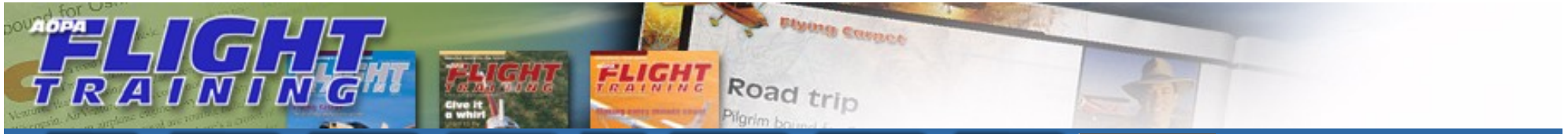

Features

Frequent Frequencies

Tips for getting the most out of your aircraft radios

Many student pilots--and some veteran aviators--are intimated by radio communications. What if I choose the wrong frequency? How can I better understand the rapid-fire numbers?

Errors in communication are common, even for professional pilots. At least once a week I hear a pilot communicating on the wrong frequency, and sometimes that pilot is me. Many aircraft have two communication radios, and a common error is to enter a new frequency on one radio, then attempt to transmit on the *other* radio--which is not tuned to the desired frequency. Pilots can establish a plan that lessens this possibility.

Using that second radio

The second radio is in your aircraft primarily as a backup. Because aircraft radios are very reliable, however, you should find that both are working. When that's the case, assign one radio to communications while in the air, and the second radio to on-the-ground and auxiliary information uses. Think of the radio higher on the panel as the in-air radio, and the lower radio as ground-based. Specifically, the number-one radio is for takeoff (tower or common traffic advisory frequency), departure, en route, approach, and landing frequencies. The second radio is assigned clearance, ground, weather (ATIS, ASOS), and flight service duties--remember to monitor the emergency frequency (121.5 MHz) when you're not using the second radio.

Incorrect frequencies can be entered by pilots--or provided by controllers during a handoff--so radios with flip-flop frequencies are particularly useful. With the press of a button, the pilot can quickly return to the prior frequency if communications are not possible on the new frequency. Once communication is established on the new frequency, experienced pilots enter the next expected frequency--before they're asked to switch. Some sequences are obvious; departing a towered airport the sequence is always ATIS, clearance, ground, tower, and departure. You will develop this skill over time. Listening to how other aircraft are handed off also provides hints.

Even for local flights, the pilot should know necessary and likely frequencies before entering the cockpit. Reviewing

frequencies should be a routine part of preflight planning. You are less likely to make a mistake if you've already reviewed the possibilities.

If your aircraft has two older radios without standby frequencies, use the radios alternately. Enter new frequencies directly on the unused radio. When it is time to change frequencies, use the audio panel to switch to the other radio. Again, it is easy to return to the old frequency if necessary, and an anticipated frequency can be entered in advance.

Weather on the fly

Let's say you need weather information while you're flying. The primary source is from a flight service station (FSS), and all stations answer the common frequency 122.2 MHz. However, there are two problems using this frequency--it can be congested, and several stations may answer your call. Include your location and the name of the FSS you are addressing on the initial call. Address FSS as "radio": "Cleveland Radio, Cirrus Seven-Six-Two-Lima-Charlie, over Zanesville VOR, over." In most cases, you should not include a specific request until two-way communications are established. The word "over" indicates the end of your transmission and that you expect a reply.

Flight service stations can direct their replies through several antennas, and will choose one closest to your stated location. If you do not specify your location, the station must reply over all its antennas. This floods the frequency to the detriment of the system.

You may blindly call to any station, "Any radio, Cessna Four-Four-Six-Fife-Golf...." However, a request directed to the closest station is preferable as communications will be clearer: "Indianapolis Radio..." Aeronautical charts will indicate the correct FSS. Flight service specialists are certified as competent in their local areas. While any specialist can provide an answer by referring to a computer, a local specialist should know more about smaller airports, local procedures, and local weather patterns.

You can choose dedicated FSS frequencies other than 122.2 MHz. One advantage is less congestion, and the call is directed to one FSS only. Refer to your sectional chart.

