not comment specifically on this proposed change, but offers general comments stating they do not believe the air traffic system is as safe today as it was prior to the introduction of TCAS.

On December 30, 1987, the President of the United States signed Public Law 100–223 which, among other provisions, amended the FAA Act of 1958, Section 601, by adding a new paragraph (f) entitled ''Collision Avoidance Systems.'' This section requires TCAS II on ''each civil aircraft of more than 30 seats and which is used to provide air transportation of passengers, including intrastate air transportation of passengers.'' The amendment does not provide for the exception of any class of civil operation or operator, U.S. or foreign, from the basic rule. Consequently, the FAA promulgated numerous regulations (several of which have been referenced earlier in this document) pertaining to TCAS. In addition, the TTP, along with the Separation Assurance Task Force (SATF), were established to investigate and resolve TCAS related problems in the NAS which are discovered during implementation. Participants in this program include the FAA, ATA, Regional Airline Association, ALPA, Allied Pilots Association, NATCA, Transport Canada, TCAS equipment manufacturers and the major, national and regional air carriers.

The FAA disagrees with NATCA's view that TCAS has compromised safety. Since the introduction of TCAS into the NAS, both air traffic controllers and flight crews have adjusted their operating procedures. With the assistance and cooperation of flight crews and air traffic controllers, surveys have been collected and volumes of data analyzed. As issues surface, the TTP provides guidance for timely resolution that has resulted in better training for both pilots and controllers, the issuance of two advisory circulars addressing the use of TCAS, amendments to the controllers handbook and the Airman's Information Manual (AIM), and updating the TCAS software in order to eliminate false and nuisance RA's.

At the second annual International TCAS Conference held in Reston, Virginia in September, 1993, TCAS was lauded by many flight crews as a safety enhancing cockpit device.

For example, TCAS was credited by the captain of a major air carrier for saving the lives of nearly 700 people in two B747 aircraft traveling over the Pacific Ocean.

The TCAS Industry Alert Bulletin #5, issued February 18, 1994, states that during the prior two years, 16 encounters had occurred wherein TCAS II displayed unnecessary resolution advisories that directed pilots to cross through each other's altitudes. The RA's were unnecessary because the aircraft were safely separated by the ATC system. In each of these encounters, the TCAS logic detected the high vertical closure rate of the two aircraft and predicted the close proximity of the aircraft without knowing that the aircraft intended to level off 1000 feet apart in altitude.

In order to eliminate these unnecessary RA's, a new version of the TCAS logic (Version 6.04A) was created and installation required by 12/31/94. This logic will not generate altitude-crossing RAs when aircraft level off within 1000 feet vertically of one another. None of the 16 encounters previously mentioned would have resulted in altitude-crossing RAs with the Version 6.04A logic installed.

II. ATC Notification

ATA and ALPA oppose this proposal which requires flight crews to inform ATC as soon as possible when deviating from an ATC clearance in response to a TCAS RA. ALPA states they do not oppose notifying ATC of any deviation caused by responding to a TCAS RA; however, they believe the proposal may imply a sense of urgency for pilots to advise ATC of a deviation at a time when complete attention must be focused on identifying the intruder and responding to the RA. ALPA states this sense of urgency may also be prompted by a concern over possible enforcement action should the crew neglect to report the event due to a directed frequency change or some other unanticipated event. ATA comments that the phrase ''as soon as possible'' implies that notification to ATC of a deviation should take place prior to executing the maneuver. ATA suggests the word ''practical'' be used in lieu of ''possible'' which would be consistent with the AIM.

The FAA does not agree with replacing the word ''possible'' with ''practical''. The word ''possible'' does not mean that the notification has to take place before the pilot has executed the appropriate maneuver. ''Possible'' does, however, contain a greater urgency than the word ''practical,'' and would require notification to ATC of the deviation as soon as the pilot maneuvers the aircraft to a safe operating environment. The language is consistent with current wording contained in the regulation that requires a flight crew who, in an emergency, deviates from an ATC clearance to notify ATC as soon as possible. If a pilot deviates from an ATC clearance, the controller must be given timely notification of that deviation so that appropriate instructions and/or

advisories can be issued to ensure a safe, orderly, and expeditious flow of traffic. By advising ATC as soon as possible that an RA has been received, the controller can evaluate the situation, determine the most appropriate and safe course of action, and issue alternate instructions if necessary.

ALPA states that the requirement to report a deviation from an ATC clearance as a result of an RA is stated in the Airman's Information Manual (AIM), FAA Advisory Circular 120–55, and each TCAS equipped aircraft flight operations manual. Consequently, the commenter believes this proposal is redundant and unnecessary.

The FAA acknowledges there are several FAA publications which explain and encourage pilots to communicate with ATC when deviating from a clearance upon receipt of a RA. However, the FAA has determined that safety within the NAS can only be maintained if pilots are required to advise controllers when a deviation from an ATC clearance has occurred as a result of an RA.

NATCA opposes this rule change due to concerns for the safety of persons operating in the NAS. However, NATCA does not provide specific instances of how or where safety is compromised, but merely reiterates their ongoing concern with the TCAS program.

The FAA has determined that pilot notification of a deviation from a clearance due to a TCAS RA enhances safety in the NAS. Air traffic controllers base their control and traffic management decisions on the expectation that pilots will comply with ATC-assigned routes, altitudes, and other clearances. If a pilot deviates from an ATC clearance, the controller must be given timely notification of that deviation so that appropriate instructions and/or advisories can be issued to ensure a safe, orderly, and expeditious flow of traffic. By advising ATC as soon as possible that an RA has been received, the controller can evaluate the situation, determine the most appropriate and safe course of action, and issue alternate instructions if necessary.

