See 2 corrections

[Docket No. 9471, Amdt. 71-8; 91-118]

PART 71—DESIGNATION OF FEDERAL AIRWAYS, AREA LOW ROUTES, CONTROLLED AIRSPACE, AND REPORTING POINTS

PART 91—GENERAL OPERATING AND FLIGHT RULES

ATC Transponder and Automatic Pressure Altitude Reporting Equipment Requirements

The purpose of these amendments to parts 71 and 91 of the "Federal Aviation Regulations" is to require aircraft operating in certain designated controlled airspace to be equipped with ATC (air traffic control) transponder and associated automatic pressure altitude reporting equipment, and to make related conforming amendments.

These amendments are based upon notice 69-9, published in the FEDERAL REGISTER on March 14, 1969 (34 FR 5259), supplemental notice 72-12, published in the FEDERAL REGISTER on April 15, 1972 (37 FR 7527) and supplemental notice 72-12A, published in the FEDERAL REGISTER on June 24, 1972 (37 FR 12508). These notices, in turn, were based on advance notice of proposed rulemaking 65-9, published in the FEDERAL REGISTER on April 29, 1965, which included long-term proposals concerning the possible use of improved ATC transponders in the national airspace system. In addition, these amendments include conforming amendments based on the above notices and on notice 71-10 published in the FEDERAL REGISTER on March 30, 1971. Interested persons have been afforded a opportunity to comment on the amendments contained herein, and all relevant matter submitted has been considered in the issuance of these amendments.

I. *Background of these amendments.*—Notice 69-9, issued March 3, 1969, proposed to require that all aircraft operating in certain designated controlled airspace be equipped with an improved radar beacon transponder having a mode 3/A 4096 code capability, and having a mode C automatic altitude reporting capability (e.g., automatic pressure altitude reporting equipment). The objective of the proposal was to improve air traffic control system effectiveness through additional IFR beacon tracking and automatic altitude reporting capability. The proposal was also designed to reduce the midair collision potential by requiring certain VFR flights operating in selected airspace to respond automatically to interrogations by transmitting position and altitude. Specifically, notice 69-9 proposed that a 4096 code mode 3/A transponder and mode C automatic altitude reporting capability be required, effective January 1, 1973, of both VFR and IFR aircraft in controlled airspace at or above 10,000 feet m.s.l. (mean sea level) in the 48 contiguous States; in positive control airspace; and in specified terminal airspace.

Most comments received in response to notice 69-9 were unfavorable (approximately 80 percent), and stated that the proposed rule would impose excessive equipment requirements or airspace restrictions on certain classes of users. In general, the favorable comments received in response to notice 69-9 were based upon an anticipated increase in safety and in airspace utilization. The concern on the part of many users, along with development subsequent to the issuance of that notice, caused the FAA to review the scope of the proposed amendments. After weighing the original objectives along with the comments received in response to notice 69-9, the FAA concluded that its original proposal might be more restrictive than necessary and determined that further opportunity should be afforded to interested persons to submit comments on a modified, less restrictive concept of improved transponder employment.

Consequently, supplemental notice 72-12 was issued on April 11, 1972, containing certain new proposals pertaining to the airspace and conditions in which the improved transponder would be required. The supplemental notice differed from notice 69-9 in that it proposed to require the improved transponder in positive control areas and controlled airspace above 12,500 feet m.s.l. for en route operations, excluding airspace less than 1,500 feet a.g.l. (above ground level). The proposed use of the improved transponder in terminal airspace was also relaxed under the supplemental notice, since, while all aircraft, including helicopters, would be required to have the improved transponder for operations in

AT

both group I and II TCA's, pilots operating VFR and not desiring separation service would not need to communicate with ATC in the group II TCA's. In 42 other ARTS III equipped "terminal areas," any aircraft being provided separation service would not, under the supplemental notice, be required to be transponder equipped. Authority for the granting of deviations by ATC was also proposed. The other significant relaxation in the supplemental notice extended the implementation date to January 1, 1974, for terminal airspace and July 1, 1975, for en route airspace.

Paralleling this background was a separate notice of proposed rulemaking (notice 71-10) which proposed to provide new technical standards for airborne ATC transponder equipment and to require that transponders in aircraft meet TSO standards. This notice was published in the FEDERAL REGISTER on March 30, 1971 (36 FR 5853) and was followed by regulations published on December 27, 1972, amending parts 37, 43, 91, 121, 127, and 135 of the "Federal Aviation Regulations." The amendment to part 91 added, among other requirements, a new § 91.24, requiring ATC transponder equipment installed after January 1, 1974, or used after July 1, 1975, to meet the standards in TSO-C74b or any class of TSO-C74c, as appropriate, except that the Administrator may approve the continued use of TSO-C74 or TSO-C74a equipment after July 1, 1975, under certain conditions.

