FEDERAL AVIATION AGENCY
BUREAU OF AIR TRAFFIC MANAGEMENT
WASHINGTON 25, D. C.

June 9, 1961

CIVIL AIR REGULATIONS DRAFT RELEASE NO. 61-13

SUBJECT: Radio Failure

The Bureau of Air Traffic Management of the Federal Aviation Agency has under consideration a proposal to amend the Radio Failure section of Part 60 of the Civil Air Regulations to recognize the requirement of jet aircraft and the adoption of the three strata airspace structure. The reasons therefor are set forth in the explanatory statement in the attached proposal which is being published in the Federal Register as a notice of proposed rule making.

The Federal Aviation Agency desires that all persons who will be affected by the requirements of the proposed regulation be fully informed as to its effect upon them and copies of the proposed regulation are being circulated in order to afford interested persons ample opportunity to submit comments as they may desire.

Because of the large number of comments which we anticipate receiving in response to this draft release, we will be unable to acknowledge receipt of each reply. However, all comments will be given careful consideration.

All comments must be submitted in duplicate to the Docket Section, Federal Aviation Agency, Room B-316, 1711 New York Avenue, N. W., Washington 25, D. C. In order to insure consideration, comments must be received by the Agency prior to August 2, 1961.

D. D. Thomas

Director, Bureau of Air Traffic Management

Attachment

FEDERAL AVIATION AGENCY

BUREAU OF AIR TRAFFIC MANAGEMENT

/14 CFR 60/

/Reg. Docket No. 773 ; Draft Release No.61-13/

AIR TRAFFIC RULES

NOTICE OF PROPOSED RULE MAKING

Radio Failure

Pursuant to the authority delegated to me by the Administrator (14 CFR Part 405), notice is hereby given that the Federal Aviation Agency has under consideration a proposal to amend the Civil Air Regulations, Part 60, Section 60.49, as hereinafter set forth.

Interested persons may participate in the making of the proposed rule by submitting such written data, views or arguments as they may desire. Communications should be submitted in duplicate to the Docket Section of the Federal Aviation Agency, Room B-316, 1711 New York Avenue, N. W., Washington 25, D. C. All communications received prior to August 2, 1961, will be considered by the Administrator before taking action upon the proposed rule. The proposals contained in this notice may be changed in the light of comments received. All comments submitted will be available for examination by interested persons in the Docket Section when the prescribed date for the return of comments has expired. Because of the large number of comments which we anticipate receiving in response

to this draft release, we will be unable to acknowledge receipt of each reply.

Part 60 of the Civil Air Regulations comprises the Air Traffic Rules. Section 60.49, Radio Failure, establishes the requirements incumbent upon the pilot in command of an aircraft which has experienced two-way radio communications failure while operating in accordance with the Instrument Flight Rules in controlled airspace. This section provides, in part, that the pilot, if operating in weather conditions equal to or better than those prescribed for VFR flight, may proceed under VFR and land as soon as practicable. As an alternate course of action, he may proceed to the airport of destination, maintaining the minimum safe altitude or the last altitude assigned by air traffic control (ATC), whichever is the higher.

In addition to the provisions of Section 60.49, Sections 60.21-1 and 60.49-1 of Civil Aeronautics Manual (CAM) 60 provide information which is to a great extent explanatory and to some extent repetitious. The Flight Information Manual presents considerable informative material which is essentially an elaboration of the provisions of this rule and a repetition of the material in CAM 60.

The existing rule, last amended in 1949, has served satisfactorily in the past. However, the introduction of the jet aircraft and adoption of the three strata airspace structure indicate that a revision may be in order.

The requirements of jet aircraft to operate at high altitudes due to high fuel consumption rates at lower altitudes are not satisfied by the existing rule which requires the maintenance of "the minimum safe altitude." By interpreting Section 60.17(d) and referring to the MEAs contained in Part 610 of the Regulations of the Administrator, it can be contended that the minimum safe altitude for a flight operating under the Instrument Flight Rules is, in fact, the published MEA for the route being flown. As applied to operations within the high and intermediate route structures, these MEAs would be Flight Level 240 and 14,500 feet m.s.l., respectively. The minimum safe altitude for flight outside low or intermediate airways would be that altitude that provides terrain and obstruction clearance in accordance with Section 60.17(d).

The existing rule did not envision a climb subsequent to radio failure of the magnitude which would be required were the pilot to climb, for example, from an initially assigned altitude at departure of 6,000 feet to the MEA of the high altitude route structure. The requirements of the rule should be clarified and a procedure established which will best serve flight safety.

It is virtually impossible to promulgate a rule which provides definitive action for every conceivable eventuality associated with radio failure. Such a rule would be too voluminous for ready comprehension and application. Similarly, it is not our intent to promulgate a rule so brief or general as to be ambiguous. Adoption of the rule proposed herein would be accompanied by a description in the Flight Information Manual of the detailed procedures which should be followed in the event of radio failure. There would be no other FAA source of supplementary material applicable to this rule.

While two-way communications failure may not necessarily constitute an emergency to the pilot, it frequently causes some degree of emergency to the ATC system, especially within terminal areas. The simplest manner to resolve this problem is to remove its source. Therefore, to provide for maximum flight safety and to minimize adverse effects upon other air traffic operating IFR in the ATC system, the rule would require that the flight be terminated under VFR conditions if then existing or subsequently encountered weather permits. However, it is not intended to encroach upon the prerogatives of the pilot to exercise his best judgment by requiring landing at an airport unsuitable for the type and configuration of the aircraft or by requiring landing only minutes short of the intended destination.

