

Utility Gliders and Their Design

by W. CZERWINSKI

Member of Technical Committee—Soaring Association of Canada

THE time is drawing closer to the war's speedy end and soon devotees of the science and art of gliding, who are now fighting, will be back and shedding their uniforms to take up their art where they left off. When they do come back they will bring with them still more of their associates who will take an active interest in gliding. These newcomers will be the men who flew the countless bombers and fighters, and in a large number of cases, flew military transport gliders. Also many others, who saw with their own eyes the preponderant part played by the air forces, will be actively interested in becoming more familiar with the flying end itself and will create the nucleus for future gliding and flying clubs.

It will be a serious matter for the government and officially recognized flying organizations to get together and put forth all their efforts for those who will undoubtedly have serious interests in gliding and flying. Proper regulations, subsidization of any schools or organizations, as well as building new airports and flight strips scattered throughout the country, will play a great part in the future development of this art. Only continued interest and help will assure the success of these clubs. The important part to be played by aircraft designers will be to provide for them the best possible types of equipment.

Since we are all aware of the fact that the government has plans to build flight strips throughout the country connecting all main highways and those servicing smaller towns, it would be to the clubs' advantage to make use of these flight strips to the fullest extent. It would be possible to organize a gliding club anywhere and carry on training as well as performance gliding to an extent not dreamed of by present participants.

Obviously aside from getting members, which will not be difficult, it will be necessary to have a proper glider. What type of glider, therefore, should be provided will be the subject for further discussion.

The utility trainer is by far the best for all needs of newly created clubs. It is well known to most that this type of glider was specially created here in the United States and as such proved itself to be 100% satisfactory.

In Europe, in almost any part of it wherein gliding was actively engaged upon, the military authorities promoted and subsidized it to the fullest extent. Large training centres were established and maintained by the gov-

ernment. Because all these centres were so large a special primary glider was developed. Cheap and simple construction was the most interesting feature of this type. Aerodynamically it was very inefficient and was used only in hilly terrain for initial training up to the stage of making 360° circuits of the field. Many other special types were used later on for the next steps in training.

In the U.S.A. however, small youth groups had to satisfy their interests and needs for gliding by themselves. No moneys or help were forthcoming from any outside source. Therefore, they had to have a type of glider which would permit them to carry their training much farther; soaring included. This could not be done with gliders similar to the European primary because of its lack of good and desirable aerodynamic characteristics. The impossibility of travelling to the hilly and mountainous regions by the members due to long distances and high transportation costs for themselves, as well as their glider, compelled them to carry out their training at home using a car or winch for launching their glider. If they could have owned a glider with better aerodynamical properties they could have achieved much more.

All participants who took a serious interest in gliding soon progressed beyond the initial steps of training and had they had for instance a European type of primary glider, it would soon have become completely useless as they could not have advanced any further especially if their training took place in very flat country. In the U.S.A. there are plenty of such flat stretches of country and, therefore, the reason for a much better glider becomes obvious. The better properties of the utility glider have no effect on the very initial stages of training. In the further steps of training these better properties help very much because the better gliding angle permits the pupil to stay longer in the air and as a result, to fly for a much longer time in a given number of launchings. The difference in price between a utility and primary glider would be negligible in the initial steps of training, whether one uses a utility or a primary, because accidents seldom occur in this period. Using a utility glider, training can readily be carried out to an advanced stage. After completing initial training in straight flights the pupil starts to make turns and high take-offs, which is the next step to soaring.

A utility glider having a low sinking speed permits

Soaring