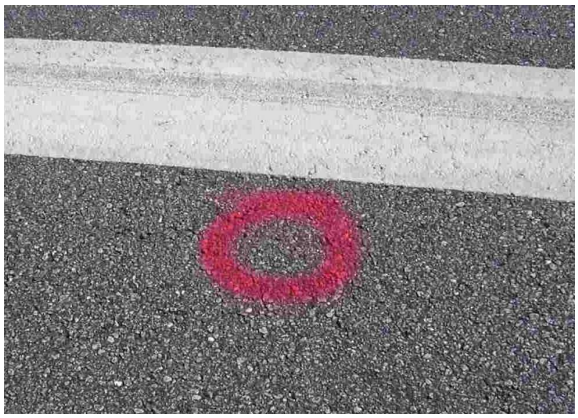
MGSA – Mid Georgia Soaring Association

GLIDER TOW OPERATIONS WITH TOST TOW WINCH

Jan 2008

GLIDER LAUNCH PROCEDURE:

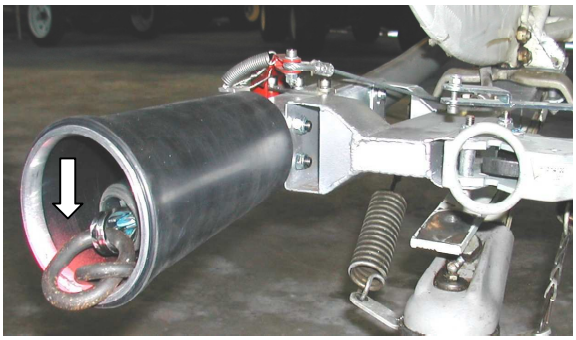
1. Position the glider on the runway centerline with the tow release above the red position mark (or at the end of the runway).

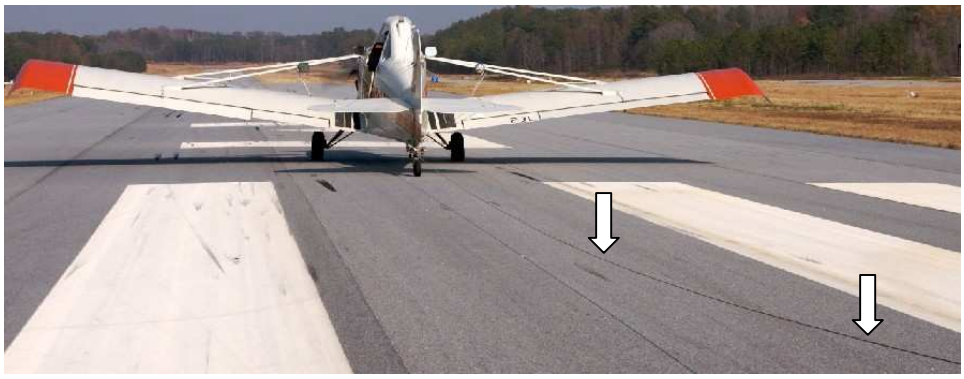


2. The Tow pilot lines the tow plane up with the centerline and stops at a distance of approx. 50-100 ft. in front of the glider.

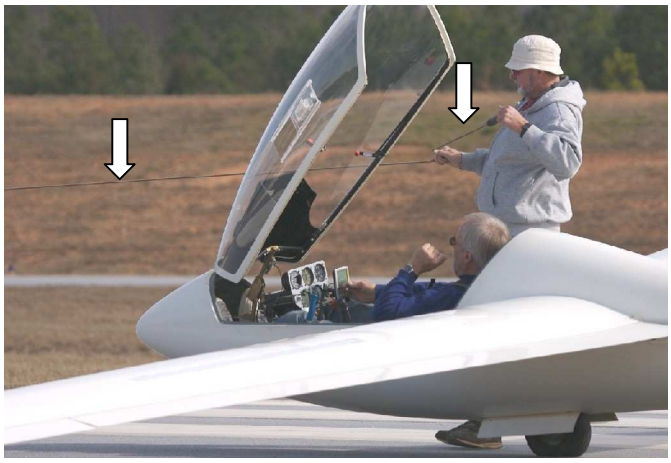
NOTE: It is important that the tow plane is lined up with the runway. Otherwise the rope will put a side load on the funnel and damage it.

