

**The Following article is an extract from the
Streaker Class Owners Association Newsletter
dated summer 1987. The article was written by
Roy Garrett – Streaker 1084.**

This a little out of date with regard to most of the kicker systems in use today, but for those that still have such equipment it may well be useful.

LEVER KICKER



Lever kicker systems have been widely used by many classes of dinghy over the years, particularly where more powerful arrangements are required, but of late have been considered out of fashion with multiplier - multiblock systems being more prevalent. But fashions change and the 'lever' is seemingly making a come-back, being often seen around the dinghy parks again and being fitted as standard by Brian Cory on his GRP Streaker.

The lever is a simple device being very effective offering good mechanical advantage with minimal friction compared with multiblock systems. Its main disadvantage is that it takes up more cockpit space and at times takes on a somewhat ungainly appearance when it twists out of line, when the boom moves to the reaching or running position.

There are two types of lever in general use, see Figs 1 & 2. Type 1 is usually made of thin gauge stainless steel folded into a narrow 'U' section, but home-made models can be of heavy gauge aluminium plate or long stalk 'T' section. The power ratio of this type ranges from 5 to 9 : 1 some being adjustable with several drillings for the primary attachment point.

LEVERS

Type 2 is a very neat Jack Holt design, the smaller version of which is ideal for the Streaker. It fits onto a single wire the length of which does not have to be so precise, also the lever can be positioned to suit anywhere along the wires length, and the lever angle can be adjusted for the best position. The larger version is 270mm long giving a power ratio of $5\frac{1}{2} : 1$ whilst the smaller one has a ratio of $4\frac{1}{2} : 1$, it being approx 160mm long.

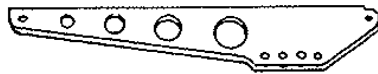


Fig. 1

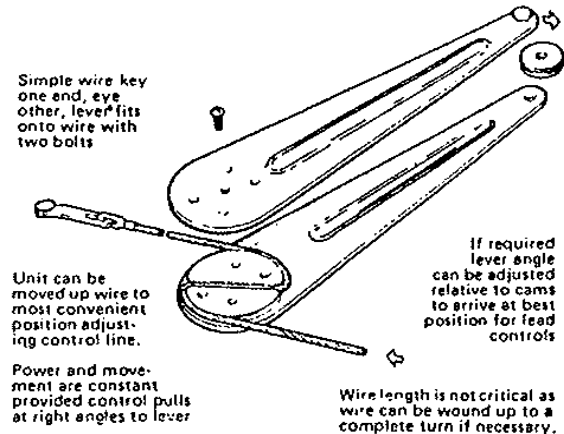


Fig. 2 HA292

Figs. 3, 4 & 5 show typical lever arrangements which hopefully are self explanatory and indicate the general principles for a lever installation. For dual controls in the cockpit the control line has to pass through a single block, giving a further 2 : 1 ratio purchase, with the ends running to cleats one on the port side and one on the starboard side. This block can be either at the lever or after leaving the mast attachment point above or below the deck but if the control line/lines pass through the deck be sure to use the stainless steel lined deck bushes (HA4439), refer to Spring 86 Newsletter. The control line can be 5mm 8 plait matt polyester or 5mm Kevlar.

The linkage between the boom, lever and mast must be of multistrand flexible stainless steel wire, to establish its correct length to suit the best lever position set the system up in the first instant, for a dry run, using thin cord but do not subject the rig to any working tensions at this stage. The wire's will need hard eyes at each end and can be attached to the lever using clevis pins. If you do not have the tools to crimp the eyes your local Dinghy Shop (chandler's) will probably do the job for you.

The aim should be to get the lever in a position where it acts at 90 DEG. to the line of influence between mast and boom. In this way the maximum leverage is obtained, but before making up the wire pieces check that sufficient movement, from the slack position to hard-on, is possible. If the wires end up a little short, a longer shackle at the mast attachment or one introduced at one lever connection should solve the problem.

