

# An intro to towline



**E**xperimentation. Experimentation in all aspects of model airplane building and flight techniques. That's where the fun really is. Who knows where the ideas come from, as long as you've never seen it done and now you're going to try it. That's all that counts. Every form of competition in our hobby/sport first started as an experiment. "Let's see if it works!", and then, if it did, it became a contest. A way to see who could do it better. Experimentation has always been a part of FLYING MODELS and now we propose to try something new again, this time in the area of soaring.

What we propose is just the first step towards an all-scale soaring meet. By all-scale we mean that not only must the sailplane be scale, but that the towplane be scale also. It also means a scale tow with two pilots and a towline between the airplanes. Before we get carried away, let's remember that we said the first step. That step, obviously, is a basic contest simply to see if the idea is feasible, and not necessarily using scale airplanes. We already know that scale ships can be built, what we want to find out is, can a powered towplane pull a sailplane into the air and release it consistently enough to make a contest of this sort feasible and fun? To test our theory that the idea will work, FLYING MODELS magazine will sponsor a contest in 1979 based on it. This article is meant to be an introduction to the idea and should give all of you experimenters out there time to mull it over and come up with a winning combination of glider, towplane, towline, flying skill and release mechanisms, as well as the co-operation between the members of the two-man team entries.

Since this is to be an experimental meet, we

decided that there be a few formal rules as possible to allow for the trying out of different ideas and ways of accomplishing the prime objective, i.e. the towing aloft of an R/C glider with a line by an R/C powered model. Since there also has to be a way to win the contest, we decided that a maximum flight time by the glider after it is released should be one of the determining factors. For example: The maximum flight of the glider after release will be five minutes (or whatever time the day's weather conditions allow) to touchdown on the field. Points are counted in seconds and any time over five minutes is deducted from the max time as in any flight time under five minutes. A perfect flight therefore would be 300 points (the number of seconds in five minutes). A flight of 4:30 would result in the same score as a flight of 5:30, 270 points.

The next item of discussion is the landing. We decided that, to keep it from becoming a landing contest, the landing area or spot would be very large and no points would be awarded for landing in it but points would be deducted if you missed it. The "spot" would be determined as a circle with a radius of 100 feet and the center of the circle would be determined by the location of the final resting place of the towplane upon landing and taxiing. Remember, this is a team effort and points will be deducted for crashing landing either the towplane or the glider.

As we said earlier, formal rules for this meet will be kept to a minimum to allow for as much experimentation as possible. The rules that follow exist simply to preclude any field problems and to insure a substantial safety factor, for the airplanes involved as well as the pilots and spectators.

The length of the towline must be at least as

long as the combined wingspans of both the glider and towplane and have a maximum length of 150 feet. It may be made from any material, or combination of materials as long as they are not metallic, and must be able to be released from either plane. This means that both planes must demonstrate the capability of releasing the towline from their respective ends via an R/C signal from the pilot flying that plane. The towline must also be fitted with a streamer or parachute. Any excess weight attached to the line cannot exceed ¼ oz. maximum on either end. This is not a bomb drop event. Piggy-back "tows" are expressly prohibited, the space shuttle notwithstanding, unless you think that you can put the glider into orbit and return it in time for the max.

The towplane launch must be ROG but the glider may either ROG or be hand launched at the discretion of the teams. There are no limitations as to the type of planes that should be used or to their size and there will be no breakdown of sailplane classes. The relatively short max should preclude any advantage in duration capability of the larger sailplanes over the smaller ones.

The attach point of the towline at either end is up to the contestants. This will probably turn out to be one of the most important determining factors in the contest. Folks that have tried it tell us that the best point of attachment on the towplane is probably somewhere on or near the center of gravity, either on top or bottom, not on the tail as is done on the full-size airplanes due to different dynamics of models. But this is experimental and you're free to do anything that you think will work.

