

■ ■ "Grand Forks Radio, this is Cherokee 2345. Reply on 122.6. Over."

After Nov. 9, 1967, a call, such as this, will be heard more and more frequently when the use of new private aircraft channels (frequencies) recently made available by the Federal Communications Commission (FCC) will begin. These changes will be of more than casual interest to the private pilot, especially if he makes use of the various services provided by the FAA Flight Service Stations (FSS's).

This new frequency "look" will be immediately apparent at FSS's when a tower guard frequency will replace a familiar FSS channel, although the towers will hardly miss it. A new feature, in the form of additional frequencies, will be added to the FSS's equipment. The larger FSS's will have additional frequencies which will be semidiscrete and will be an effective communications tool comparing favorably to the discrete air traffic control channels.

Much has been said about the explosive growth in general aviation activity so that the only thing need be said here is that in the past 10 years general aviation contacts with FSS's have nearly tripled while military and air carrier contacts have gradually decreased. Moreover, the FAA's Aviation Forecasts predict an increase in general aviation aircraft to 152,000 by 1973 compared to today's 105,000. Single-engine aircraft will make up the predominant part, which is expected to be about 124,350. (Historically, general aviation flight operations have been conducted in a VFR environment although IFR operations for private flying are gradually increasing.) This will have a significant impact on general aviation communications by the increasing number of aircraft contacts at FSS's. However, it is also expected that new aircraft entering the general aviation population will have more sophisticated communications equipment.

Despite this tremendous growth in general aviation and the transition from high frequencies to VHF some years ago, the number of FSS communications channels has remained virtually unchanged. With the growing general aviation population and the resultant demand for additional VFR general aviation communications, FAA, in close cooperation with FCC and aviation user groups, notably AOPA, began long-range planning to add suitable communications channels to FSS's. Because of the increase in general aviation activity at Flight Service Stations and the general downward trend of other activity, the immediate objective was better utilization and more flexibility of the 122-123 mc band which is reserved almost exclusively for private aircraft.

A series of informal meetings resulted in proposed changes to the use of private aircraft channels. The FAA and AOPA submitted nearly identical petitions to FCC, not only on channel changes, but, more importantly to permit ground station operation on certain channels which had previously been reserved for aircraft use only. This is to permit simplex operation (transmit and

Beginning in November, general aviation pilots will be using recently revised communications frequencies

by VERNON J. HILL

FSS'S

FREQUENCY	OLD	NEW
122.0	—	FSS simplex (weather)
122.1	FSS receive	FSS receive
122.2	FSS transmit	FSS simplex
122.3	—	FSS simplex
122.4	Tower guard—receive only	Tower guard—receive only
122.5	Tower guard—receive only	Tower guard—receive only
122.6	Tower guard—receive only	FSS simplex
122.7	Tower guard—receive only	Tower guard—receive only
123.6	FSS simplex	FSS simplex—airport advisory service
126.7	FSS simplex	Air traffic control—discrete

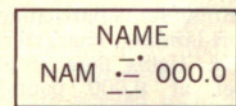
Figure 1. Comparison of the former use of frequencies and the new system, which will become effective Nov. 9, 1967.

receive on the same frequency) which is more efficient than cross-channel operation. Subsequently, through rule-making procedures, the joint FAA/AOPA recommendations were incorporated into the Commission's Rules. The old and new frequency arrangement is shown in Figure 1.

While the frequency band has been adopted and 122.2 simplex already assigned at some busy FSS's, the big change will occur on Nov. 9, when 126.7 will be changed to 122.6 at most locations. The FSS's normally will have three common communications channels throughout the system. These are:

- 122.1 Air-to-Ground
- 122.6 Simplex
- 123.6 Simplex

These common channels will be appropriately tabulated in the Airman's Information Manual. On aeronautical charts (en route low altitude and the new sectionals), the standard shadow box will be used to depict this group of common channels. For example:



Calls from aircraft received on 122.1 normally will be answered on the appropriate VOR unless the pilot advises that his receiver is tuned to one of the simplex channels. The frequency 122.2 mc,

NEW COMMUNICATIONS CHANNELS

to which pilots have listened for years and perhaps silently denounced when they had to switch back and forth with their crystal-controlled transceivers, will no longer be used solely as a transmit-only channel. This is being designated as a simplex channel along with 122.3 mc.

The frequency 122.2 mc, where still assigned as a transmit-only channel, will be dropped, but where this has already been assigned as a simplex channel, will be retained provided the aircraft activity warrants keeping it. Either 122.2 or 122.3 mc may be assigned at selected busy Flight Service Stations in addition to the other three channels. These two frequencies will be so assigned that the greatest amount of interference protection will be provided. The use of either

channel, where used, will be shown on aeronautical charts as follows:

122.2

NAME
NAM $\dot{\text{---}}$ 000.0

122.3

NAME
NAM $\dot{\text{---}}$ 000.0

At the time of the petition, two weather briefing concepts were under consideration for the larger hub loca-

tions which ultimately would have permitted direct pilot-to-forecaster service on 122.0. However, it has been decided that neither of these weather proposals is entirely suitable and that possibly other techniques are more practical. At this writing, there is no specific weather plan in mind, but it can be presumed, generally, that 122.0 will be an FSS weather channel. Now, 122.0 is reserved as a weather channel for general aviation and air carriers. Some of the busier FSS's may use this channel for weather (to relieve congestion on other channels) but it may be sometime before maximum use will be made.