The amendment issued herein pulls these two separate regulatory programs together in § 91.24 and makes conforming changes in part 91 to insure consistency among the several transponder requirements already in that part. Specifically, the regulatory language in current § 91.24 is redesignated as § 91.24(a), and the appropriate cross reference to § 91.24 in § 91.177 is amended accordingly to refer to § 91.24(a) only.

The requirements proposed in notice 72-12 concerning the need for the improved transponder and associated automatic pressure altitude reporting equipment in specified airspace are issued hereunder in new § 91.24(b) so that the relationship between these requirements (and their respective dates of compliance) and the TSO standards and related requirements (and their respective dates of compliance) in § 91.24(a) can be more easily seen and understood by aircraft operators. The ATC deviation authority proposed in notice 72-12 is contained, in shortened form, in new § 91.24(c). In order to prevent apparent conflicts between the other transponder requirements currently in part 91 and the amendments contained in § 91.24, appropriate editorial cross references to § 91.24 are made in §§ 91.90, 91.97, and 91.99. No substantive change is made by these editorial amendments. The "terminal area" concept in notice 72-12 is issued, in slightly relaxed form, under the name "Group III Terminal Control Area" (see discussion below under "Miscellaneous Comments").

II. *Summary of requirements added by this amendment.*—The regulations should be consulted for the details of the new requirements. The following summary is provided only to present an outline of the regulations as changed by this amendment.

This amendment specifies the controlled airspace within which two types of equipment are required. These are (i) a mode 3/A 4096 code transponder, and (ii) automatic pressure altitude reporting equipment. No change is made to the floor or other configuration of any controlled airspace in this amendment. This amendment does not designate new terminal control areas.

After the pertinent compliance dates of these requirements (see discussion under paragraph III below), the new equipment is required in the following airspace under this amendment:

A. All controlled airspace of the 48 contiguous States and the District of Columbia that is above 12,500 feet m.s.l., excluding the airspace at and below 2,500 feet a.g.l. Gliders are excluded from this requirement up to 18,000 feet m.s.l., which is the floor of the positive control area.

B. Terminal control areas regulated under § 91.90. These include terminal airspace in which the current or projected traffic density is great enough to require the new equipment for protection to aircraft and for system efficiency. Helicopters operating at or below 1,000 feet a.g.l. under a letter of agreement are excluded from this requirement in all terminal control areas. Terminal control areas include the following:

1. *Group I terminal control areas.*—Nine of these high activity areas have been designated, including Atlanta, Boston, Chicago, Dallas-Fort Worth, Los Angeles, Miami, New York, San Francisco-Oakland, and Washington National. These are the only terminal control areas, of any classification, now designated.

Operation in these areas requires both the new equipment and ATC authorization prior to entry (in addition to the other requirements in § 91.90(a)).

2. *Group II terminal control areas.*—Twelve locations are being considered for designation as group II terminal control areas. These include Cleveland, Denver, Detroit, Houston, Kansas City, Las Vegas, Minneapolis, New Orleans, Philadelphia, Pittsburgh, Seattle, and St. Louis. These designations would be accomplished by separate rulemaking action with notice and public procedure. As in the case of group I terminal control areas, there is no general exception (other than for helicopters, as mentioned above) to the requirement for the new equipment in group II terminal control areas. Unlike group I terminal control areas, however, an ATC authorization prior to entry is not required for VFR aircraft that do not land or takeoff within the group II terminal control area. This provides needed flexibility for VFR flights that do not wish to communicate with or receive separation service from an ATC facility, and that are transiting the group II terminal control area without landing or taking off. The altitude data provided by all aircraft will assist controllers in vectoring aircraft receiving separation service clear of aircraft that are not receiving separation service.

3. *Group III terminal control areas.*—As stated in notice 72-12, 42 locations are being considered for designation as terminal areas (herein redesignated as group III terminal control areas). These locations include Albany, Albuquerque, Baltimore, Birmingham, Buffalo, Burbank, Charlotte, Cincinnati, Columbus, Dayton, Des Moines, El Paso, Hartford, Honolulu, Indianapolis, Jacksonville, Louisville, Memphis, Milwaukee, Nashville, Norfolk, Oklahoma City, Omaha, Ontario, Orlando, Phoenix, Portland, Providence, Raleigh-Durham, Rochester, Sacramento, Salt Lake City, San Antonio, San Diego, San Juan, Santa Ana/Long Beach, Shreveport, Syracuse, Tampa, Tucson, Washington-Dulles. As in the case of group II terminal control areas, these group III terminal control areas will be designated in separate rulemaking actions with notice and opportunity for public participation. Unlike group I and group II terminal control areas, the new equipment is not required if two-way radio communications are maintained within the terminal control area between the aircraft and the ATC facility, and the pilot provides position, altitude and proposed flight path prior to entry.