As long as we're making suggestions, we feel

# soaring

Here's an old idea in contest form. A way to gently (we hope) mix soaring and power and have a lot of fun in the process. Hope you join us/**Bob Hoecke**



that a high-wing, flat bottomed airfoil ship would work well. Remember that you want sufficient pulling power to haul the glider into the air, but you don't want excessive towing speed. A glider is a clean aircraft meant for relatively slow flight (if it's a thermal glider) and excessive speed will just make it hard to handle. You will also want to keep the towline out of the way of the towplane's control surfaces. The towplane should probably also have good built-in stability to help keep it level at higher altitudes. Flaps on the towplane might help it in the slow and powerful category.

One last word of caution, we have all met the beginning R/Cer who wants his first ship to be a super-scale four-engined bomber. We know that it probably won't work for him and he'll be disappointed. Don't fall into his trap here. Simple is probably better and after we've learned the lessons that this meet will teach us we'll have plenty of time to get into more scale and more sophistication. But then again, if that's the way you want to go, don't let us stop you.

As a further suggestion, you may want to read up on how the full size gliders are towed in *The Joy of Soaring* by Carle Conway. Available from the Soaring Society of America, P.O. Box 66071, Los Angeles, CA 90066.

We wish everyone of you who decides to join us in this endeavor much success and hope that we have given you sufficient time for experimentation prior to the meet. Keep an eye on FLYING MODELS for the exact date (late summer 1979) and location of the contest itself. If you have any suggestions or comments before then, please send them to me, Bob Hoecke, FLYING MODELS, P.O. Box 700, Newton, NJ 07860. Happy experimenting and have fun. ☺

FLYING MODELS

## Official rules for the FLYING MODELS Prototype Tow Soaring meet

1. All entries will be in the form of two-person teams. One, a pilot for the glider and one the pilot for the towplane.
2. Any powered R/C airplane may be used as the towplane.
3. Any R/C sailplane may be used. There will be no class breakdown for the sailplanes.
4. There are no size limitations on the aircraft used.
5. The sailplane must be towed aloft by means of a line between the two ships. Piggy-back "tows" are expressly prohibited.
6. The towline must have a minimum length equal to the combined wingspans of the sailplane and towplane and a maximum length not to exceed 150 feet.
7. The towline may be made of any material or combination of materials as long as they are non-metallic except for attaching rings. Any excess weight attached to the towline cannot exceed ¼ oz. on either end.
8. Both aircraft must demonstrate the capability of releasing the towline from their respective ends via an R/C signal from the pilot flying that plane.
9. The attach point of the towline, both on the glider and the towplane is up to the contestants.
10. The towplane must ROG.
11. The sailplane may ROG or be hand-launched.
12. Maximum climbing time will be 90 seconds from the time the towplane leaves the ground.
13. Upon release of the glider, the towplane will immediately land.
14. The max flight of the glider will be determined by the Contest Director on the day of the contest. Timing will begin upon release.
15. The glider must land exactly in the specified max time. One point per second will be deducted from the maximum score for flights either over or under the max. See text for definition.
16. The glider must land in a circle with a radius of 100 feet with the center of the circle determined by the location of the final resting place of the towplane after landing and taxiing. No extra points are awarded for hitting the spot but 50 points will be deducted if the spot is missed.
17. If either aircraft crashes on landing, i.e. sustains damage that would make it un-flyable without repair work, 50 points will be deducted from the score for each crash.
18. In case of a tie score, the teams involved will each make another attempt with the max flight time of the day being doubled.
19. As many rounds of flying as are feasible will be flown.
20. The decisions of the Contest Director and Contest Committee are final.
21. The highest total score after all rounds have been completed will be the winner.
22. Mufflers will be required for all powered towplanes.
23. An official flight will be one in which the towplane has been airborne for 15 seconds.

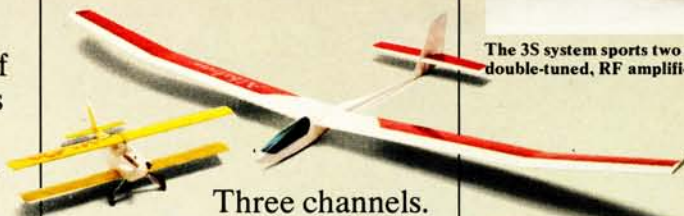


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