

MEET THE SOARING LONE RANGER

I would like to submit an application for club status. The club is located in Fenton, Michigan, and operates out of Howell County Airport. It has a winch and a 1-26 which is currently being replaced by a K-7. Total membership, one. Club name, The Soaring Lone Ranger.

Before you throw this into a waste basket allow me to clarify. I operate without a tow pilot, wing holder, signal man or any other technical assistant. I do use a winch, but no operator.

If you will dig around in your old files you may find an article I wrote approximately a year ago favoring winch launchings. At that time I mentioned using inexperienced helpers due to the lack of soaring enthusiasts in my vicinity, a situation which still exists. Using inexperienced helpers has led to experiences such as going 80 mph across the top of a launch and reaching desperately for the release handle as the tail wagging signals are being completely ignored and returning to find the chute has been reeled through the guides and made into mincemeat. (\$7.50 shot.) The final indignity, though, is having the first good soaring day in weeks — and no winch operator!

With these things spurring me on I set out to make a safe automatic winch. Safety demands a winch which will shut off or guillotine automatically, or on command, in the event any of its automatic functions go haywire. Also, it should not even start function-

ing unless a special safety signal is operating. It would be terribly embarrassing to hook up, then have the ship, minus pilot, go flying off into the wild blue.

During operation the pilot should be able to guide the winch thru a smooth, constant-speed launch from his cockpit and, after release, have the winch automatically reel in cable and parachute, then shut off. Reeling in the cable is necessary since I operate out of an airport and it wouldn't be appreciated if cables and chutes were left laying around on the runways.

To guide the winch I picked a six-channel radio control unit. The set, through the wonderful help of the Minn-X Radio Company, was tuned to give its maximum signal strength and is insensitive to ignition disturbances. The transmitter now produces half a watt but is being redesigned by Minn-X to give a five-watt signal. The reason for the stronger transmitter is that many of the commands are given with the aircraft on the ground, 4000 feet from the receiver. The ground effect will often completely absorb the signal unless the less powerful set is very carefully tuned. The circuits are designed around the six channels.

I will not go into the detail of the circuits here, but will describe the general operation sequence. The winch is left with the engine running and in neutral while the cable is towed and hitched to the aircraft. If the winch should start to go into gear the engine is automatically shut off. Once strapped into his cockpit the pilot switches the special safety signal which must be received continuously by the winch receiver throughout the launch. Loss of this signal during the launch causes the engine to shut off and the guillotine to operate. The guillotine was not used in the preliminary design, but is being added to give an extra safety precaution. As another safety measure the servos will not place the winch in gear unless the throttle is completely closed. This avoids the possibility of a surprisingly violent jerk. The throttle servo is signaled by two channels, one opening it, and the other closing it. This servo had to be especially designed, as none of the present model aircraft servos are powerful enough to handle the forces of an automobile engine throttle linkage.

After the winch is in gear the throttle is first opened with one long signal and launch is started. As excess speed starts to build up at the top of the launch quick signals retard the throttle in small increments. This takes a little practice, but is not difficult. After release the reeling in of the cable is handled by a preset revolution counter driven by the speedometer cable. Once the programmed number of revolutions are turned the ignition is shut off. This was worked out to take care of the drum inertia and bring the chute close to the winch without endangering it.

What has all this added up to? The tremendous relief of being able to fly whenever I please without the necessity of recruiting help. This also has advantages over the auxiliary engine. No vibration, fumes, weight, or FAA complications, plus the fact that the winch can service more than one aircraft, a whole club in fact.

Why am I buying a K-7? The hope still persists. Someday I'll find somebody who wants to go soaring!

— John L. Dolza

REPLOGLE BAROGRAPH



EXCLUSIVE PRESSURE SENSITIVE PAPER

Provides a fine line trace on printed time-altitude grid charts without the bother of ink, smoke, or fixing.

30,000 ft. linear range with fixed reference stylus permits quick and accurate interpretation.

2 lbs. weight, 4 hour drum, 30 hr. outside wound clock.

Temperature compensated.

American made, accurate, convenient, and light! \$99.50
With printed charts, seals, calibration, & instructions

Scott Aviation MARK I Portable Oxygen System

I.C.C. Approved 11 cu. ft. @ 1800 psi, standard airline filler with new Scott Skymask featuring natural rubber face mask, breathing bag, and flow indicator as shown.

Just open the valve. Gives 3 hour duration. Sea level equivalent at 15,000 ft. alt. 6000 ft. equivalent at 25,000 ft. alt.

8 lbs. 4 oz. charged. 4" dia. x 23" long

\$88.00

FULLY CHARGED

Will snug beside you in the seat of most sailplanes. An ideal club or rental unit because it can be carried without special provisions in sailplane.

A good standby and bailout unit for equipped sailplanes. All bright and new. No surplus or rebuilds.

Send check for postpaid shipment

E. H. REPLOGLE

Product Engineering

7174 Transit Rd.

Buffalo, N. Y. 14221