III. *Relation to TSO requirements: Chronology of compliance dates.*—Since the requirements in this amendment are closely related to the recently adopted transponder requirements in § 91.24, particularly with respect to compliance dates, a combined summary of the chronological effect of the regulations is furnished. Some repetition of the above discussion exists in order to permit demonstration of the combined effect of the compliance dates in current § 91.24 and those in this amendment. This summary contains only the broad outline of the requirements. The regulations should be consulted for the details of these requirements and for the exceptions and deviation provisions in the regulations. The following requirements come into effect after the following dates:

1. After January 1, 1974, § 91.24(a) prohibits installation of a transponder in an aircraft (not previously so equipped) unless that transponder has been shown to meet specified TSO standards. This applies only to U.S. registered civil aircraft, and thus does not apply to foreign registered aircraft or to public aircraft such as military aircraft of the United States. This installation requirement applies regardless of the airspace to be used by the aircraft. It does not involve automatic pressure altitude reporting equipment. Transponders installed on or before January 1, 1974, in any aircraft, or after that date in aircraft that were previously transponder equipped, may continue to be used, in U.S. registered civil aircraft, without meeting TSO standards, through July 1, 1975.

2. After July 1, 1974, § 91.24(b) requires that aircraft operating in group I terminal control areas be equipped with mode 3/A 4096 code transponders and associated automatic pressure altitude reporting equipment. Unlike § 91.24(a),

discussed above, this applies to all aircraft operators including foreign and public aircraft, and is thus not limited to U.S. registered civil aircraft. July 1, 1974, is, therefore, the first date after which aircraft having transponders that do not have both 4096 codes and compatibility with an encoder (that must also meet § 91.36 under the current regulations) are excluded from operation in group I TCA's (subject to the exceptions and deviation authority in the regulations), regardless of the date of installation of the transponder in the aircraft. Transponders meeting the specified TSO standards will be in compliance with the transponder aspect of this requirement for group I TCA's.

3. After January 1, 1975, § 91.24(b) requires that all aircraft, including foreign aircraft and public aircraft as well as U.S. registered civil aircraft, be equipped with a transponder having mode 3/A 4096 code capability and automatic pressure altitude reporting equipment in order to operate in group II terminal control areas and group III terminal control areas (when they are established, and subject to the exceptions and deviation authority in the regulations). Transponders meeting the TSO standards, discussed above, will meet the transponder aspects of this requirement. Transponders not meeting the TSO standards but still having mode 3/A 4096 code capability (and compatibility with an encoder that must also meet § 91.36) may be used in compliance with this requirement (through July 1, 1975, as discussed below). Regardless of whether the TSO standards are met, the aircraft must, after January 1, 1975, have automatic airborne altitude reporting equipment to operate in group II and group III TCA's (subject to the exceptions and deviation authority in the regulations). This affects all operators. January 1, 1975, is thus the first date after which aircraft having transponders that do not have both 4096 codes and compatibility with an encoder (that must also meet § 91.36) are excluded from operation in group II and group III TCA's (subject to the exceptions and deviation authority in the regulations), regardless of the date of installation of the transponder in the aircraft. Transponders meeting the specified TSO standards will be in compliance with the transponder aspect of this requirement for group II and group III TCA's.

4. After July 1, 1975, two new requirements come into effect. The first is the requirement in § 91.24(a) that any transponder used in any U.S. airspace must have been shown to meet TSO standards regardless of the date of installation of the transponder. After that date, transponders not shown to be in compliance need not be removed from the aircraft but may not be used, in any U.S. airspace, regardless of installation date. This regulation affects U.S. registered civil aircraft only. It does not require automatic pressure altitude reporting equipment. The second requirement effective after July 1, 1975, is the requirement in § 91.24(b) that mode 3/A 4096 code transponders and automatic airborne altitude reporting equipment be used in all controlled airspace of the 48 States and the District of Columbia, above 12,500 ft m.s.l. (and above 2,500 ft a.g.l.). U.S. registered civil aircraft must comply with the transponder aspect of this operating requirement by showing compliance with TSO standards (under § 91.24(a)), while foreign and public aircraft would comply if equipped with any mode 3/A 4096 code transponder having compatibility with an encoder (that must also meet § 91.36).

IV. *General comments concerning costs and benefits of improved transponders and associated automatic pressure altitude reporting equipment.*—Numerous comments of a general nature were received stating that the cost of the proposed rule changes could not be justified by the benefits therefrom. These general comments stated that requiring improved transponders and associated automatic pressure altitude reporting equipment in the specified airspace goes beyond the point of diminishing returns, is not justified by near midair collision statistics, conflicts unnecessarily with the FAA's statutory duty to encourage the development of aviation, and will be unnecessarily damaging to the less sophisticated segments of general aviation that now use positive control airspace, all without a corresponding significant benefit to air traffic control system safety or efficiency. While certain of these comments conceded that automatic altitude reporting had some value in heavily used airspace around airports, nearly all of these comments stated that the traffic volume in en route airspace, particularly in the western part of the United States, is far less than that needed to justify the required use of such equipment by all users of that airspace.

