Department of Transportation

FEDERAL AVIATION ADMINISTRATION

VFR PILOT EXAM-O-GRAM* NO. 19

EMERGENCY OR LOST PROCEDURES (RADIO)

Let's face it, intrepid airman, you may some day find yourself behind an airborne "eight-ball". Now, verily, this is unfortunate, but for the informed, assistance may be at hand. Though many may suffer from rude exposure to the rigors of navigation up "Trouble Creek", few need labor without a paddle. The "paddles", or aids, available are many and varied, especially for those with radio capability and knowledge of all the facilities available, to summon the willing, able help that is ready. Before we examine the "aids" available to the pilot in any emergency phase, let's define the latter term. Emergency phase simply means a situation involving distress, the need to resolve uncertainty, or to alert those able to help with a pressing problem.

RADIO AIDS FOR PILOTS IN TROUBLE

FAA Controllers and Flight Service Specialists
Air/Ground Communication Channels
VORs and VORTACs
Flight Service Stations
Towers
Approach Control Facilities
Military VHF/DF Stations
FAA VHF/DF Stations
FCC HF/DF Stations
Airport Surveillance Radars
Long Range Radars
Precision Approach Radars
Air Route Traffic Control Centers

NOTE: These radio aids should first be used to keep you out of trouble. The individuals at these aids are ready and willing to help!!

* Exam-O-Grams are non-directive in nature and are issued solely as an information service to individuals interested in Airman Written Examinations.

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THE MANY AIDS AVAILABLE TO YOU AS A PILOT

I. THE "U" AID. This is Old Faithful. If you panic or have not mastered this one, you are likely to find the other aids both difficult to apply and limited in utility. With this, you develop good habits of planning and performance. It is the only thing reliable if you find yourself in some of the situations outlined in this and the previous Exam-O-Gram. Only through the use of this aid will you become acquainted with those that follow.

II. THE RADIO COMMUNICATION AID. This will vary from the most sophisticated and expensive equipment to that which is barely adequate. Therefore, its utility will also vary. Regardless of this, a pilot should know the

A. MEANS OF DECLARING AN EMERGENCY.

1. Transmission of a Radio-Telephone Message.
2. Flying an Appropriate Triangular Pattern.

B. THREE ELECTRONIC MEANS OF OBTAINING ASSISTANCE.

1. Receipt of Radio-Telephone Message.
2. Direction Finding (D/F) Bearings.
3. Radar Detection of Triangular Patterns.

Radio Communication will generally prove to be the most useful aid. You may contact many FAA, military, or FCC Stations or facilities on the emergency frequency (121.5 MHz), or other assigned frequencies within the frequency and range capability of your equipment. When you do, utilize

The Four "C" Procedure

CONFESS -- The doctors aren't likely to treat your troubles if U won't admit you've got 'em! DON'T WAIT TOO LONG!

COMMUNICATE -- if in doubt, shout"! But be prepared to do more than simply "holler" for help. You may need to give any or all of the following: identification, type of aircraft, estimated position, heading, estimated speed, altitude, fuel, nature of problem, and assistance desired. Clearly understand that the facility with which you have established contact may not be able to supply the type of assistance you need or seek, but if you communicate pertinent information, facility personnel should be able to alert those who can. Personnel at FSS stations are trained to do so, and by voice directions alone, can get you back on course or to an airport. Often they can tell you how to use your equipment in order to get the assistance you need.

Even if a forced landing is imminent, try to communicate with somebody. The reasons for doing so should be obvious. If you cannot establish contact with a specific facility, you may communicate IN THE BLIND. Precede your message (3 times) with the word MAYDAY (distress), and simply transmit on your emergency frequency or available air-to-ground frequencies for reception by any facility or even other aircraft.

CLIMB if you can. Altitude improves VHF capability and increases likelihood of Radar and D/F identification.

COMPLY with the instructions of your ground contact. He is a trained specialist, anxious to help. If you cooperate, he usually can.

III. THE DIRECTION FINDING (D/F) AID.

Types include both HF and VHF fixes and/or steers. In other words, they locate your position and give magnetic direction to fly to reach a desired destination.

Use is limited by: Radio equipment, your position in relation to facilities able to provide help, and the extent you are able to follow the four C's.

D/F stations and network include not only FAA, but FCC and military facilities. Those civilian airports capable of providing such aids are listed in the Airport/Facility Directory of the Airman's Information Manual, but when necessary, you may make the request of any station or tower you are capable of contacting. If possible, they will relay the request to the appropriate facility or station in the D/F net system. Check the Airman's Information Manual for information on stations, frequencies, and procedures.

