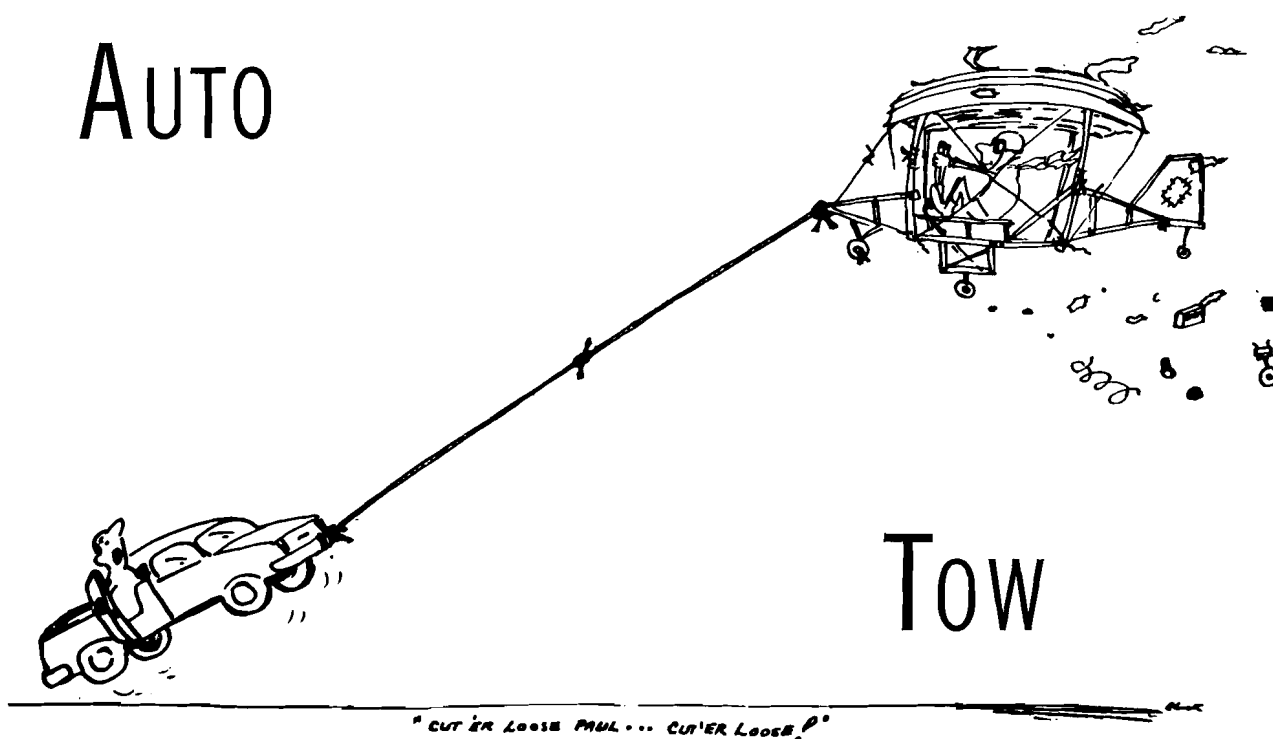


AUTO



Tow

The auto-tow procedures outlined in the following article represent the accumulated experience of one group, the Kern County Soaring Society. A more comprehensive treatment, presenting methods recommended by the SSA, will appear in Chapter Three of the AMERICAN SOARING HANDBOOK, to be published in the near future.

PART I TOW ASSEMBLY

The tow line is arranged as shown in the illustration.

The wire is a 0.072-in. diameter, high-carbon solid steel with a breaking stress of between 950 and 1150 pounds. This type of wire is light and easily tied, but will kink easily. A kink occurs when a loop forms in the slack wire and, as the line is drawn tight, the loop becomes tighter and tighter and the wire finally breaks. Kinks are avoided by removing the loops before a load is applied to the line. When a break does occur, splice the wire as illustrated. The knot will appear extremely loose but it will tighten itself on the first tow. A grinding and groaning sound will accompany this tightening. If, during the tow or retrieve, the wire has been subjected to jerks, it is a good idea to check it for kinks. This is done by forming a U with a rag and letting the wire ride through it on the return with the car. Hold the ends of the rag loosely because if the rag hits a kink or a splice it will snag and jerk out of the hand. This method spots kinks very well; they are almost impossible to see while driving along looking at the wire. It is also a good idea to check the rings and splices occasionally for excessive abrasion.

Of the three rings in the tow assembly, the one which hooks to the sailplane is the most important. This ring must be a high-carbon steel ring of about 2-in. diameter and made from three-eighths-in. round stock. This is necessary to prevent distortion of the ring and possible jamming of the release hook. The other two rings may be of any size or type available.

The drogue chute should be of six-foot diameter with a six-inch hole in the center. The hole is to reduce oscillation during the descent after release. The chute should have six or eight one-quarter-in. diameter shrouds and be dyed a bright color for easy spotting. The chute is necessary to keep the line taut and prevent kinks after the sailplane releases. The steel snap on the chute enables one to take the chute off the wire so it will not drag on the ground during the retrieve.

The chain on the car end of the wire keeps the wire taut and thus prevents kinks during retrieve. The chain seldom becomes entangled on rocks or bushes.

A quick release mechanism on the car is desirable; however, if none is available, the car operator should have a pair of heavy duty wire cutters within reach.

The tow site should be from one and a quarter to two miles of clear, reasonably smooth road or prairie. Avoid fences and *power lines* on which the wire will become entangled. The road should be smooth enough so that the car does not bounce dangerously during the tow. Gentle curves are easily negotiated during tow with no effect on the sailplane. Dragging wire over asphalt or cement pavement during retrieve will cause wear, therefore the wire should be checked for weak spots frequently under these conditions.

PART II TOWING OPERATIONS

The following procedures are applicable to a sailplane with a nose release, but not necessarily to one with a C.G. hook.

The optimum angle of tow between the line ship-