The proposed requirement to terminate flight under VFR would not apply within positive controlled airspace. Special Civil Air Regulation SR-424C prohibits flight under VFR in positive controlled airspace and it is not intended that this amendment modify that regulation. It is therefor considered advisable to require that the pilot follow the course of action applicable to IFR should radio failure be experienced within positive control airspace. It is emphasized, however, that all portions of the rule apply upon leaving such airspace.

In the event weather conditions preclude VFR termination of the flight, it is proposed that pilots who have been assigned an altitude or flight level within the route structure requested in their flight plan, maintain that altitude or flight level, or the MEA, whichever is higher, to destination. Pilots assigned an altitude or flight level below the route structure requested in the flight plan would be required to maintain the assigned altitude or the minimum safe altitude, whichever is the higher, until ten minutes after passing the first compulsory reporting point over which the pilot could not report his position. After observing the required ten-minute time period, the pilot would execute climb to the lowest cardinal altitude at or above the MEA of the route structure within which he had planned en route flight. Cardinal altitudes or flight levels are odd or even thousand foot levels. For example, when the

published MEA of the intermediate route structure is 14,500, a pilot who files an intermediate route and is assigned an altitude in the low route structure would be expected, in the event of radio failure, to climb at the appropriate time to 15,000 feet, the lowest usable cardinal altitude. If the published MEA is above 15,000 feet, he would climb to and maintain the appropriate cardinal altitude. It should be noted that the pilot would be required to use Flight Level 240 without a requirement or ability to cope with the problem of altimeter error when pressure is below 29.92 inches of mercury. The controller would be responsible to adjust insofar as possible any other IFR traffic below Flight Level 240 to preclude confliction during flight in pressure below 29.92" Hg.

A degree of safety in climb to the minimum usable altitude in the route structure filed is provided in the proposed rule. While it may be contended that safety would be enhanced by requiring the aircraft suffering radio failure to climb off the centerline of the airway, the ability of air traffic control to effectively provide separation would be reduced because of the doubtful position of the climbing aircraft. It is considered that the most feasible solution is to make provision for controller recognition of radio failure and to provide time for the controller to adjust traffic involved prior to the initiation of climb by the "radio failure" aircraft. This would be accomplished by incorporating into the proposed rule the delayed pilot action prior to an oncourse climb.

In the interest of expediency and to insure a proper flow of traffic, ATC must, on occasion, clear aircraft to hold, either en route or at the approach fix. Guidance is necessary for the pilot who experiences radio failure subsequent to receipt of a holding clearance. Accordingly, the proposed rule provides that pilots who have received holding instructions should depart the holding fix at the expected further clearance time specified or, if an expected approach time has been received, to depart the holding fix so as to arrive at the approach facility as nearly as possible to the expected approach time.

The proposed rule takes cognizance of the many variables encountered in flight which require estimates to be revised and cause the actual arrival times to differ from estimates. The proposal specifies the use of an elapsed time as revised during the course of the flight. It stipulates that descent at the approach facility should be initiated as soon as possible after the expected approach time or estimated time of arrival in the event the aircraft's arrival over the facility is later than anticipated.

As previously stated, it is not feasible to provide for any and all possible ramifications and this rule will not attempt to regulate emergency or near emergency situations.

For example, the rule omits reference to the problems arising if it proves necessary to proceed to an alternate airport. The circumstances would be so unpredictable in such a situation that it is considered an emergency would exist and, as such, would not be subject to regulation.

In the informal coordination of this proposed rule with both the military and civilian segments of the aviation community, one segment expressed a desire that the revised section be adopted as early as practicable. It was suggested that the period for comment regarding the notice of proposed rule making be reduced. There was no opposition to this proposal. Therefore, the period for comment in response to this proposal is reduced from the usual 60 days to a period of 45 days after publication.

In consideration of the foregoing, it is proposed that Part 60 of the Civil Air Regulations (14 CFR Part 60) and the Civil Aeronautics Manual 60 be amended as follows:

1. By amending §60.49 to read as follows:

§60.49 Radio Failure. In the event of two-way radio communications failure the pilot shall comply with the following procedures, unless otherwise authorized by air traffic control:

(a) VFR Conditions. If the failure occurs in VFR conditions or if such conditions are subsequently encountered, continue flight under VFR and land as soon as practicable: Provided, That during flight within positive control airspace, the provisions of paragraph (b) shall apply to the portion of the flight conducted within such airspace.

(b) IFR Conditions. If the failure occurs in IFR conditions, or if the provisions of paragraph (a) of this section cannot be followed, continue flight to the airport of destination.

(1) Route. Via the route specified in the last air traffic control clearance received or, if no route has been specified, via the planned route.

(2) Altitude. At the altitudes or flight levels specified in the last air traffic control clearance received, the lowest cardinal altitude at or above the MEA of the planned route structure, or the minimum safe altitude, whichever is higher. When climb to a higher route structure is necessary, climb shall be initiated, unless required earlier by the minimum safe altitude, 10 minutes after passing the first compulsory reporting point over which the failure prevented communications with air traffic control.

(3) Holding. When holding instructions have been received, depart the holding fix at the expected further clearance time received or, if an expected approach clearance time has been received, depart the holding fix so as to arrive

over the radio facility serving the destination airport as nearly as possible to the expected approach clearance time.

(4) Descent. Descent from the en route altitude or flight level shall be initiated at the approach facility serving the destination airport at whichever of the following times is the later:

(i) The expected approach clearance time, if received;

(ii) The estimated time of arrival as determined from the flight plan, as amended; or

(iii) The actual time of arrival over the facility.

2. By rescinding §§60.21-1 and 60.49-1 of the Civil Aeronautics Manual.

This amendment is proposed under the authority of Section 307 of the Federal Aviation Act of 1958 (72 Stat. 752, 49 U.S.C. 1354).

D. D. Thomas

Director, Bureau of Air Traffic Management

Issued in Washington, D. C., on June 9, 1961