3. The wing runner walks to the tow plane, pulls the rope end straight out of the funnel and starts walking back towards the glider while the tow plane advances slowly to help unwind the tow rope.

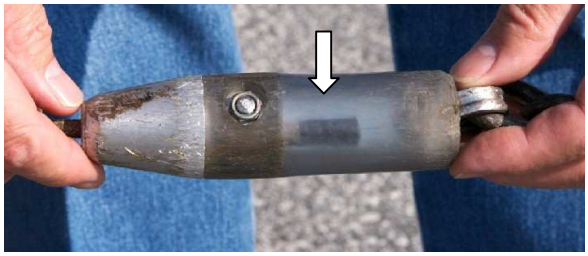


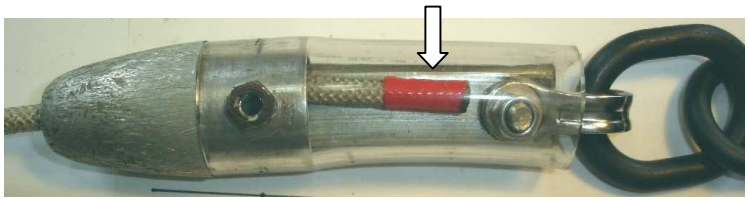


4. The wing runner should stand next to the glider cockpit and hold the rope until the tow pilot has stopped and put his hand out. The tow pilot will stop when the first red stripes start to show, and wait for "take up slack" signal.



5. The wing runner should verify the taped rope end inside the clear tube of the cable end piece is visible.





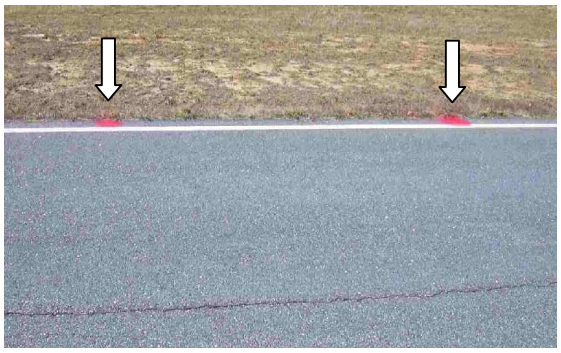
6. When the glider pilot is ready, the wing runner presents the cable end piece to him for his acceptance. Then the wing runner attaches the smaller of the Tost double rings to the glider nose tow hitch. Use proper hand signals and back your hand signals up verbally when connecting the cable end piece to the glider. The glider pilot may request a functional check of the glider tow release at this time.

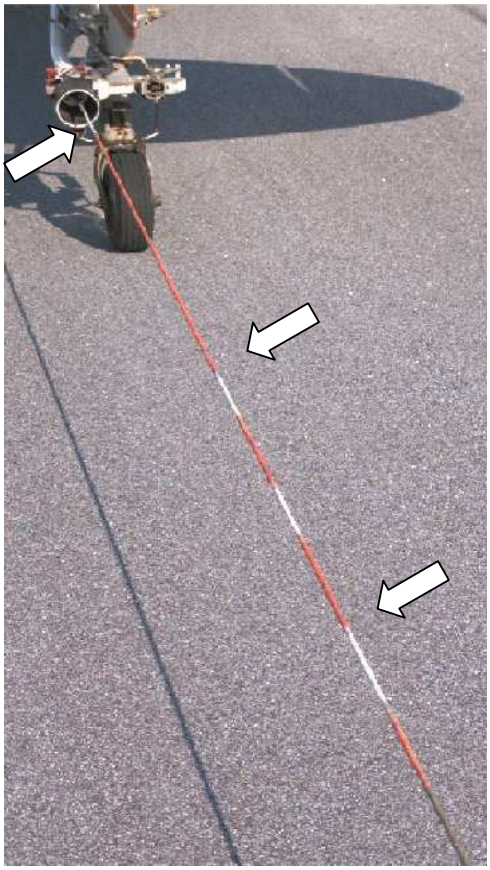
7. Once the tow line is attached, the wing runner moves immediately to the glider wingtip. The wing runner assures that the "Danger Zone" (the area between the glider and the tow plane) is clear and waits for the glider pilot to get ready for the launch.