IV. THE RADAR AID.

Types of radar are classified as to function, e.g., Air Route Surveillance Radar, Airport Surveillance Radar, Precision Approach Radar, and Radar Beacons. There are FAA-operated units plus many military installations.

Recommended emergency procedures are covered in Part 1 (ATC Procedures) of the Airman's Information Manual. Assuming the four "C" factors are favorable, radar may provide assistance when an EMERGENCY SITUATION EXISTS in a general sense, or specifically when LOST with:

A. Radio transmitter and receiver both inoperative.

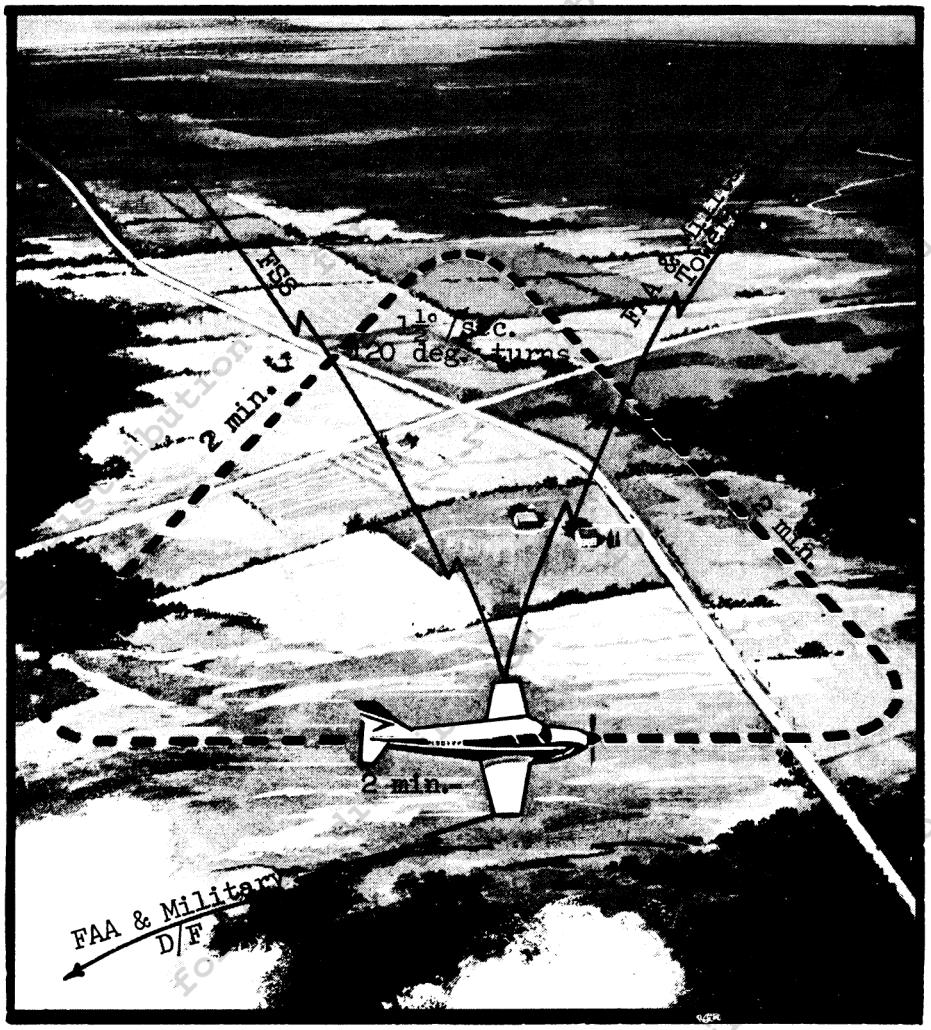
B. Radio transmitter alone functioning.

C. Radio receiver alone functioning.

For situations A and B on page 3, fly the triangular pattern depicted below. For situation C (Radio Receiver Alone Functioning), follow the same procedure except make all turns to the right.

Fly a minimum of two patterns and repeat every twenty minutes until instructions are received on the emergency frequency (121.5 MHz), or interception and guidance by Air Rescue Service aircraft is accomplished. Note that for situations B (Radio Transmitter Alone Functioning) or C (Radio Receiver Alone Functioning), you might get help both by flying the radar triangle and by using radio . . . . Thus you may have three aids: Radio, Radar, and "U".

Space will not permit a detailed analysis of all procedures to follow in using these "aids". This is where the "U Aid" comes into the picture. You should get a current Airman's Information Manual. You should carefully study the section dealing with D/F, emergency, radio failure, and search and rescue procedures.



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