The frequencies 122.5, 122.7, and 122.4 mc will continue to be used as guard channels at control towers. The tower will normally use one of the discrete channels to reply to calls received on the calling channels. The reduction from four to three channels (122.6 re-assigned to FSS's) is now possible by the gradual updating of general aviation communications equipment in recent years. The channel 126.7 mc, which will no longer appear at FSS's, as well as the two adjacent 50 kc channels, will be available immediately after Nov. 9 for discrete air traffic control communications.

One of the booby traps in using 122.1 or a tower receive-only channel is the fact that the pilot rarely hears other aircraft which might be, and often are, using it at the same time. Therefore, he does not realize that he may be breaking up another pilot's transmissions or that he might be interfered with; however, the flight service specialist is literally pulling his hair out trying to unscramble the two or more signals. In spite of the fact that 122.1 is the primary calling channel associated with VOR's, it may be necessary, where this type of interference becomes overwhelming, to assign some of the other FSS channels for this use. These would be appropriately displayed on aeronautical charts.

Although there is no mandatory requirement for VFR aircraft to have two-way radio except when operating at airports having control towers, much of the general aviation population has updated its aircraft with better radio equipment. Recently, because of overall increased communications requirements, and the fact that all services just cannot be accommodated on 100 kc channels, FAA established a policy to the effect that 100 kc channels below 127 mc will be assigned, to the extent possible, for VFR functions. Furthermore, where 100 kc cannot be used with adequate interference protection criteria for IFR functions, 50 kc channels will be assigned. What this means to the VFR pilot is that if his radio has 90 channels, he can expect to get the best possible VFR service anywhere in the system. Moreover, FAA intends to continue this policy and this practice to the extent possible. In this regard, the recommendation for two-way communications is quite short and to the point: 90 channels for VFR; 360 for IFR.

How many channels are needed de-

Vernon J. Hill (left) and his flight instructor, Bob Aycok (AOPA 298065), at the Manassas (Va.) Airport, beside a Piper Cherokee 140.



depends entirely on the scope of aircraft operations, and this is at the discretion and responsibility of the pilot. In some operations, particularly certain agricultural uses, the pilot doesn't need radio, nor does he want it. Aircraft consistently flying in sparsely settled areas of the country probably can get adequate VFR service by just having a 122.1 mc transmitter and a tunable receiver. But those whose flying is more extensive, such as cross-country or into congested areas, will find that they will get better service by having additional channels.

It should be noted that the statement on 100 kc VFR channels is appended with the phrase, "to the extent possible." There are several good reasons for this; and certainly it is not intended to be cagey or evasive, but to realistically leave the communications door ajar so that 50 kc channels may be used if needed. It is anticipated that much of the aircraft population entering the VFR environment in the ensuing years will have the communications capability to take advantage of the services that will be available on these channels. For instance, the FCC Rules now make 123.05 available for helicopter landing areas and the channels 122.85 and 122.95 for certain other Unicom stations. The FCC has also authorized 50 kc channels throughout the private aircraft band although no other functions have been assigned yet. In view of the growth of general aviation and the predicted increased demands for more services, it is not likely that the three or four channels now assigned to FSS's will continue to be adequate. Long-range plans include provisions for future use of 50 kc channels at FSS's to be added to the present 100 kc common channels.

Therefore, while the stated policy is quite clear on the use of 100 kc channels for VFR and, in fact, the VFR services are very good for 90-channel equipped aircraft, it may be necessary to use 50 kc channels for some VFR services. These would be in addition to, not "instead of," and 90-channel-equipped aircraft can expect to continue to get the best VFR service possible. By the same token, while in many of the less congested areas, IFR service is still available on 100 kc channels, there is no assurance that IFR services will continue to be available on these channels.

Early this year, an FAA/industry working group convened to "formulate concepts and criteria" for an FSS system which would meet user requirements. The recommendations of this working group include the establishment of four levels of FSS's, remoting of certain en route functions, converting some stations to part-time operation, and establishing unmanned stations. This was treated in greater depth in the June issue of *The AOPA PILOT* (FSS Of The Future, page 72). Despite the fact that the work on the changes in frequencies, now formally adopted, was begun much earlier, the frequency plan is quite compatible with the intents and objectives of the FAA/industry working group whose goal is to "develop a system to deploy the FAA's Flight Service Station resources to efficiently provide the services required by the users of the system."

The frequency changes discussed herein and to be implemented very shortly resulted from extensive planning and coordination with FCC and user groups. Terry O'Brien and Ray Day of FCC, Victor Kayne, AOPA vice president - policy and technical planning, and Hugh Henline and George Axford of FAA's Air Traffic Service were the principal moving forces in this effort. Primary objectives were to improve air/ground communications and to make better use of the channels in the band that has been especially set aside for those who are the major users of FSS's. In addition, the frequency use conforms to the policy of retaining 100 kc channels for VFR and assigning 50 kc channels for IFR functions. □

THE AUTHOR

FSS's New Communications Channels was written by Vernon J. Hill, an Air-Ground Communications specialist for planning with FAA's Frequency Management Division at Washington, D.C. Hill has been employed by FAA for 17 years, seven of which were in electronics maintenance at various bush FSS's in Alaska. He recently soloed a Cherokee 140 at Colgan Airways, Manassas, Va.

New Facility At MacArthur

A new general aviation facility, McIntyre Aviation, Inc., has started operations at the MacArthur Airport at Islip, N.Y.

Owners of the operation, Angus (AOPA 236278) and Randall McIntyre (AOPA 237648), said that when the new facility is completed it will include a pilot's lounge, classroom, tie-downs, hangar storage, and maintenance area. Charter service and rental aircraft also will be available.

The company is presently operating a flight school with the use of five new Cessna aircraft. Ground school classes are being given by three instructors in temporary quarters on the site.

When the new facility is completed, owners said they expect also to have a new and used aircraft dealership. □