8. The glider pilot gives the thumbs up "Pilot Ready – Level Wings" signal. <u>BEFORE LEVELING THE WINGS</u>, the wing runner checks for pattern traffic, scans the glider checking for tail dolly removal, main tire inflation, canopy closed and flush, airbrakes flush, no knots/ tangles in the tow line, tow plane flaps up, and no traffic ahead on the runway. <u>ONLY AFTER COMPLETING THIS FINAL CHECK</u> does the wing runner level the wings and gives the hand signal for the tow pilot to "Take Up Slack".

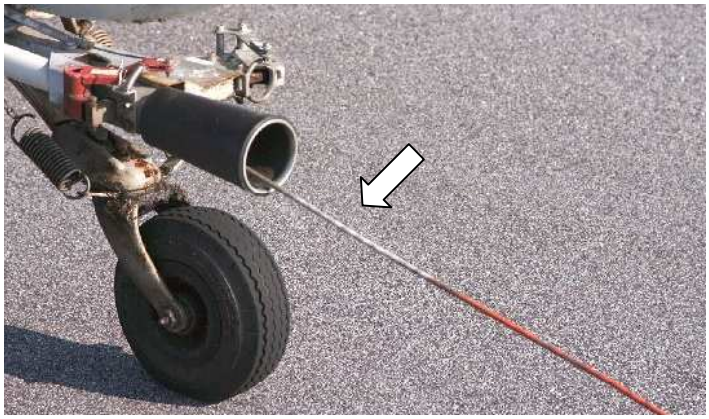
<u>NOTE:</u> The glider pilot might have to hold the brake while the remaining slack is taken out.

NOTE - Tow Pilot: Red marks on the left side of the runway helps the tow pilot to establish the approximate end of the rope. The tow pilot will hear a “click” sound (from the ferrule entering the pipe) before starting to see the red painted section of the rope. **The last foot of the rope is painted white**, signaling that the rope is now fully extended.





NOTE: The last 6-8 ft. of the rope are painted RED / WHITE, with the very last foot WHITE, indicating the rope end.



9. The glider pilot gives the “Begin Take-off” rudder-wag signal. The glider pilot may back this signal up with a radio transmission to the tow pilot, (i.e. “One Mike Golf ready for Take-off”).

10. When the wing runner observes the rudder-wag signal from the glider pilot, he makes sure that the runway is clear and checks the traffic pattern again and then gives the “Begin Takeoff “ circular arm signal to the tow pilot and continues to make this signal until the tow pilot begins the take-off roll.

11. The tow pilot closes the windows, checks the traffic pattern, the runway in front of him as well as the area behind the tow plane and radios his intention for take-off.

