

## The Winch

*Here's some basic instructions on how to use our winch. Let's know if you have anything else to add.*

### **SAFETY FIRST!**

Make sure no one is standing anywhere near the winch when the rope is moving. The most dangerous areas are near the rope and behind the drum (should a break occur). Any spare persons should be inside a vehicle. If fixing a break do treat the rope as "live" at all times. Remain in radio contact with the winch driver and let each other know when the rope is to be moved. Look after those fingers!

Keep a sharp lookout for idiots walking across the rope.

Take a look at the parachute each launch and lighten any loose strops. Inspect rings etc.

### **Pegging-out**

Remember to fully retract the jockey wheel before driving off! Position the winch about 15m to the side of the runway (Alex). This allows us to pull out the cable even if a glider is landing and gives more room incase of a swing on takeoff.

Keep winch attached to car or use driven pegs and and chain. In either case remember to bed-in the front angle-iron by dropping and reversing. To prevent the rope dragging in the bottom idler it's necessary to level the winch. Do this by lowering the jockey wheel and relieving some weight off the towbar.

### **Before starting first time**

Check engine oil, water and fuel. Use 20/50 oil (confirm it is engine oil!). Use 96 Octane Mogas. Transmission fluid really needs checking when warm and idling in neutral. Make certain its the right fluid if you need to top up and look for the leak!

Insert large red batter key switch. Turn radio on. Keep lid open...this is needed for cooling.

Lay out emergency slasher handy to the front of the winch.

### **Cable pull-out**

Inspect parachute and rings before use.

Remember it's bad to tow an automatic car? Same with the winch. Have the winch motor running when pulling out, this helps circulate the transmission fluid preventing gearbox damage. The pull-out time after a launch is a good cooling period for the motor too.

Before pull-out put the gearbox in "N", pump brake a couple of times and lower weight onto brake pedal. This slows the drum if the car stops suddenly. Put the strobe light on. Car should be in radio contact and not exceed 40Km/h. Car should change smoothly from 1st to 2nd gear. Should de/accelerate slowly.

### **Starting**

Foot on brake, box in "N". Choke will be needed first time, throttle as required. Don't crank for long (you'll flatten the batt, short pulses of 2 secs best). Establish a fast idle. Warm-up will take up to 10 mins.

### **Take up slack**

After hearing the radio call: Light on, foot on brake, gearbox lever pulled right back to the stop (allows only first and second gear). With a little throttle (fast idle) smoothly release the brake while watching the drum. Take up the slack.

### **All Out!**

After hearing the radio call: Pull back smoothly on the throttle.. *not too rapidly!* How far and how fast depends on the bird you are launching.

The **PW5** has very much a C of G hook and is very light. It could over-rotate if you are too aggressive. Make initial acceleration gentle and restrict throttle to between 1/2 and 2/3 for most conditions unless pilot calls otherwise! A slower initial acceleration should allow the winch to change gear before the glider is airborne resulting in less parachute ballooning.

The **Twin** needs a steady increase to full throttle unless windy.

The **other singles** are full throttle in nil wind only.

### **During the launch**

The pilot should call "45" if too slow and "60" if too fast. The driver should respond "you have it all" if they already have full power. To keep the parachute from falling to far to one side the driver should call "water-race" or "club house" to get the pilot to steer in that direction (Alex).

Use "Pisa" and "Lake" for Lowburn. Generally all gliders except the Twin should need a gradual decrease in power from about 1/2 way up, especially if there's some wind.

### **Release**

Don't take the glider too high! This is especially important in low winds as the rope will fall close in a vertical heap and tangle. Before the release point close the throttle slowly several seconds **before** calling "winch reducing power". You should maintain a little throttle and be ready to open immediately the release occurs. The glider should release within 1 or 2 seconds of the call (otherwise completey kill throttle).

### **Winding in**

After release a quick blip of power is needed to keep some tension on the cable (the only drag is the 'chute). As the 'chute hits the ground button off the power slowing until all in. Beware the end arrives suddenly!

### **After Launch**

Let the motor cool down for at least 2 mins after a launch. The motor is best left running for the rope pull-out (kinder on the gear box). Chuck the whole 'chute and strop into the boot of the tow car and use the light rope loop to hook over the towbar. Put the winch gearbox in "N", pump brake a couple of times and lower weight onto brake pedal. This slows the drum if the car stops suddenly. Put the strobe light on. Car should be in radio contact and not exceed 40Km/h. Car can change smoothly from 1st to 2nd gear. Should de/accelerate slowly.

### **Broken rope**

Hopefully a thing of the past! However the rope can be joined by splicing thru itself...see Pete for instructions! Otherwise tie a double fishermans...see JR.

We have installed TOST weak links. Make sure you use the correct one for the glider involved. **B** LUE for **B** ig (Twin), **W** HITE for **W** iddily (Singles). Spares under the seat.

### **Hang-ups/emergencies**

Prevent the possibility of the cable accidentally snagging the wheel of the glider. This is could occur if a motor stall happens on all-out and the glider then over-runs the cable. The pilot should pull the release and start all over again. The winch driver should abandon launch at any stage a hang-up is suspected.

Should a glider not release then put the gearbox in neutral, grab the cutters and be ready to chop. Beware of the danger of the cable under tension and/or moving. The newer rope can be cut with the "slasher".

### **End of day**

= Note fuel level for next time. Turn radio off, remove the big red battery key.

JR March 2006