SAILPLANE RADIOS

(*Concluded from Page 7*)

a few, you will find that they poke their VHF antennas out through the belly of their ships after they are airborne, and retract them for landing. By use of this system, the antenna is in the clear, not blanketed by wings and fuselage, most of the time. Conversely, a top mounted antenna cannot "see" the crew car except at intermittent intervals when some part of the ship isn't blocking its view. This blocking becomes more and more severe as the power output of the transmitter is reduced, causing most low powered VHF transmitters to be almost useless when connected to a top antenna on a sailplane.

At this point, you may well ask why the C.A.A. Antenna Report recommends mounting the VHF whip antenna on top the fuselage, when it won't work to any degree of satisfaction on a sailplane. The answer can be found in the fact that the sailplane and powered aircraft are operated much differently, from take-off to landing, and their radios, in general, are used for entirely different purposes.

In the air, the belly mounted antenna would perform very well on the powered aircraft, the same as it does on the sailplane. However, on the ground, the plane's landing gear, tail surfaces, propeller, as well as other parked and taxiing aircraft, would tend to block the antenna and cause dead spots in transmission and reception. This would seriously interfere with the normal ground handling of the aircraft. Putting the VHF antenna on top of the fuselage removes it from interfering objects, and 360° coverage, while on the ground, can now be obtained.

In the air, the powered aircraft pilot uses his VHF radio to work ground stations which have a minimum transmitter power output of 50 watts; the ground station receivers aren't hampered by ignition noises, etc., which gives them a decided advantage over mobile units in crew cars, particularly when receiving weak signals from aircraft. In addition, the powered aircraft is usually flying point-to-point and, unless the one in command is also an avid sailplane pilot, isn't circling in thermals while trying to make a radio contact. In other words, there is very little time during a normal powered flight when any part of the aircraft structure would blanket the antenna and cause intermittent transmission and reception. When blanketing does occur, the much higher field-strengths of the C.A.A. ground stations, compared to the sailplane crew cars, tend to iron out variations in antenna pickup and contact can usually be maintained at all times.

In the case of the sailplane, the pilot doesn't have any use for his radio before take-off, and only occasionally after landing. Thus he doesn't have to worry about antenna blocking, etc., while on the ground.

In the air, his belly mounted antenna has unrestricted vertical radiating angle of 180°, which makes the most effective use of the relatively low power output from the VHF transmitter in the sailplane.

If the sailplane pilot wishes to use his retractable antenna on take-off, it will provide satisfactory local operations while retracted. A portable whip antenna can be carried in the ship for use after landing, in case it is necessary to carry the radio to a high point from which the crew car can be contacted. Or, in a pinch, the retractable antenna can be removed from the ship and used instead of the portable whip, if one isn't carried for this purpose.

For those of you who would like to install a retractable VHF antenna on your ships, I have prepared detailed instructions for fabricating and installing such a unit. The original idea for this antenna came from Frank Kerns, who worked it out for use on his Jenny Mae. I believe that it is about the simplest, as well as the best, mechanically, of any of the retractable antennas I have seen. And, performance-wise, it has been exceptional. Working distances up to 125 miles have been reported while using a Skycrafters 1-watt VHF MULTIPHONE in the sailplane and a similar 1-watt unit in the crew car. With one of our new 5-watt, High-Powered VHF MULTIPHONES in the car, performance is almost phenomenal.

With a good, dependable, two-way radio . . . you know whose, feeding a "Kerns Special" retractable antenna, you will have no need for matching stubs or other complicated gimmicks of questionable value. So, if you would like to receive a free copy of the above-mentioned instructions, just write "retractable Antenna Instructions" on a postcard and send it to the writer at Skycrafters Aviation Radio, 2453 E. Spring Street, Long Beach 6, California. Your copy will be sent by return mail.

1957 ACCIDENT ANALYSIS

(*Concluded from Page 9*)

Destroyed indicates complete destruction of the ship.

Major damage indicates one or a combination of the following:

(a) at least one wing destroyed
(b) nose crushed
(c) fuselage and/or tail extensively damaged
(d) other damage to the point where the feasibility of rebuilding is doubtful

Minor damage indicates one or more of the following:

(a) a few wing ribs broken
(b) holes in the leading edge.
(c) fabric torn
(d) skid broken, etc.

It will be seen that the approach to landing is the area of flight representing the greatest number of accidents. A more strict adherence to the conventional landing pattern and good air discipline in maintaining a surplus of airspeed would prevent many of these.

The landing phase of flight ran a close second, apparently because of competitive spirit during contests. The pilots flew as far as they could, and accepted unsuitable landing areas rather than lose points.

The outstanding aspects of this year's report, however, is the pattern of experience of the majority of the pilots. The students were involved in very few accidents.

REPORT FROM LESZNO

(*Concluded from Page 16*)

At the "Sailplane Research Establishment" in Bielsko I saw a new laminar single-seater in the works. It will have reclining pilot position, Fowler flaps with retractable tracks, retractable wheel (both hydraulically operated), wooden spar with metal leading edges. Control response is to at least equal that of the Jaskolka. A solid 34 to 1 L/D is hoped for it. It has nice lines, per usual, and is called the "Zephyr." The "Mucha" series has again been redesigned to be called the "Mucha Standard." Main changes are: the aspect ratio has been upped to over 17 and end plates have been added; the canopy has been redesigned for better aerodynamics, better visibility (!) and an even roomier cabin; fiberglas fairings at the tail surfaces are being tried and the whole structure has been redesigned for simpler production. An L/D of over 27 to 1 is expected out of the ship.

The author extends to the U.S. team the very best of luck at Leszno.