III. Resolution Advisory Maneuver—An Emergency?

One commenter contends that any deviation from an ATC clearance is an emergency; therefore, this rule change is not needed. The commenter believes the cause of the deviation need not be an emergency, but the mere fact that an aircraft is not following an ATC clearance should be considered an emergency. The commenter suggested the phrase ''in an emergency'' be deleted from the rule; thereby, any time an aircraft deviates from an ATC clearance, regardless of the reason, ATC will be notified.

The FAA disagrees that an RA maneuver is an emergency action. TCAS is designed to serve as a backup (safety net) to visual collision avoidance, application of ''right of way rules'', and air traffic separation services. Since its inception, TCAS has been considered by the FAA and industry to be a supplement to the ATC system that provides flight guidance to ensure adequate separation from other aircraft. Additionally, although the suggestion to remove the word ''emergency'' from the language of the regulations is outside the scope of this rulemaking, the FAA will consider the merits of the comment for possible future rulemaking.

Regulatory Evaluation Summary

Executive Order 12866 established the requirement that, within the extent permitted by law, a Federal regulatory action may be undertaken only if the potential benefits to society for the regulation outweigh the potential costs to society. In response to this requirement, and in accordance with Department of Transportation policies and procedures, the FAA has estimated the anticipated benefits and costs of this rulemaking action. The results are stated in this section. The FAA has determined that this rule change is not a ''significant rulemaking action,'' as defined by Executive Order 12866 (Regulatory Planning and Review).

The FAA has determined that this rule will be cost-beneficial because it imposes no costs and would promote air safety. There will not be any changes in notification or reporting requirements for deviations from ATC clearances that are necessary to avoid potential collision hazards. This action codifies a previously announced policy that pilots who deviate from their assigned altitudes in response to a TCAS RA will provide timely notice, as soon as possible, to air traffic control. Such non-written, voice notification will give controllers an opportunity to resolve any conflicts resulting from a TCAS II-equipped aircraft being at other than the assigned altitude.

International Trade Impact Statement

This action will not impose a competitive disadvantage to either U.S. air carriers doing business abroad or foreign air carriers doing business in the United States. This assessment is based on the fact that this rule will not impose additional costs on either U.S. or foreign air carriers.

Regulatory Flexibility Determination

In accordance with the Regulatory Flexibility Act of 1980, the FAA has determined that this action will not have a significant economic impact, positive or negative, on a substantial number of small entities. This assessment is based on the fact action will not impose any additional cost on aircraft operators.

Paperwork Reduction Act

There are no requirements for information collection associated with this action that would require approval from the Office of Management and Budget pursuant to the Paperwork Reduction Act of 1980 (Pub. L. 96–511).

Federalism Implications

This regulation will not have substantial direct effects 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. Therefore, in accordance with Executive Order 12612, it is determined that this rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

International Civil Aviation Organization and Joint Aviation Regulations

In keeping with the U.S. obligations under the Convention on International Civil Aviation (ICAO), it is FAA policy to comply with ICAO Standards and Recommended Practices (SARP) to the maximum extent practicable. The FAA has determined that this action complies with the ICAO SARP.

Conclusion

For the reasons discussed in the preamble, and based on the findings in the Regulatory Flexibility Determination and the International Trade Impact Analysis, the FAA has determined that this regulation is not a ''significant regulatory action'' under Executive Order 12866. This regulation is not considered significant under DOT Order 2100.5, Policies and Procedures (44 FR 11034; February 26, 1979). In addition, the FAA certifies that this regulation will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 91

Air traffic control, Aircraft, Aviation safety.

The Amendment

In consideration of the foregoing, the Federal Aviation Administration amends part 91 of the Federal Aviation Regulations (14 CFR part 91) as follows:

PART 91—GENERAL OPERATING AND FLIGHT RULES

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

Authority: 42 U.S.C. 4321 *et seq.*; 49 U.S.C. app. 1301, 1303, 1344, 1348, 1352 through 1355, 1401, 1421 through 1431, 1471, 1472, 1502, 1510, 1522, and 2121 through 2125, 2157, 2158; 49 U.S.C. 106(g); articles 12, 29, 31, and 32(a) of the Convention on International Civil Aviation (61 Stat. 1180); E.O. 11514, 35 FR 4247, 3 CFR, 1966–1970 Comp., p. 902.

2. Section 91.123 is amended by revising paragraphs (a) and (c) to read as follows:

§ 91.123 Compliance with ATC clearances and instructions.

(a) When an ATC clearance has been obtained, no pilot in command may deviate from that clearance unless an amended clearance is obtained, an emergency exists, or the deviation is in response to a traffic alert and collision avoidance system resolution advisory. However, except in Class A airspace, a pilot may cancel an IFR flight plan if the operation is being conducted in VFR weather conditions. When a pilot is uncertain of an ATC clearance, that pilot shall immediately request clarification from ATC.

* * * * *

(c) Each pilot in command who, in an emergency, or in response to a traffic alert and collision avoidance system resolution advisory, deviates from an ATC clearance or instruction shall notify ATC of that deviation as soon as possible.

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Issued in Washington, D.C. on September 13, 1995.

David R. Hinson,

Administrator.

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