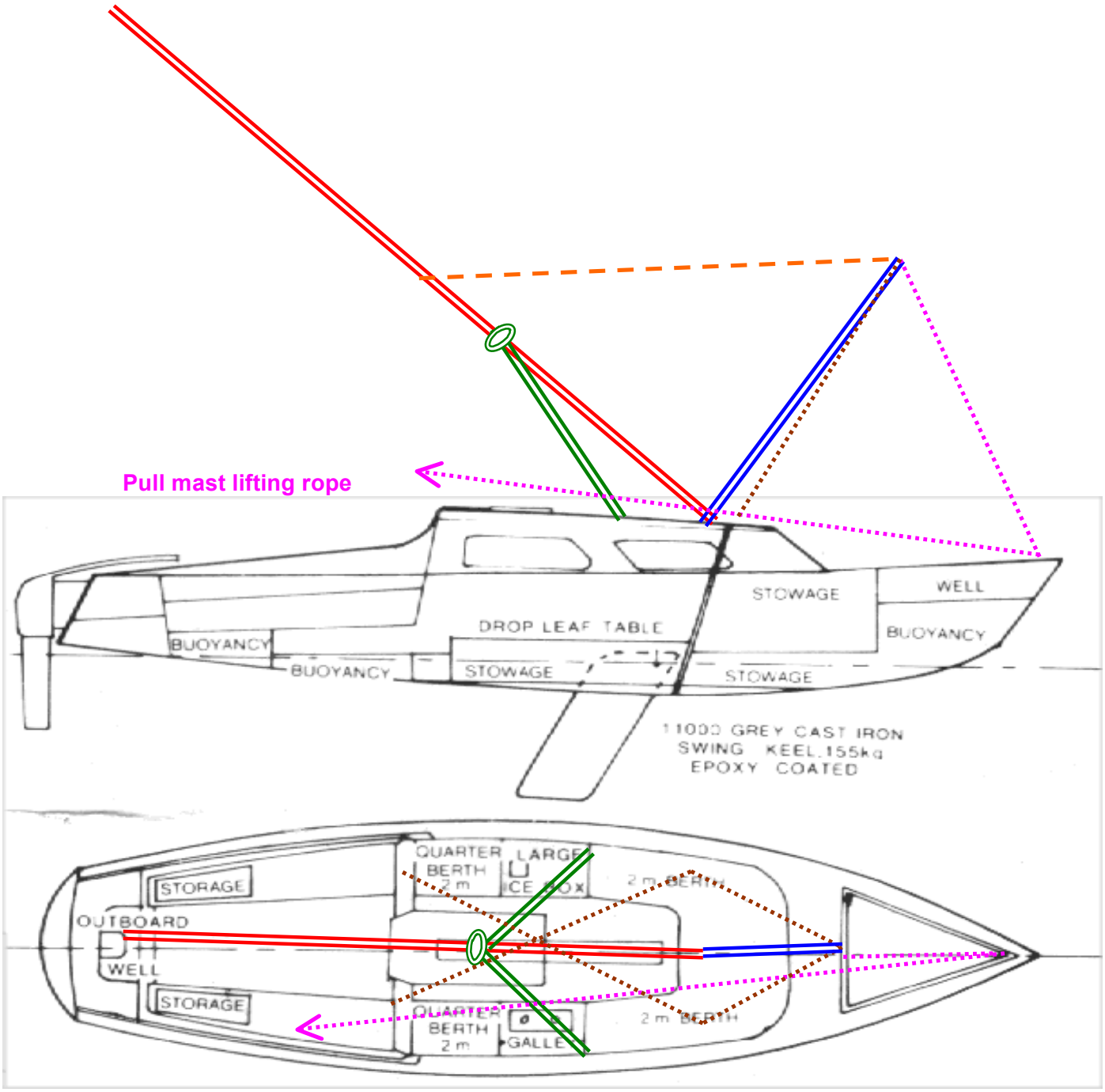
RL 24 Trailer Sailer - *single-handed mast raising*

Further information is available from Bob Smith, 1 Brown Ave, Alstonville, NSW Australia. bobheathersmith@gmail.com
A 4 minute video of the mast raiser is available on www…….

So what's the problem?

After nearly 30 years of raising and lowering my RL 24 mast on my own without any special lifting gear, I decided to rethink safety issues. What I needed was a system that was relatively simple and quick to set up; would allow me to safely raise and lower the mast single-handed from the cockpit in most wind conditions without risk of it coming crashing down. So I have come up with a ***sliding collar*** that snaps onto the mast and is fitted with 2 ***stabiliser bars*** which, when combined with the traditional ***lifting pole***, ensures that the mast goes up / down in a straight line by simply pulling the mast lifting rope.

How does it work?