In response to these general comments, it is noted that significant relaxations have been made in these amendments when compared with those proposed in supplemental notice 72–12. After considerable study, the FAA believes that the air traffic control safety and efficiency benefits from these amendments, as changed from the notice, outweigh the costs on affected users, that these benefits will become far greater if projected air traffic growth rates are reasonably accurate, while at the same time the costs of compliance will decrease as manufacturers respond to the need for the new equipment. It is also probable that the overall costs paid by all airspace users for further delay in setting in motion the regulatory basis for altitude reporting capability will exceed the costs of acting now to anticipate, rather than react to, the results of increasing traffic demands. In short, it is believed that the compliance times specified herein are reasonable, and that nearly all persons who opposed the scope and timing of the regulations proposed in notice 72–12 would be even less satisfied with solutions made necessary by further delay in implementing the amendments issued herein.

V. *Specific requests for relaxation of notice 72–12.*—Several requests for relaxation of notice 72–12 were received. These included the following specific arguments:

1. The compliance times are too restrictive and should be relaxed. The FAA agrees in part and has set back the compliance date for group I terminal control areas from January 1, 1974, to July 1, 1974, has delayed the compliance date for group II terminal control areas from January 1, 1974, to January 1, 1975, and has also extended the time for compliance in terminal areas (relabeled hereunder as group III terminal control areas as further discussed below) from January 1, 1974, to January 1, 1975. However, the FAA does not believe that such extension is needed with respect to the date for other controlled airspace. The date for such airspace remains as proposed (July 1, 1975). In establishing the compliance dates in this amendment, the FAA has had extensive consultation, not only with aircraft operators but also with manufacturers and suppliers of the required new equipment. Industry ability to meet the demand for equipment required by this amendment, within the compliance periods, was fully considered in addition to an analysis of the numbers of aircraft in the civil fleet that would be likely to be affected, in the different specified airspace, on the respective compliance dates.

2. The benefits of an automated air traffic control system should lead to fewer restrictions, not more. Specifically, it is argued that the benefits otherwise derived from NAS en route stage A and the automated radar terminal systems should allow controllers to handle increased traffic without the need for automatic altitude reporting transponders. It is correct that the benefits of improvements in ground based equipment should help to retard the rate at which increasing restrictions are placed on aircraft not having the improved transponder and associated automatic pressure altitude reporting equipment. However, automated ground equipment is not viewed as a substitute for automatic airborne equipment in the airspace covered by this amendment, in view of the current and projected air traffic control workload in such airspace. Because of this traffic density, and as stated in notices 69–9 and 72–12, the implementation of an automatic pressure altitude reporting requirement provides the following benefits to the ATC system: Improved ATC system safety by automatically displaying the altitude of all aircraft operating in selected airspace; reduced midair collision potential through eliminating previously unknown integral data; reduced volume of communication by eliminating the need for oral altitude reports; improved utilization of airspace through continuous altitude data on climbing and descending aircraft; increased effectiveness through greater controller selectivity in viewing targets; and reduced number of traffic advisories or avoidance vectors during the provision of radar service.

3. The requirement for 12 hours' advance notice for operation without an improved transponder and automatic altitude reporting equipment is an unnecessary burden, particularly in view of the benefits to the system safety and efficiency from improvements in ground

equipment aided by the use of automatic altitude reporting by other aircraft. The FAA has reconsidered this aspect of the proposed regulations and agrees that the advanced notice provision can be reduced to 4 hours. This will benefit pilots since proposed arrival and departure times can be estimated more accurately, and will permit ATC to make a more realistic assessment of the traffic expected at the proposed time of operation. Weather, staffing, and related factors are more predictable 4 hours in advance than they would be if a 12-hour advance notice period were required. The FAA does not believe that the requirement for some advance notice should be eliminated. Without advance notice, controllers would be required to approve or deny entrance to specified airspace on a moment's notice. It is believed that this would lead to excessive communication and additional workload to the detriment of ATC services available to transponder equipped aircraft. The FAA points out that the 4-hour provision is significantly less restrictive than the 4-day advance notice required under § 91.97(b) for operation in a positive control area by nonconforming aircraft and that, for the first time, a deviation authority is provided for terminal control areas. It should be noted, however, that the deviation authority in § 91.24(c) applies only to the provisions of § 91.24(b) concerning the need for mode 3/A 4096 code transponders and associated automatic pressure altitude reporting equipment in the specified airspace. The deviation authority does not apply to the prohibition in § 91.24(a) against the use of transponders that do not meet TSO standards, in any airspace, and does not apply to the installation of nonconforming transponders. Thus, while ATC may permit an aircraft with a malfunctioning transponder or with no transponder to operate in the specified airspace, ATC may not permit the use in that airspace (or in any other airspace) of a transponder in a U.S. registered civil aircraft that has not been shown to meet TSO standards as prescribed in § 91.24(a) after the dates specified in that paragraph.

