

MORETON INVESTIG TOR ASSOCIATION

Technical Report No. 5 - Main Sail Slab Reefing Technique

Technical Report: D.J.F. Williams, A.J. Chew

Introduction

The unpredictable nature of the weather in Moreton Bay requires that sail area can be reduced at sea quickly, conveniently, and safely.

The system described in this report is perhaps the most sophisticated system possible. Variations to the recommendations are possible with consequent reductions in cost and speed of performing the sail reduction.

Purpose of the Report

This report describes the system to allow the mainsail to be reefed in the quickest and safest manner possible. This is achieved mainly through the use of diagrams.

The procedure for reefing the main while under sail is described in detail.

The "Jiffy" Reefing System

Figures 1, 2, and 3 show the system in detail. The parts list below will allow components to be ordered for the job.

The installation of components is very simple and significant cost reductions can be effected by doing the job yourself. "Pop-rivetting" is a very simple procedure. An electric drill and a "pop-rivet" gun are the only major items of equipment required and will serve as a very useful investment in the future.

The confidence level in predicted weather conditions will determine if you should rig the full system on shore.

The "belly" of the sail is made fast at the foot by lashing through the reefing eyes and around the boom.

Notes

Note I: Position the block (2) and the saddle on the centre line of the boom and in such a position that the clew-reef will pull the clew down and out at the same time. The angle of the pull should be about 45 degrees as shown.

Note II: The topping lift for the boom is an optional innovation. Personal preference will prevail. The writer prefers the use of a topping lift and finds the reefing procedure is simplified by its installation.

A block the same as item 2 is required to be attached at the top of the mast and to one side of it. When positioning the block ensure that you allow for the fact that the mast cap penetrates about $\frac{3}{4}$ " and the bolt rope groove is surprisingly deep.

The topping lift is controlled by a jam cleat the same as item 5 set on the same side of the mast as the block and about 3' from the base of the mast.

N.B. The topping lift must be eased off as soon as reefing is complete

Mainsail Reefing 2

and before the mainsail is sheeted on again or excessive tension will be generated in the line and the leech will not be under the correct tension and will luff badly.

Note III: The arrangement for the clew points of the first and second row of reefing eyes is the same except for the location along the boom. The 45 degree "pull" must be maintained. The location of the saddle and block are, however, reversed for the second clew so that its line runs on the opposite side of the boom to that for the first row.

Note IV: Reefing tack lines. See diagram. The saddle (1) and the block (2) are drawn offset for clarity only; in fact these components should be set up exactly opposite each other. Two lines can be rigged, one for each tack eyelet. One will need to be longer than the other. They may originate from the same saddle, but if two lines are rigged they should lead to their own cleats.

Sail Change Order

Prevailing conditions and the skipper's judgement should determine when to reduce sail area and the order of changes.

The following guide to sail area is offered:

Wind Speed (mph)	Head Sail	Main Sail
0-12	No. 1 Jib	Full main
12-18	Storm Jib	Full Main
18-22	Storm Jib	One reef
22-40	Storm Jib	Two reefs
40 +	Don't go or run for shelter	(any port in a storm)

The head sail is the first to overpower this yacht and should be changed out for the storm jib before the main is reefed. Following the reduction in headsail area the performance of the ship can be re-assessed and a decision on the mainsail area made.

"Jiffy"/Slab Reefing Procedure

It is assumed that all lines have been run and are ready for use.

The sequence of events is as follows:

1. Adopt a safe secure position at the base of the mast. Ease the mainsheet and at the same time draw in the selected clew reef line. This will raise the boom.
2. Release the main halyard and pull the tack down tight to the boom.
3. Lash off the belly in the foot of the sail with a suitable cord.

Main Sheet Block/Cam Cleat

The cam cleat for this job is a little light but its performance can be improved with a small amount of attention.

Mai. sail Reefing 3

Inspect the jaws carefully for wear of the teeth. If the teeth are not sharp and straight they can be refurbished by stripping the arrangement and carefully filing the jaws with a three-cornered file.

