

AIM Section 4. Two-way Radio Communications Failure

6-4-1. Two-way Radio Communications Failure

- a. It is virtually impossible to provide regulations and procedures applicable to all possible situations associated with two-way radio communications failure. During two-way radio communications failure, when confronted by a situation not covered in the regulation, pilots are expected to exercise good judgment in whatever action they elect to take. Should the situation so dictate they should not be reluctant to use the emergency action contained in 14 CFR Section 91.3(b).
- b. Whether two-way communications failure constitutes an emergency depends on the circumstances, and in any event, it is a determination made by the pilot. 14 CFR Section 91.3(b) authorizes a pilot to deviate from any rule in Subparts A and B to the extent required to meet an emergency.
- c. In the event of two-way radio communications failure, ATC service will be provided on the basis that the pilot is operating in accordance with 14 CFR Section 91.185. A pilot experiencing two-way communications failure should (unless emergency authority is exercised) comply with 14 CFR Section 91.185 quoted below:
 1. **General.** Unless otherwise authorized by ATC, each pilot who has two-way radio communications failure when operating under IFR must comply with the rules of this section.
 2. **VFR conditions.** If the failure occurs in VFR conditions, or if VFR conditions are encountered after the failure, each pilot must continue the flight under VFR and land as soon as practicable.

NOTE-*This procedure also applies when two-way radio failure occurs while operating in Class A airspace. The primary objective of this provision in 14 CFR Section 91.185 is to preclude extended IFR operation by these aircraft within the ATC system. Pilots should recognize that operation under these conditions may unnecessarily as well as adversely affect other users of the airspace, since ATC may be required to reroute or delay other users in order to protect the failure aircraft. However, it is not intended that the requirement to "land as soon as practicable" be construed to mean "as soon as possible." Pilots retain the prerogative of exercising their best judgment and are not required to land at an unauthorized airport, at an airport unsuitable for the type of aircraft flown, or to land only minutes short of their intended destination.*

3. **IFR conditions.** If the failure occurs in IFR conditions, or if subparagraph [2](#) above cannot be complied with, each pilot must continue the flight according to the following:
 - (a) **Route.**
 - (1) By the route assigned in the last ATC clearance received;
 - (2) If being radar vectored, by the direct route from the point of radio failure to the fix, route, or airway specified in the vector clearance;
 - (3) In the absence of an assigned route, by the route that ATC has advised may be expected in a further clearance; or
 - (4) In the absence of an assigned route or a route that ATC has advised may be expected in a further clearance by the route filed in the flight plan.
 - (b) **Altitude.**

At the HIGHEST of the following altitudes or flight levels FOR THE ROUTE SEGMENT BEING FLOWN:

 - (1) The altitude or flight level assigned in the last ATC clearance received;
 - (2) The minimum altitude (converted, if appropriate, to minimum flight level as prescribed in 14 CFR Section 91.121(c)) for IFR operations; or
 - (3) The altitude or flight level ATC has advised may be expected in a further clearance.

NOTE-*The intent of the rule is that a pilot who has experienced two-way radio failure should select the appropriate altitude for the particular route segment being flown and make the necessary altitude*

adjustments for subsequent route segments. If the pilot received an “expect further clearance” containing a higher altitude to expect at a specified time or fix, maintain the highest of the following altitudes until that time/fix:

- (1) the last assigned altitude; or
- (2) the minimum altitude/flight level for IFR operations.

Upon reaching the time/fix specified, the pilot should commence climbing to the altitude advised to expect. If the radio failure occurs after the time/fix specified, the altitude to be expected is not applicable and the pilot should maintain an altitude consistent with 1 or 2 above. If the pilot receives an “expect further clearance” containing a lower altitude, the pilot should maintain the highest of 1 or 2 above until that time/fix specified in subparagraph (c) Leave clearance limit, below.

EXAMPLE-

1. A pilot experiencing two-way radio failure at an assigned altitude of 7,000 feet is cleared along a direct route which will require a climb to a minimum IFR altitude of 9,000 feet, should climb to reach 9,000 feet at the time or place where it becomes necessary (see 14 CFR Section 91.177(b)). Later while proceeding along an airway with an MEA of 5,000 feet, the pilot would descend to 7,000 feet (the last assigned altitude), because that altitude is higher than the MEA.

2. A pilot experiencing two-way radio failure while being progressively descended to lower altitudes to begin an approach is assigned 2,700 feet until crossing the VOR and then cleared for the approach. The MOCA along the airway is 2,700 feet and MEA is 4,000 feet. The aircraft is within 22 NM of the VOR. The pilot should remain at 2,700 feet until crossing the VOR because that altitude is the minimum IFR altitude for the route segment being flown.

3. The MEA between a and b: 5,000 feet. The MEA between b and c: 5,000 feet. The MEA between c and d: 11,000 feet. The MEA between d and e: 7,000 feet. A pilot had been cleared via a, b, c, d, to e. While flying between a and b the assigned altitude was 6,000 feet and the pilot was told to expect a clearance to 8,000 feet at b. Prior to receiving the higher altitude assignment, the pilot experienced two-way failure. The pilot would maintain 6,000 to b, then climb to 8,000 feet (the altitude advised to expect). The pilot would maintain 8,000 feet, then climb to 11,000 at c, or prior to c if necessary to comply with an MCA at c. (14 CFR Section 91.177(b).) Upon reaching d, the pilot would descend to 8,000 feet (even though the MEA was 7,000 feet), as 8,000 was the highest of the altitude situations stated in the rule (14 CFR Section 91.185).

(c) Leave clearance limit.

(1) When the clearance limit is a fix from which an approach begins, commence descent or descent and approach as close as possible to the expect further clearance time if one has been received, or if one has not been received, as close as possible to the Estimated Time of Arrival (ETA) as calculated from the filed or amended (with ATC) Estimated Time En Route (ETE).

(2) If the clearance limit is not a fix from which an approach begins, leave the clearance limit at the expect further clearance time if one has been received, or if none has been received, upon arrival over the clearance limit, and proceed to a fix from which an approach begins and commence descent or descent and approach as close as possible to the estimated time of arrival as calculated from the filed or amended (with ATC) estimated time en route.

6-4-2. Transponder Operation During Two-way Communications Failure

- a. If an aircraft with a coded radar beacon transponder experiences a loss of two-way radio capability, the pilot should adjust the transponder to reply on Mode A/3, Code 7600.
- b. The pilot should understand that the aircraft may not be in an area of radar coverage.

6-4-3. Reestablishing Radio Contact

- a. In addition to monitoring the NAVAID voice feature, the pilot should attempt to reestablish

communications by attempting contact:

1. On the previously assigned frequency; or
 2. With an FSS or *ARINC.
- b. If communications are established with a FSS or ARINC, the pilot should advise that radio communications on the previously assigned frequency has been lost giving the aircraft's position, altitude, last assigned frequency and then request further clearance from the controlling facility. The preceding does not preclude the use of 121.5 MHz. There is no priority on which action should be attempted first. If the capability exists, do all at the same time.

NOTE- **Aeronautical Radio/Incorporated (ARINC) is a commercial communications corporation which designs, constructs, operates, leases or otherwise engages in radio activities serving the aviation community. ARINC has the capability of relaying information to/from ATC facilities throughout the country.*

<http://www.aopa.org/asf/asfquiz/quizzes.cfm?SA=Quizzes&QuizId=30>