4. En route airspace does not require automatic pressure altitude reporting equipment for all aircraft because (a) altitude changes are less frequent than in terminal airspace, and (b) en route communications are less congested than terminal airspace, so that there is sufficient time for verbal altitude reporting. Leaving aside the question of which precise threshold altitude to select (see discussion below), the FAA does not agree with the comment with respect to en route airspace at altitudes used by high performance aircraft. This is due to the combined effect of three factors: The high closure rates now possible at these en route altitudes, the projected increases of traffic at these altitudes, and the resulting decreased acceptability of reliance on verbal altitude reporting as the only source of altitude information at these altitudes.

5. The proposed en route altitude floor for automatic pressure altitude reporting equipment (12,500 ft m.s.l. and 1,500 ft a.g.l.) should be raised. The comments included specific recommendations as to altitude floor, and included the request that the requirement be restricted to air carrier aircraft. The comments also stressed the restrictive effect of the proposed altitude on operations in mountainous areas. The FAA believes that the proposed floor is justified by the traffic separation problems of high performance en route traffic and should not be raised. However, the particular difficulty posed on mountain routes is recognized. This amendment accordingly raises the 1,500-ft a.g.l. floor to 2,500 ft a.g.l. In a related comment, it was suggested that the words "at or above" 12,500 ft be changed to "above" 12,500 ft so as to free the 12,500-ft westbound VFR cruising altitude from the transponder requirement and make the transponder requirement consistent with the oxygen requirement in § 91.32 (a)(1). The FAA agrees with this comment and has incorporated this change in § 91.24 (b) and (b)(4).

6. This amendment, like the current regulation (§ 91.90), should not apply, within terminal control areas, to IFR flights operating to or from a secondary airport in the TCA, or to IFR flights operating to or from an airport outside, but close to, the TCA when the commonly used procedures for that airport require flight in the TCA. The FAA does not believe that the current and projected air traffic control problems in terminal control areas justify continuing these two blanket exceptions. However, where air traffic control can be safely and efficiently exercised without automatic pressure altitude reporting equipment, or without a transponder, deviations may be issued on an individual or continuing basis. The FAA believes that this provides the most flexible and equitable means of balancing the continuing need for aircraft utility at minimum expense to airspace users against the need for assuring continued air traffic control safety and efficiency under increasing ATC workloads.

7. The requirement for an ATC authorization prior to entry into a group I or group II terminal control area makes automatic altitude reporting unnecessary. The FAA disagrees with this comment as applied to group I and group II terminal control areas. While obtaining a prior authorization involves communication that may advise ATC of an aircraft's altitude when it enters the TCA, it does not continuously advise ATC of the altitude of aircraft within the TCA. For this latter purpose, verbal altitude reporting is not considered acceptable as the sole means of conveying altitude information in group I and group II TCA's.

8. The en route requirement for a transponder between 12,500 feet m.s.l. and the floor of the positive control area would virtually eliminate certain glider operations vital to the science, sport, and art of soaring, and would drastically limit the altitude available for safe motorless flight over hostile terrain. Further, it is argued that the extremely variable nature of the meteorological conditions needed to support en route soaring operations makes it highly impracticable to require the advance granting of a deviation. The FAA agrees with these comments, and has also determined that glider operation, at the affected en route altitudes, is still infrequent enough not to present a significant collision hazard. On balance, it is believed that gliders operating between 12,500 feet m.s.l. and 18,000 feet m.s.l. (the floor of the positive control area) may safely be excepted from these amendments. However, gliders, like other aircraft, are still subject to the requirements to obtain a deviation under § 91.97(b) for operation without a transponder in the positive control area.

9. The en route operation of balloons should be excepted from this amendment. The FAA disagrees. Considering the fact that balloons, unlike gliders, have positive and predictable altitude control, and can, therefore, plan in advance the altitude of their en route operations, and considering the fact that balloons, while highly visible themselves, cannot take rapid action to avoid other aircraft in conditions of limited visibility, the FAA believes that it is reasonable not to except balloons as a class but rather to treat each case under the deviation provisions of § 91.24(c). This comment is, therefore, not accepted.

10. The current exception for helicopters should be retained. The FAA agrees to the extent that helicopters are excepted from these amendments when operating below 1,000 feet a.g.l. in terminal control areas under a letter of agreement.

