

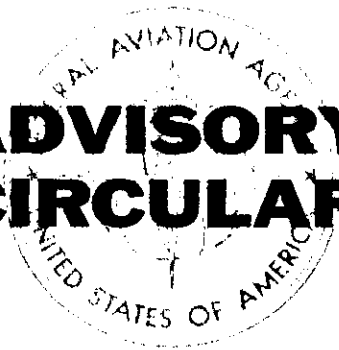
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# Federal Aviation Agency

## ADVISORY CIRCULAR



AC NO: 90-33

Air Traffic Control  
and General Operations

EFFECTIVE : 11/20/67

**SUBJECT : VFR COMMUNICATIONS FOR GENERAL AVIATION**

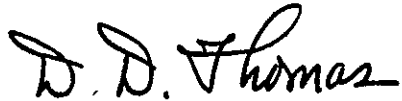
1. PURPOSE. This circular describes VHF (118-136 MHz band) air/ground communications channel utilization for general aviation aircraft in the VFR environment and includes information on the use of channels in the private aircraft (122-123 MHz) band recently made available by the Federal Communications Commission (Docket 17177).
2. GENERAL. The FAA publication, Aviation Forecasts, January 1967, predicts that by 1973, 152,000 general aviation aircraft will be flying 29.0 million hours annually compared to the estimated 21.0 million hours now flown by 105,000 aircraft. This will have a significant impact on the general aviation environment and foretells a more complex air/ground communications system to obtain necessary VFR services.
3. BACKGROUND. Not too many years ago, four air/ground communications channels were adequate to obtain all of the available VFR services. In fact, these channels were sufficient to obtain reasonable IFR services. As the aircraft population grew, the requirements for communications channels expanded in proportion. As recently as 1961, the basic VFR package consisted of 11 VHF channels. With the explosive growth of aviation, this basic frequency group must be further expanded to fulfill the increased demands for services from ground stations.
4. DISCUSSION. The kind of communications equipment a VFR pilot needs depends on the service desired and the scope of flying activity. The decision on the type of radio, and the number of communications channels, is entirely at the discretion of the pilot. There is no requirement for VFR aircraft to have two-way radio equipment except at airports having a control tower and in Area Positive Control. If the general aviation growth continues as forecast and the demand for VFR services increases, it may be necessary to supplement the 100 kHz channels with 50 kHz channels. The 118-136 MHz VHF band is operationally in a 50 kHz environment. While 100 kHz channels will be used for VFR, to the extent possible, the airborne two-way radio should

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have narrow-band characteristics to reject unwanted 50 kHz signals.

5. OBJECTIVE. This Circular is intended to help the VFR pilot determine his communications requirements and the airborne radio capability needed to obtain the various desired services from ground stations. In addition, a recommendation for VFR (and IFR) communications channels is included.
6. VFR FREQUENCIES AND SERVICES. This provides a brief description of VFR services and the frequencies normally used when available.
  - a. Emergency - 121.5 MHz.
  - b. Air Traffic Control Towers -
    1. Local Control and VFR Advisory functions are assigned on the simplex 100 kHz channels between 118.0 and 127.0 MHz.
    2. Ground Control - 121.7, 121.8, and 121.9 MHz are primary ground control channels with 121.6 MHz already assigned in the more congested areas.
    3. 122.4, 122.5, and 122.7 are tower guard channels (receive-only) with the terminal responding on a VHF discrete channel or the appropriate VOR.
  - c. Flight Service Stations -
    1. 122.0 MHz is a weather channel to be assigned at selected FSS's for general aviation and air carriers.
    2. 122.1 (receive-only), 122.6, and 123.6 MHz are normally common to FSS's. The FSS will reply on the appropriate VOR, if available, to calls received on 122.1 unless the pilot advises that his receiver is tuned to one of the simplex channels. The frequency 123.6 MHz is designated as an airport advisory channel and eventually will be dropped at those FSS's on airports having a control tower.
    3. 122.2 or 122.3 MHz simplex channels will be assigned individually at busier stations on a semi-discrete basis. At some FSS's, 122.2 or 122.3 may be substituted for 122.6 MHz.

- d. UNICOM - The frequencies 122.8 MHz and 123.0 MHz are the primary UNICOM channels with 122.8 used at non-tower, non-FSS airports and 123.0 used at airports with a tower or an FSS. The FCC recently made 123.05 available as a helicopter advisory (UNICOM) channel. In addition, 122.85 and 122.95 are available for UNICOM use.
7. COMMON CHANNELS. The number of channels that the VFR pilot will need depends on the area of his operations and the extent of the service he wants. In areas which are not congested and where the flight operations are consistently confined to specific airports, the common channels listed in Attachment 1 may be adequate. However, 90-channel capability is needed to obtain full VFR service throughout the National Airspace System (NAS) particularly when aircraft are operating into busy multiple-terminal areas.
8. IMPLEMENTATION AND USE. The new FSS frequency 122.6 was implemented on November 9, 1967, while gradual increased use of 122.2 and 122.3 will be made as funds and equipment become available. These frequencies will be included in the Airman's Information Manual and the enroute low-altitude and the new sectional charts. The frequency 122.0 MHz (weather channel) is not expected to be in full use for some time but may be assigned earlier at certain FSS's for weather communications to relieve congestion on other FSS channels.
9. SUMMARY AND RECOMMENDATION. For VFR operations, the Federal Aviation Administration suggests a 90-channel communications capability, noting that the channels in Attachment 1 may be adequate depending on the extent of flying activity and the areas of use. For unrestricted IFR operations, 360-channel communications capability is necessary.



D. D. Thomas  
Deputy Administrator

VHF COMMON CHANNELS

The frequencies herewith tabulated are common to the system and, where assigned, will usually permit the limited radio-equipped aircraft to obtain basic VFR services. These common frequencies, as well as the discrete 100 kHz channels below 127.0 MHz, are all within the tuning range and operating capability of 90-channel equipment. Except as noted, the channels are simplex (transmit and receive on the same frequency).

- a. 121.5 - Emergency
- b. 121.6 - Control Tower, Ground Control
- c. 121.7 - Control Tower, Ground Control
- d. 121.8 - Control Tower, Ground Control
- e. 121.9 - Control Tower, Ground Control
- f. 122.0 - FSS's, Weather (future), General Aviation, and Air Carriers at selected stations
- g. 122.1 - FSS's Receive-Only
- h. 122.2 - FSS's
- i. 122.3 - FSS's
- j. 122.4 - Control Tower, Receive-Only
- k. 122.5 - Control Tower, Receive-Only
- l. 122.6 - FSS's
- m. 122.7 - Control Tower, Receive-Only
- n. 122.8 - UNICOM, Non-Tower, Non-FSS Airports
- o. 123.0 - UNICOM, Tower and FSS Airports
- p. 123.6 - FSS's, Airport Advisory Service