Other options

There are other outlets for weather information. The En Route Flight Advisory Service, called Flight Watch, on 122.0 MHz is often helpful. However, in marginal weather this frequency may be busy, and a call to a specific FSS may get a quicker reply. Also, only weather is supposed to be discussed on 122.0; use another frequency if you need information on airports, airspace, notams, or temporary flight restrictions.

Engaging in two-way conversations with flight service or Flight Watch may not even be necessary. Sometimes simply monitoring conversation on 122.0 MHz or other FSS frequencies will answer your questions. Regional weather, transcribed weather en route broadcasts (TWEBS), and--particularly--significant weather advisories (sigmets) are available as recorded messages over certain VORs as indicated on charts. These same VORs and others serve as transmission sites for FSS.

Another alternative is to call FSS on 122.1 MHz: "San Diego Radio, Diamond Tree-Four-Fife-Four-Hotel, listening over the X-ray Yankee Zulu VOR, over." The station will respond on the VOR frequency. Before establishing communication though a VOR, make sure it's tuned to the correct frequency. Listen to the Morse code identifier, which confirms the VOR--and that you will hear the FSS specialist's reply. Most aircraft radios include a filter that allows the pilot to remove or substantially mute the Morse code, making voice communications more audible.

Of course, weather information can be accessed on ATIS and ASOS frequencies. While we often focus on broadcast weather at our destination, local weather also is available at many airports along our route.

If you are receiving air traffic control (ATC) services and communicating with an ATC facility, and want to obtain weather or other information, you have two choices. The simplest is to ask ATC for permission to leave the frequency: "Boston Center, Cessna Fife-Four-Golf would like to leave the frequency for a moment." ATC may ask you return within a specific number of minutes or miles, if you are likely to leave the controller's airspace in the interim. However, many pilots learn to juggle two frequencies at the same time--monitoring one while transmitting and receiving on a second. As long as the first frequency is relatively quiet, this is not a chore. However, when communications are simultaneous, it can be hard to separate the two. One trick is to set volumes at different levels; your brain can then better separate what you are hearing from the two sources.

Making sense of the numbers

Several hints can help you to sort out frequencies. All aviation communication, VOR, and ILS frequencies are in the 100 MHz band, so the first number is always "1." The hundredths digit can be only 0, 2, 5, or 7; 1xx.x2 implies 1xx.x25; and 1xx.x7 implies 1xx.x75--when a frequency is assigned, the ending "5" is often omitted. Trailing zeros in the hundreds and thousandths positions are always omitted in voice transmissions. Valid frequencies in-clude 109.97, 135.75, 129.425, 123.0, 133.77, and 129.3 MHz.

All ATC communications are between 118.0 and 137.0 MHz. If you think you're given a frequency above or below those numbers, there is a mistake.

FSS frequencies are all in the 122 and 123 MHz series; for example, 122.25, 122.3, 122.35, 122.45, 122.55, 122.6, 122.65, and 123.65 MHz. Remember the universal FSS frequency of 122.2 MHz, and that Flight Watch is 122.0.

All FAA facilities monitor the emergency frequency, 121.5 MHz. ATC may ask you to monitor 121.5 to help locate an activated emergency locator transmitter.

If you wish to talk to the pilot of another airplane, use the air-to-air frequency of 122.75 MHz. It is not considered good etiquette to fill other frequencies with pilot-to-pilot chats.

VOR frequencies are between 108.0 and 117.975 MHz, immediately below aviation communication frequencies beginning at 118.0.

When communicating in the pattern of an airport without an operating control tower, the common traffic advisory frequency (CTAF) is used. However, the correct frequency may not be explicitly noted on charts. If the airport has a control tower but the tower is closed for the night, the tower frequency usually becomes the CTAF. At nontowered airports, a unicom frequency is used. Typical unicom frequencies are 122.7, 122.72, 122.8, 122.97, 123.0. 123.05, and 123.07 MHz.

At controlled airports, ground frequencies are likely 121.3, 121.5, 121.7, and 121.9. Note that all begin with 121 and end in an odd tenth. Tower controllers take advantage of this by using a clipped communication, "Cirrus Fife-Hotel-Juliet, contact ground on point seven clearing the runway." They expect you to know they mean 121.7.

A device for understanding radio communications is knowing ahead of time what you are likely to hear. This information should improve your recognition of the correct frequency, and sharpen your communication skills.

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By Ian Blair Fries

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