

Appendix E: USHGA Aerotow Program

104.11 USHGA HANG GLIDING AERO TOW RATINGS

11.01 USHGA Aero Tow Vehicle Pilot Rating

General Information

A pilot must possess this rating to be rated to operate a flying tow vehicle involved in hang glider aerotowing. Pilots participating in aero towing are required by the FAA to carry a copy of FAA Aero Tow Exemption #4144.

- A. A minimum of ten hours logged air time in type for the aero tow vehicle used, and either:
 - 1. An FAA private pilot license with single engine rating, or
 - 2. A minimum of 100 hours of logged powered ultralight flight time. For weight shift trike aerotow vehicles, pilots may satisfy 50 of the 100 hours with hang gliding experience provided they have a current Advanced Hang Glider Rating.
- B. 1. Five flights dual with a USHGA rated aero tow vehicle pilot while towing a hang glider, or
 - 2. a. Five flights, either single or dual, as pilot of a hang glider being aero towed, and
 - b. Five flights as aero tow vehicle pilot aero towing a hang glider which is piloted by a USHGA rated pilot with aero tow special skill signoff.
- C. Must give a complete discussion of aero tow vehicle operations including all normal and emergency procedures, and signals between aero tow pilot and glider pilot, in accordance with the USHGA Aero towing Guidelines.
- D. Must either:
 - 1. Successfully complete the Intermediate and Advanced pilot written exams, or
 - 2. Possess a USHGA Advanced pilot rating.

11.02 USHGA Aero Vehicle Requirements

- A. The tow vehicle (powered ultralight) must have a rated thrust of at least 250 lbs.
- B. The towed vehicle (unpowered ultralight) must meet or exceed the Hang Glider Manufacturers Association's Airworthiness Standards.
- C. The tow line connection to the towing vehicle must be arranged so as to not hinder the control system of the towing vehicle.
- D. A pilot operational release must connect the tow line to the towing vehicle. This release must be operational with zero tow line force up to twice the rated breaking strength of the tow line.
- E. A weak link must be placed between the tow line and the release at both ends of the tow line. This weak link must have a breaking strength less than twice the weight of the hang glider and pilot combination.
- F. A release must be placed at the hang glider end of the tow line within easy reach of the pilot. This release shall be operational with zero tow line force up to twice the rated breaking strength of the tow line.
- G. A drogue parachute must be placed midway to 3/4 back from the tow vehicle on the tow line to prevent the tow line from reaching the tow vehicle propeller.
- H. The tow line must be at least twice as strong as the weak link in use.

11.03 Aerotow Special Skill Endorsements

General Information

The aerotow skill is a demonstration of the glider pilot's ability to launch and tow successfully and safely behind a flying tow vehicle. This special skill is available to Novice and above rated pilots, and may be demonstrated through foot launch, "dolly" launch or other launch procedures. Pilots participating in aerotowing are required to have the aerotow special skill or be under the supervision of an Aerotow Official and are required by the FAA to carry a copy of FAA Tow Exemption #4144. In order to receive the endorsement, a pilot must demonstrate the following to an Aerotow Official:

- A. Demonstrates the assembly and preflight of the system, including inspection of the tow line, tow line connection, release pre-flight.
- B. Demonstrates understanding of signals between tow vehicle pilot and glider pilot. Must demonstrate system set up and pre-flight, including a complete discussion of all those factors which are particular to the specific aero tow system used and those factors which are relevant to aero towing in general. Must demonstrate complete understanding of both normal and emergency procedures, including checklists for normal procedures and the indications of an impending emergency and convince the instructor of his ability to execute emergency procedures.
- C. Gives a complete discussion of the dangers to the glider pilot and tow vehicle pilot of improper positioning in flight of the glider pilot and improper management by the glider pilot of tow line tension. Discusses methods for controlling and correcting towline tension.
- D. Demonstrates successful, confident, controlled launches and flight under tow to release at altitude, with a smooth transition to flying, with proper directional and pitch control resulting in proper tracking of the aero tow vehicle in both straight and turning flight and appropriate maintenance of proper tow line tension and airspeed. Should demonstrate the ability to control the glider position relative to the aero tow vehicle. Such demonstrations should be made in typical soaring conditions. A minimum of 5 such successful demonstrations must be made.
- E. Must convince the evaluator that he understands the correct use of airspeed to achieve maximum distance over the ground in various conditions of wind, lift, sink, etc. The pilot must also convince the evaluator that he understands likely presence of wind, lift, and sink over various types of terrain.

11.04 AeroTow Instruction

- A. All instructor of Air to Air towing must:
 - 1. Possess a USHGA instructor certification, and
 - 2. Have completed at least ten (10) successful tows before a USHGA Instructor or Observer who has a minimum of twenty (20) successful tows.
- B. All instructors who utilize Air to Air Towing for instructional purposes shall keep a written log of all such flights, including the date of the flight, the student's name, and the location of the instruction.

11.05 Air to Air Towing Operational Standards

- A. The pilots of both the towed and towing vehicles must have an agreed upon general course of action including take off and release signals, airspeeds, and emergency procedures for each pilot.
 - B. No pilot of a powered or unpowered ultralight may intentionally release a towline in a manner so as to endanger the life or property of another.
 - C. The pilot of the powered ultralight must yield right of way to the unpowered ultralight after release and remain well clear during landing so as to avoid wake turbulence problems.
 - D. All Air to Air towing operations shall be conducted in compliance with all of the requirements of FAA Exemption No. 4144.
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