Finally, I am sure that some of you will be thinking that such powerful kickers are not necessary on a Streaker, but I would beg to differ as there is always the need to control the rig and sail to suit all conditions, although I would add the following cautionary note : Whilst the boom and mast will take a good deal more than the average stress, over zealous use of the kicker could cause some structural failure but more important is the likelihood of destroying sail shape and killing any extra boat speed that was desired. However it is well worth the effort to get the feel of a more efficient system and to benefit from the more sensitive infinite control.

Roy Garrett (1084)

LEVERS

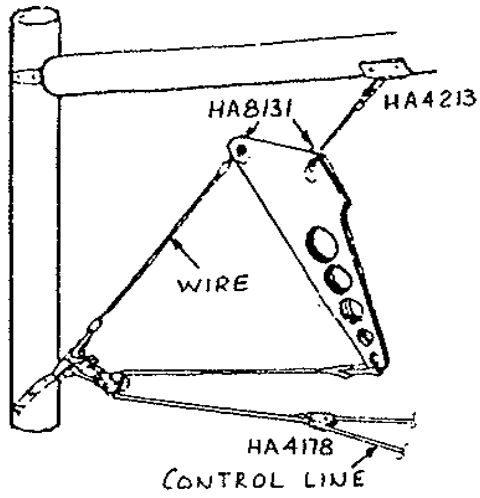


Fig. 3
overdeck controls

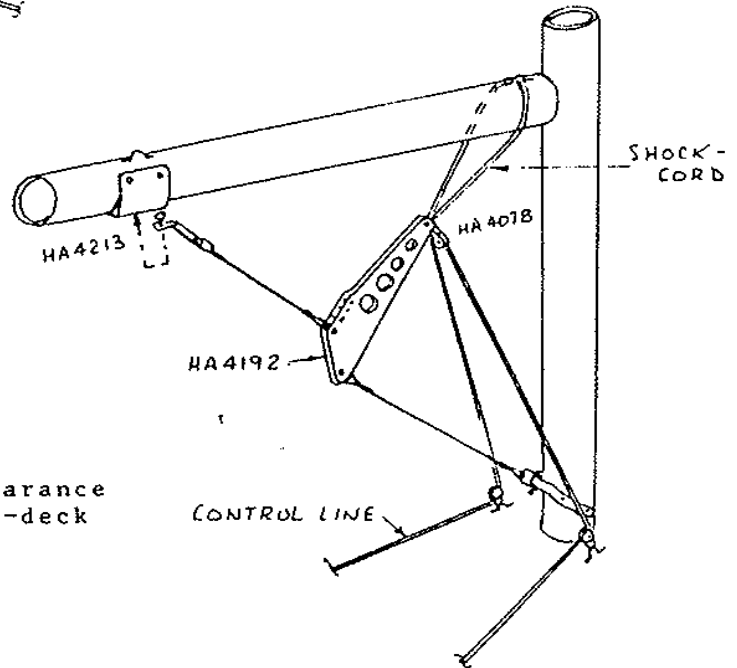


Fig. 4
preferred to fig.3
more daggerboard clearance
controls can be thru-deck

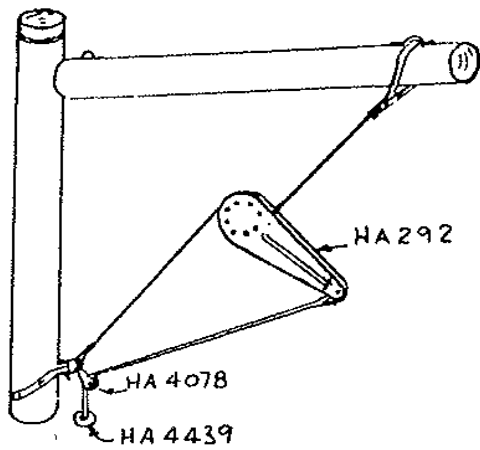


Fig. 5
could be reversed
sim. to fig.4.
thru-deck controls