

AIRTOW RELEASES by Asher Carmichael

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Reliable releases on the sailplane and the towplane are requirements for successful airtowing. Drawings for some of the more popular and effective choices are included here for your consideration. Keep the following in mind: All sailplane releases should be located either in, or in reasonable proximity to, the nose. All towplane releases should be located on top of the fuselage at the trailing edge of the wing.

Use your imagination in adapting these releases to your requirements. They all work quite well in proper applications. A bellcrank, or any other motion transfer device, can be incorporated as long as the total system is slop-free and efficient. Consider the forces that can be generated by a large sailplane/towplane combination when designing and choosing wire sizes for the "loop" variety of release. Wire sizes in the range of 0.078" to 0.093" for the loop and pushrod should be sufficient for all but the very largest of sailplanes.

The commercial varieties shown may have limits as indicated. The "over-center" type is perhaps the best for "in the nose" locations. The leverage afforded by the cam, rather than the overall size of the release, is the determining factor for suitability in a large plane.

Even though the amount of tension on a release system may change throughout the tow because of varying flight speeds between sailplane and towplane, it is a good idea to use as large a servo as you can, especially if you are driving an additional function such as a retract. When you need to get off, you don't want the release system hesitating because of insufficient power. A servo in the neighborhood of 40 oz of torque is a starting point for 1/4 scale planes. My 1/3 scale DC-600 uses a 1/4 scale retract servo that supplies 170 oz. of torque to drive the release and the retract. I would consider this to be minimal for this set-up.





