

RADIO *for* GLIDERS

A SURVEY OF THE PRESENT SITUATION

By ROBERT H. BALL

Two-way radio is the best solution to the problem of glider retrieving. Even if one-way communication, from air to ground, is used, the advantages of radio are many. In contests, a pilot could use his radio as means of positive identification over turning points on out-and-return flights; a contestant flying on an open day could change his mind about which way to fly and inform his crew immediately of the change in plans; and think what fun it would be to soar leisurely with two or three other ships, all in radio contact, helping each other find thermals!

Rules Of The Game

All radio is under the control of the Federal Communications Commission, Washington 25, D. C. Regulations pertaining to aircraft have been compiled and published in the FCC Rules and Regulations, "Part 9, Rules and Regulations Governing Aeronautical Services," and I strongly advise interested persons to get a copy by writing to the address above and enclosing 10 cents in coin. Any information or FCC forms may be obtained from that office or an FCC Field Engineering office.

To operate aircraft transmitters you need only a restricted radiotelephone permit which may be gotten from an FCC field office or from almost any CAA inspector. The FCC makes no charge for any licensing, but a CAA man may charge a dollar for his time. To adjust, tune, or repair your transmitter you are required by law to have the job done by a second-or first-class radiotelephone licensee.

For your transmitter license, apply on the proper form to the FCC, Washington 25, D. C. See "Part 9, Rules and Regulations, etc." or refer to Ted Nelson's article, "VHF Radio Gliders," in SOARING, March-April, 1951, for application forms and procedure. Composite transmitters (home built or modified) will be authorized if they have the required .01% frequency stability.

Few people, especially CAA and airport men, seemingly know of the requirement that your transmitter frequency must be measured accurately by a licensed man at the time of installation, as often as needed to stay within .01% and any time the oscillator circuit is changed. This is much more than merely calling the tower to see if you are close enough "on" to be heard.

Here are some notes regarding 123 megacycles and soaring society licenses: The letter of the law says in so many words that private service is prohibited—that "use of flying school frequencies for other than instruction purposes and promotion of safety of life and property is prohibited." In many cases the glider pilot is a member of a club under which name he may apply. Experience of those with radio outfits shows that to get a license for 123 megs it is only necessary to state that you operate a soaring society or flight school and that the radio will be used for the purposes quoted above, which is certainly the case for safety.

There is no specific rule against using private

aircraft bands to give your position to a tower and having your crew listen in. A receiver in the car for aircraft bands is perfectly permissible, but there are a few restrictions on content of transmissions from a plane. From section 9.311 of "Part 9, Rules etc." it says, "Communications by an aircraft station in the aeronautical radiocommunication service shall be limited to the necessities of safe aircraft operation. Normally contacts with airdrome control stations shall not be attempted unless the aircraft is within the area served by the station." This leaves open the possibilities of requesting weather or other information from a tower or range station and giving your position in doing so. If you are heard by only the crew and not the tower, so much the better. All things considered, a private aircraft band transmitter in the ship with an appropriate receiver in the car is a highly workable solution to glider retrieving.

Frequencies Available

Glider pilots may get transmitter licenses on any frequency set aside for private aircraft, namely 3105 kc. general purpose, 122.1 and 122.3 mc. for calling range stations, plus 122.5, 122.7, and 122.9 mc. for calling towers. These frequencies are for transmissions from air to ground only, thus no car transmitters will be licensed for the private aircraft bands.

There is a strong swing away from 3105 kc. in favor of the superior VHF bands with the result that 3105 kc. gear is quite cheap since it is slowly going out of use. However, this frequency will surely continue to be authorized by the FCC for several years. Here's the situation: In some locations the CAA is turning down the gain on 3105 kc. receivers or discontinuing them entirely, while the FCC still offers that band for use by private planes. There is no danger of 3105 kc. being closed by the FCC in the near future, but the tower in your area may have shut down its receiver; check locally if you want 3105 kc. to talk to the tower.

If two-way contact from pilot to crew is desired, three spots open are 123.1, 123.3, or 123.5 megacycles—frequencies set aside for joint use by flying schools and soaring societies. All VHF glider installations that I know of now are operating on 123.3 megs; it is well to center upon a single frequency so everyone can talk to everyone else at meets. Under present regulations only clubs or schools are permitted to have ground stations. As many glider transmitters, maximum power 10 watts, will be granted to a club as desired; but only one ground station, not over 50 watts, will be authorized.

Only this summer there was opened a new aeronautical radio service which seems fully as suited to glider radio as the soaring society frequencies. Due to the very newness of this service I don't believe there have been any glider and car applications made under it yet, but I feel sure that a mobile ground station would be permitted.

This service operates on 122.8 mc. and is termed