Mast raising steps:

Step 1: Engage mast base and check all rigging is clear

- *support the mast tip in near a horizontal position;*
- *insert the mast base into the mast step;*
- *ensure that the two main side stays are set to the correct length and are securely fastened to the deck "U" bolts;*
- *check that all other stays will not foul deck fittings during the mast raising;*

Step 2: Rig the lifting pole

- *move the 2 jib sheet sliding carriages to a position directly abeam of mast step;*
- *run a* mast lifting rope *through a block shackled to the desk forestay "U" bolt and return the tail to a deck winch;*
- *attach the* ***jib leads*** *(brown), spinnaker pole* ***topping lift*** *(orange) and the* ***mast lifting rope*** *(pink) to the lifting pole;*
- *insert the* ***lifting pole pin*** *(blue) into the previously drilled hole (10 mm dia x 50 mm deep) in the cast aluminium mast base so that the lifting pole stands upright when unsupported;*
- *gently brace the lifting pole by securely cleating off the jib sheets, the spinnaker topping lift and mast lifting rope;*

Step 3: *Attach sliding collar and stays*

- *Clamp the* ***sliding collar*** *(green) to mast;*
- *Attach the* ***stabiliser bars*** *(green) to the inner stay "U" bolts and then to the sliding collar;*

Step 4: *Raise mast*

- *Check that the sliding collar, stabiliser bars, lifting pole and associated ropes are securely fastened but not over-tensioned;*
- *Raise the mast in small increments initially by lifting it with one hand and pulling on the lifting rope with the other……keep 3 turns around the winch drum to take the load;*
- *Keep checking that the sliding collar and stabiliser bars are not locking up and that the jib leads are correctly tensioned;*
- *When the mast is fully raised, securely cleat the mast lifting rope to ensure that mast will not fall;*
- *Attach the forestay and tension*

Materials:

Aluminium:

1 x 200 mm length of oval mast section (125 mm x 100 mm) (2 mm wall) (yoke body)
1 x 300 mm length of strap (25 mm x 4 mm) cut into 2 x 150 mm lengths (yoke stabiliser top end fittings)
1 x 400 mm length of angle 30 x 30 mm (3 mm thick) (cut and drilled to hinge and clamp yoke cheeks together)
50 x 5 mm diameter rivets (15 mm long)
1 x 6.0 m of 35 mm OD tubing (2 mm wall) cut into 2 @1.5 m[1] (approx) (yoke stabilisers) and 1 @ 3.0 m[2] (lifting pole)

Stainless steel:

200 mm piano hinge (yoke hinge)
6 x 35 mm bolts (6 mm diameter) + 6 nuts + 2 large washers to suit (yoke clamp)
100 mm x 10 mm rod (lifting pole pin)
4 x 50 mm saddles + 2 x 50 mm x 3mm bolts (lifting pole top end fittings)
2 x RF 180 Strip block hanger (yoke stabiliser bar lower end fitting)

---

[1] *Length of stabiliser bars need to be tailored to individual boats*
[2] *Length of lifting pole needs be the distance from forward edge of mast base to the centre of the forestay "U" bolt, plus + 50mm.*

1 x 50 mm block + shackle (attach to forestay deck u-bolt

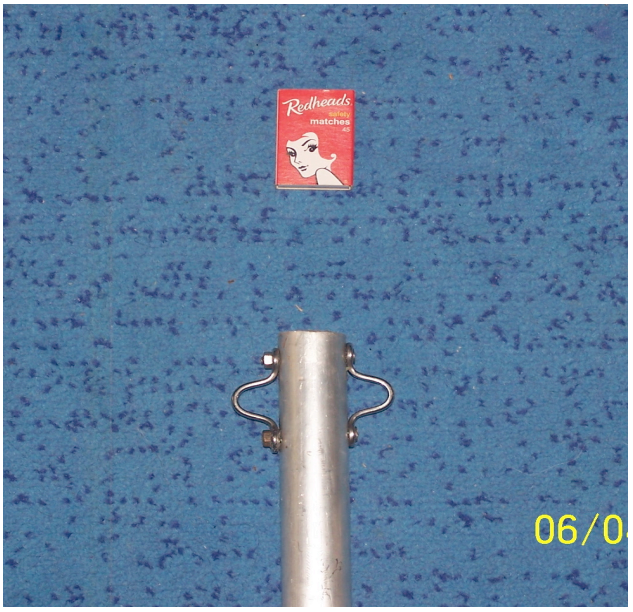
Plastic:

10 mm plastic breadboard cut into 200 mm x 20 mm strips (low-friction slides inside yoke)
1 m x 12 mm double sided tape (to attach slides)

The total cost of new materials is approx…….. A$

Lifting pole

Top end of lifting pole



Bottom end of lifting pole

Sliding yoke fitted plus 2 stabiliser bars:

Sliding yoke (opened) with stabiliser bars (detached)

Top and bottom ends of stabiliser bars

Tools:

Angle grinder, electric drill and a rivet gun.