VI. *Comments concerning the safety of the proposed regulations.*—Public comments were received concerning the safety implications of the proposals in supplemental notice 72-12. These included the following:

1. The provisions of the notice 72-12 significantly reduced the potential safety enhancement in the more restrictive proposals in notice 69-9 and the terms of that earlier notice should be the goal to be achieved. The FAA believes that the amendments contained herein are fully sufficient to meet current safety requirements and that further restrictions are not justified at this time.

2. The proposed regulations will deagrees. This amendment does not elimitions by denying superior airport facilities to general aviation aircraft that are not equipped as required. The FAA disagrees. This amendment does not eliminate the emergency authority in §§ 91.3 and 91.75. Operation under deviations issued pursuant to § 91.24(c) is also provided for.

3. Use of airborne automatic pressure altitude reporting equipment by all aircraft would (i) induce a "false sense of security" in the pilot; (ii) cause unacceptable confusion on radar scopes; and (iii) by adding to pilot workload, reduce his ability to see and avoid other aircraft.

None of these contentions is correct. The quality of the transponder signals as they affect ground radar scopes is assured by the recent amendment making technical standard order standards apply to this equipment. By freeing the

pilot from verbal altitude reporting where possible, this amendment will, in fact, increase his ability to see and avoid other traffic. At the same time, the pilot will have the benefit of traffic advisories that have been screened for altitude. This will elminate many unnecessary advisories.

VII. *Comments suggesting alternatives.*—Public comments were received concerning alternatives to the proposed regulations. These included the following:

1. Rather than require an altitude reporting transponder, FAA should encourage VFR pilots to request radar advisories and require controllers to honor the request. This comment indicates a fundamental misconception of the reason for this amendment. Automatic pressure altitude reporting equipment is not a substitute for ATC functions such as the issuing of traffic advisories. The value of continuous automatic pressure altitude reporting lies in its ability to make ATC services and functions more effective to the pilot.

2. Terminal air traffic should be regulated by ingress and egress corridors, required reporting points, and other means before "jumping to sophisicated equipment for all airspace users." The FAA believes that the ingress and egress corridors, even if adopted, would not respond to the need that resulted in this amendment. This is the need for continuous, accurate, current altitude information under dense traffic conditions. This workload is just as likely to occur in the case of traffic in densely traveled corridors as well as in the case of traffic elsewhere in terminal airspace. Corridors are an appropriate consideration in the configuring of airspace for overall traffic flow purposes, but they do not solve the problem of air traffic management addressed by this amendment.

3. The FAA should wait until the aviation industry, on its own, develops reasonably priced transponders and automatic pressure altitude reporting equipment. The FAA believes that the aviation industry has the capability of responding within the deadlines prescribed, and that the effect of delayed rulemaking will be indefinite, and in the long run more costly, delay in anticipating and meeting the demands of projected air traffic growth.

4. There should not be a mandatory requirement for automatic pressure altitude reporting equipment "before the system can demonstrate its ability to perform well without it." This comment implies a policy of risking deterioration in the system before requiring the improved equipment. Such a policy is not an acceptable approach to anticipating and preventing impediments to the continued improvement of the air traffic control system that is needed to meet the demands of increasing numbers of users of the airspace.

VIII. *Miscellaneous comments.*—The following comments were received on issues not treated above:

1. The name "terminal area" as proposed in notice 72-12 is confusing, needs clarification, is not clearly distinct from the concept of a TCA, and is hard to distinguish from the airport traffic area concept. The FAA agrees with these comments and believes that there is no significant benefit to the introduction of still another regulatory term (in addition to airport traffic area, control zone, and terminal control area) to describe the air space around an airport. For this reason, the term "group III terminal control area" is adopted, in place of "terminal area." No increased regulatory burden results from this name change. To insure that there is no inadvertent increased burden from this name change, the designation terminology of "terminal control area" in § 71.12 is amended to make it clear that equipment rules alone (that is, without operating rules and piloting rules) may be issued in terminal control areas. That section is also editorially changed to include group III terminal control areas. Further insuring that no regulatory requirement is added as a result of this name change is the fact that this amendment permits aircraft not equipped with improved transponder equipment to operate in these areas if two-way radio communications are maintained in the TCA and the pilot provides position, altitude, and proposed flight path prior to entering the TCA.

2. The FAA should note that no TSO is proposed for the altitude encoder itself. The FAA appreciates this comment and believes there may be a need for additional rulemaking to further control the quality of automatic pressure altitude reporting equipment used in compliance with this amendment. However, it should be noted that the requirements of § 91.36 covering data correspondence between automatically reported pressure altitude data and the pilot's altitude reference continue to apply.

(Secs. 307, 313(a), 601, Federal Aviation Act of 1958, 49 U.S.C. 1348, 1354, 1421; sec. 6(c), Department of Transportation Act, 49 U.S.C. 1655(c).)

In consideration of the foregoing, parts 71 and 91 of the "Federal Aviation Regulations" are amended, effective July 20, 1973, as follows:

1. Section 71.12 of part 71 of the "Federal Aviation Regulations" is amended to read as follows:

§ 71.12 Terminal control areas.