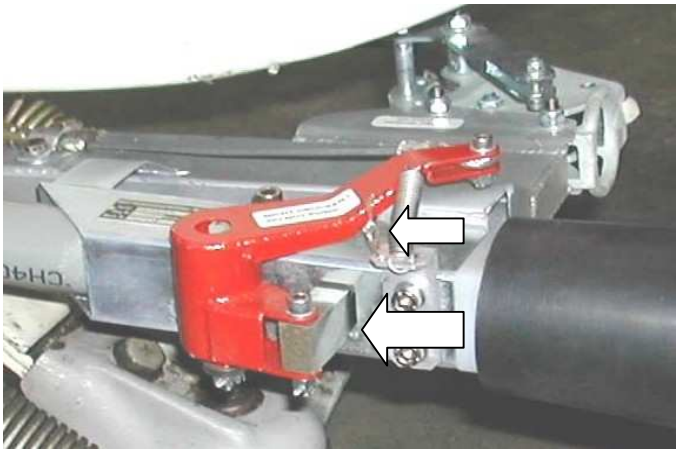
12. The tow pilot smoothly advances the throttle while holding the brakes to allow the engine to develop power (about 1500 rpm), releases the brake while continuing to add power and begins the take-off roll. This prevents a jerking motion causing the glider to roll over the tow rope, damaging the rope end.

13. The tow pilot start drifting downwind of the runway centerline (20-30 deg) after reaching about 100-150 ft. This will help the glider pilot to return for landing in case of a rope break.
The glider pilot positions the glider slightly to the left side of the tow plane. This will assist the tow pilot overcoming the effects of engine torque and P-factor.

14. Stay close to the airport during the tow and release the glider upwind of the airport. Remember there are not many landing options in case of engine problems!
Stay in gliding distance!

15. After reaching the desired altitude, the glider pilot pulls the tow release (at least twice), verifies that the rope is actually released and radios the tow plane “glider released”.

16. The glider pilot initiates a safety turn to the right and the tow pilot continues straight ahead or initiates a slight left turn.



IMPORTANT NOTES:

TOW-PILOT / Wing Runners / Everybody -

Do not touch the RED guillotine lever

located behind the rope funnel. Any movement of the lever will cut into the towrope. The lever is held into position by a spring and secured by a small tell-tale wire.

GLIDER PILOT:

A. Hold the brake gently while the remaining slack is taken out and at the begin of the take-off roll. Be ready for take off before giving the "ready to launch" signal (Rudder Wag). Remember, the only way to stop the take-off roll is for the glider pilot to pull the release.

B. Once airborne, position the glider slightly to the left side of the tow plane and keep the tow plane wings in line with the elevator (just above the wake). This will assist the tow pilot overcoming the effects of engine torque and P-factor.

C. Do not release under excessive tension. This can cause a knot in the towline, which will prevent the rope from being fully retracted. It's much safer to push the nose over a little bit, and release.

TOW-PILOT:

A. Start drifting downwind of the runway centerline after reaching about 100-150 ft. This will help the glider pilot in case of a rope break. He now has to turn into the wind, shortening the turn radius.

B. During the tow, stay in tow plane gliding distance to the airport. Plan the release point close to the runway on which you want to land. This is a safe operation in case of a rope break or mechanical failure or trouble with the tow plane and will also shorten up the tow plane's cycle time.

TOW-PILOT - REWINDING OF TOW ROPE:

1. The glider pilot will release at the desired altitude.

Re-winding:

2. The tow pilot flips the winch switch to the "ON" position as soon as the tow pilot verifies that the glider has released and before starting the descent.
3. The motor will rewind the rope and typically trips the switch automatically as soon as the rope is fully retracted. This takes about 15-20 sec. Flip the switch manually to "Off" in case it does not do it automatically.
4. The tow pilot confirms via rear view mirrors the complete rewind of the rope (nothing should hang out of the funnel – it is possible for the weak link assembly to extend out of the funnel, but no rope should be seen).

In case the rope is not fully rewound:

Avoid the paved runway, land on RWY 21 Grass and stop as soon as possible.
This will drastically reduce wear on the weak-link assembly and towrope. (Shut down the engine, remove the knot, and rewind the rope)

Pre-landing check:

On entering downwind check once again via outside mirror that the rope is completely rewound.

Landing: Normal traffic pattern and approach. (Since no rope is hanging out, the tow pilot may choose to land in the opposite direction).

NOTE: Repair of tow rope, switching of tow release or work of any kind on the tow system are to be done only by authorized personel.

1/21/2008- Wegner