The terminal control areas listed in subpart K of this part consist of controlled airspace extending upward from the surface or higher to specified altitudes, within which all aircraft are subject to operating rules, pilot rules, or equipment rules specified in part 91 of this chapter. Each such location is designated as a group I, group II, or group III terminal control area, and includes at least one primary airport around which the terminal control area is located.

2. Section 91.24 is amended to read as follows:

§ 91.24 ATC transponder equipment.

(a) *All airspace: U.S. registered civil aircraft.*—For operations not conducted under parts 121, 123, 127, or 135 of this chapter, ATC transponder equipment installed after January 1, 1974, in U.S. registered civil aircraft not previously equipped with an ATC transponder, and ATC transponder equipment used in U.S. registered civil aircraft after July 1, 1975, must meet the performance and environmental requirements of any class of TSO-C74b or any class of TSO-C74c as appropriate, except that the Administrator may approve the use of TSO-C74 or TSO-C74a equipment after July 1, 1975, if the applicant submits data showing that such equipment meets the minimum performance standards of the appropriate class of TSO-C74c and environmental conditions of the TSO under which it was manufactured.

(b) *Controlled airspace: all aircraft.*—Except for persons operating helicopters in terminal control areas at or below 1,000 feet AGL under the terms of a letter of agreement, and except for persons operating gliders above 12,500 feet m.s.l. but below the floor of the positive control area, no person may operate an aircraft in controlled airspace, after the applicable dates prescribed in paragraphs (b)(1) through (b)(4) of this section, unless that aircraft is equipped with an operable coded radar beacon transponder having a mode 3/A 4096 code capability, replying to mode 3/A interrogation with the code specified by ATC, and is equipped with automatic pressure altitude reporting equipment having a mode C capability that automatically replies to mode C interrogations by transmitting pressure altitude information in 100-foot increments. This requirement applies—

(1) After July 1, 1974, in group I terminal control areas governed by § 91.90(a);

(2) After January 1, 1975, in group II terminal control areas governed by § 91.90(b);

(3) After January 1, 1975, in group III terminal control areas governed by § 91.90(c), except as provided therein; and

(4) After July 1, 1975, in all controlled airspace of the 48 contiguous States and the District of Columbia, above 12,500 feet m.s.l., excluding the airspace at and below 2,500 feet a.g.l.

(c) *ATC authorized deviations.*—ATC may authorize deviations from paragraph (b) of this section—

(1) Immediately, to allow an aircraft with an inoperative transponder to continue to the airport of ultimate destination, including any intermediate stops, or to proceed to a place where suitable repairs can be made, or both; and

(2) On a continuing basis, or for individual flights, for operations not involving an inoperative transponder, in which cases the request for a deviation must be submitted to the ATC facility having jurisdiction over the airspace concerned at least 4 hours before the proposed operation.

3. Section 91.90 is amended by amending the section heading, §§ 91.90(a)(3)(iii), 91.90(b)(1)(i), and 91.90(b)(2)(iii), and adding a new § 91.90(c), all to read as follows:

§ 91.90 Terminal control areas.

(a) *Group I terminal control areas.* * * *

( ) *Equipment requirements.* * * *

(i) On and before the applicable dates specified in paragraphs (a) and (b)(1) of § 91.24, an operable coded radar beacon transponder having at least a mode 3/A 64-code capability, replying to mode 3/A interrogation with the code specified by ATC. On and before those dates, this requirement is not applicable to helicopters operating within the terminal control area, or to IFR flights operating to or from a secondary airport located within the terminal control area, or to IFR flights operating to or from an airport outside of the terminal control area but which is in close proximity to the terminal control area, when the commonly used transition, approach, or departure procedures to such airport require flight within the terminal control area. After the applicable dates specified in paragraphs (a) and (b)(1) of § 91.24, the applicable provisions of that section shall be complied with, notwithstanding the exceptions in this section.

(b) *Group II terminal control areas.*—(1) *Operating rules.* * * *

(i) No person may operate an aircraft within a group II terminal control area unless he has received an appropriate authorization from ATC prior to operation of that aircraft in that area, except that, after the applicable dates in § 91.24(b)(2), authorization is not required if the aircraft is VFR, is equipped as required by § 91.24(b), and does not land or take off within the terminal control area.

* * * * *

(2) *Equipment requirements.* * * *

(iii) On and before the applicable dates specified in paragraphs (a) and (b)(2) of § 91.24, an operable coded radar beacon transponder having at least a mode 3/A 64-code capability, replying to mode 3/A interrogation with the code specified by ATC. On and before those dates, this requirement is not applicable to helicopters operating within the terminal control area, or to VFR aircraft operating within the terminal control area, or to IFR flights operating to or from an airport outside of the terminal control area, when the commonly used transition, approach, or departure procedures to such airport require flight within the terminal control area. After the applicable dates in paragraphs (a) and (b)(2) of § 91.24, that section shall be complied with, notwithstanding the exceptions in this section.

(c) *Group III terminal control areas.*—After the date specified in § 91.24(b)(3), no person may operate an aircraft within a group III terminal control area designated in part 71 unless the applicable provisions of § 91.24(b) are complied with, except that such compliance is not required if two-way radio communications are maintained, within the TCA, between the aircraft and the ATC facility, and the pilot provides position, altitude, and proposed flight path prior to entry.

4. Section 91.97(a)(4)(i) is amended to read as follows:

§ 91.97 Positive control areas and route segments.

(a) * * *

(4) * * *

(i) A coded radar beacon transponder, having at least a mode A (Military Mode 3) 64-code capability, replying to mode 3/A interrogation with the code specified by ATC, except that, after the applicable dates specified in paragraphs (a) and (b)(3) of § 91.24, the applicable provisions of that section shall be complied with.

5. Section 91.99(a)(2)(i) is amended to read as follows:

§ 91.99 Jet advisory areas.

(a) * * *

(2) * * *

(i) That aircraft is equipped with a functioning coded radar beacon transponder having a mode A (Military Mode 3) 64-code capability, that transponder is operated to reply to mode 3/A interrogation with the code specified by ATC, except that, after the applicable dates specified in § 91.24(a), the applicable provisions of that paragraph shall be complied with;

* * * * *

§ 91.177 [Amended]

6. Section 91.177(a) is amended by changing the cross-reference to "§ 91.24," following the words "specified in," to read "§ 91.24(a)."

Issued in Washington, D.C., on May 25, 1973.

ALEXANDER P. BUTTERFIELD,
Administrator.

[FR Doc.73-11009 Filed 6-1-73;8:45 am]

Title 14—Aeronautics and Space

CHAPTER I—FEDERAL AVIATION ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

[Docket No. 9471, Amendment 71-8; 91-116]

PART 71—DESIGNATION OF FEDERAL AIRWAYS, AREA LOW ROUTES, CONTROLLED AIRSPACE AND REPORTING POINTS

PART 91—GENERAL OPERATING AND FLIGHT RULES

ATC Transponder and Automatic Pressure Altitude Reporting Equipment Requirements

Correction

In FR Doc. 73-11009 appearing at page 14672 in the issue of Monday, June 4, 1973, on page 14675 in the third column, in paragraph VI. the first sentence in subparagraph 2. should read "The proposed regulations will decrease safety during poor weather conditions by denying superior airport facilities to general aviation aircraft that are not equipped as required."

[Docket No. 9471, Amdt. 91-116]

PART 91—GENERAL OPERATING AND FLIGHT RULES

ATC Transponder Requirements; Correction

Amendment 91-116, issued on May 25, 1973, and published in the FEDERAL REGISTER on June 4, 1973 (38 FR 14672) added several changes, to Part 91 of the Federal Aviation Regulations, affecting the use of ATC transponder equipment in U.S. airspace. One of these changes amended § 91.90(b) to add requirements that become effective after January 1, 1975. However, in reorganizing § 91.90(b)(2)(iii), there was an inadvertant omission of one provision of the regulation that is currently effective, that will remain effective until January 1, 1975, and for which no change was proposed in the Notice or intended in the amendment. The omitted provision stated that the currently effective requirement does not apply to "IFR flights operating to or from a secondary airport located within the terminal control area," or to IFR flights operating to or from an airport outside of the terminal control area "but which is in close proximity to the terminal control area."

Accordingly, § 91.90(b)(2)(iii) is corrected to read as follows:

§ 91.90 Terminal control areas.

* * * * *

(b) *Group II terminal control areas.* * * *

(2) *Equipment requirements.* * * *

(iii) On and before the applicable dates specified in paragraphs (a) and (b)(2) of § 91.24, an operable coded radar beacon transponder having at least a Mode 3/A 64-code capability, replying to Mode 3/A interrogation with the code specified by ATC. On and before those dates, this requirement is not applicable to helicopters operating within the terminal control area, or to VFR aircraft operating within the terminal control area, or to IFR flights operating to or from a secondary airport located within the terminal control area, or to IFR flights operating to or from an airport outside of the terminal control area but which is in close proximity to the terminal control area, when the commonly used transition, approach, or departure procedures to such airport require flight within the terminal control area. After the applicable dates in paragraphs (a) and (b)(2) of § 91.24, that section shall be complied with, notwithstanding the exceptions in this section.

* * * * *

Issued in Washington, D.C., on August 31, 1973.

ALEXANDER P. BUTTERFIELD,
Administrator.

[FR Doc.73-19185 Filed 9-10-73;8:45 am]

AT