Wind Guage

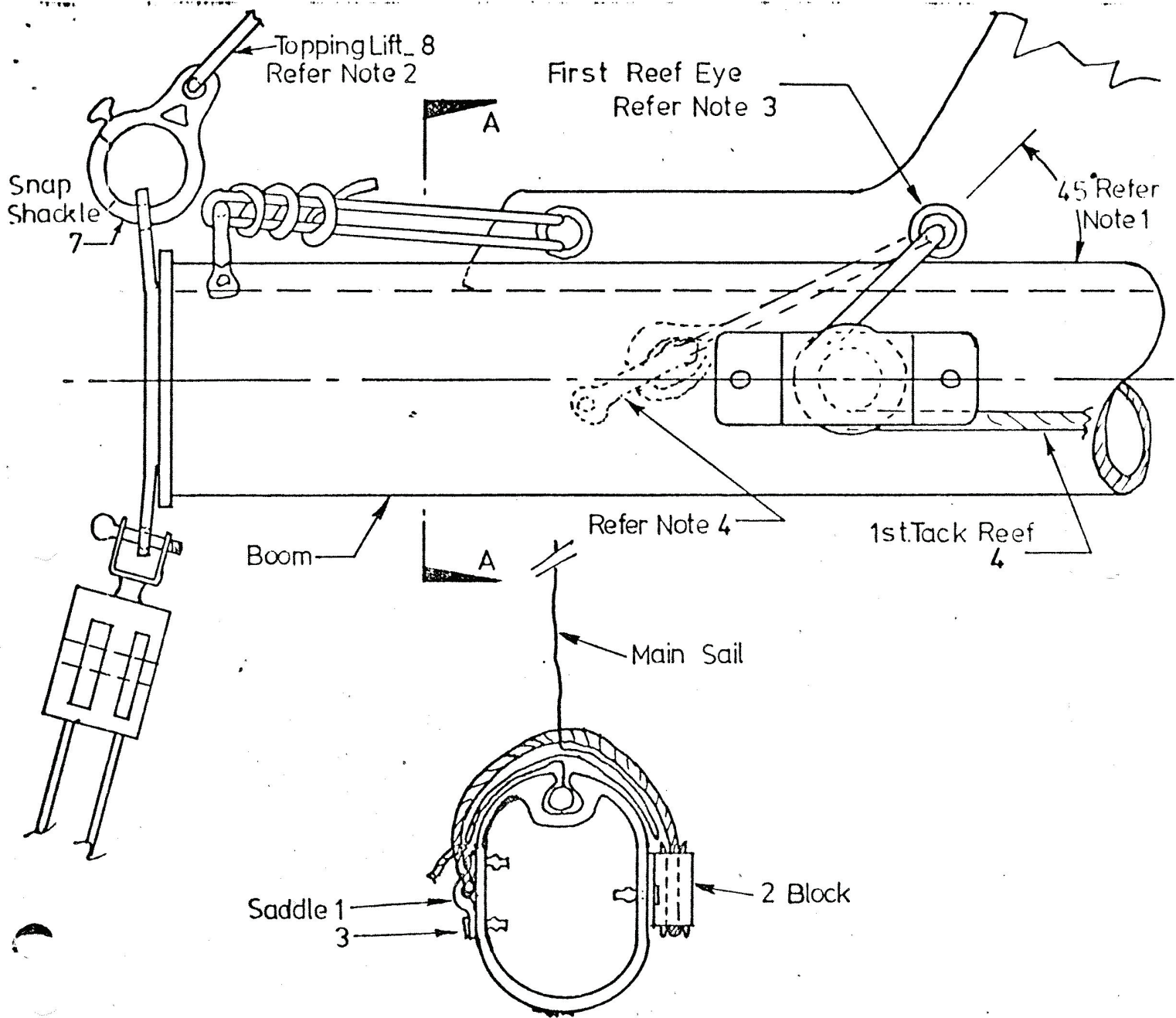
To eliminate the guessing game an economically priced meter, hand held, can be purchased for \$14 from the Sailing Specialists. This particular brand is a Dwyer meter with two ranges, 0-10 and 10-65 mph wind speed. Its operation is very simple and the writer has had good results from this instrument.

Sail Power

It is possible to "overpower" a yacht by presenting excessive sail area to the wind. I believe that this is due to the dramatic increase in surface friction and reduction in sail efficiency when the air velocity increases significantly (there are several other factors).

A yacht should be sailed hard but it must also be moving forward fast. If you are 'gunwhales under' and going nowhere (probably except sideways) you can guarantee your yacht is "over powered". Another simple test is that if she is correctly rigged for the conditions, she will accelerate nicely in the "puffs" - if she is knocked sideways too much and does not make up forward speed, ease the gear off or change down your sails.

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SECTION AA.

FIGURE 1 — TACK/OUTHAUL ARRGT.

Report N° 5

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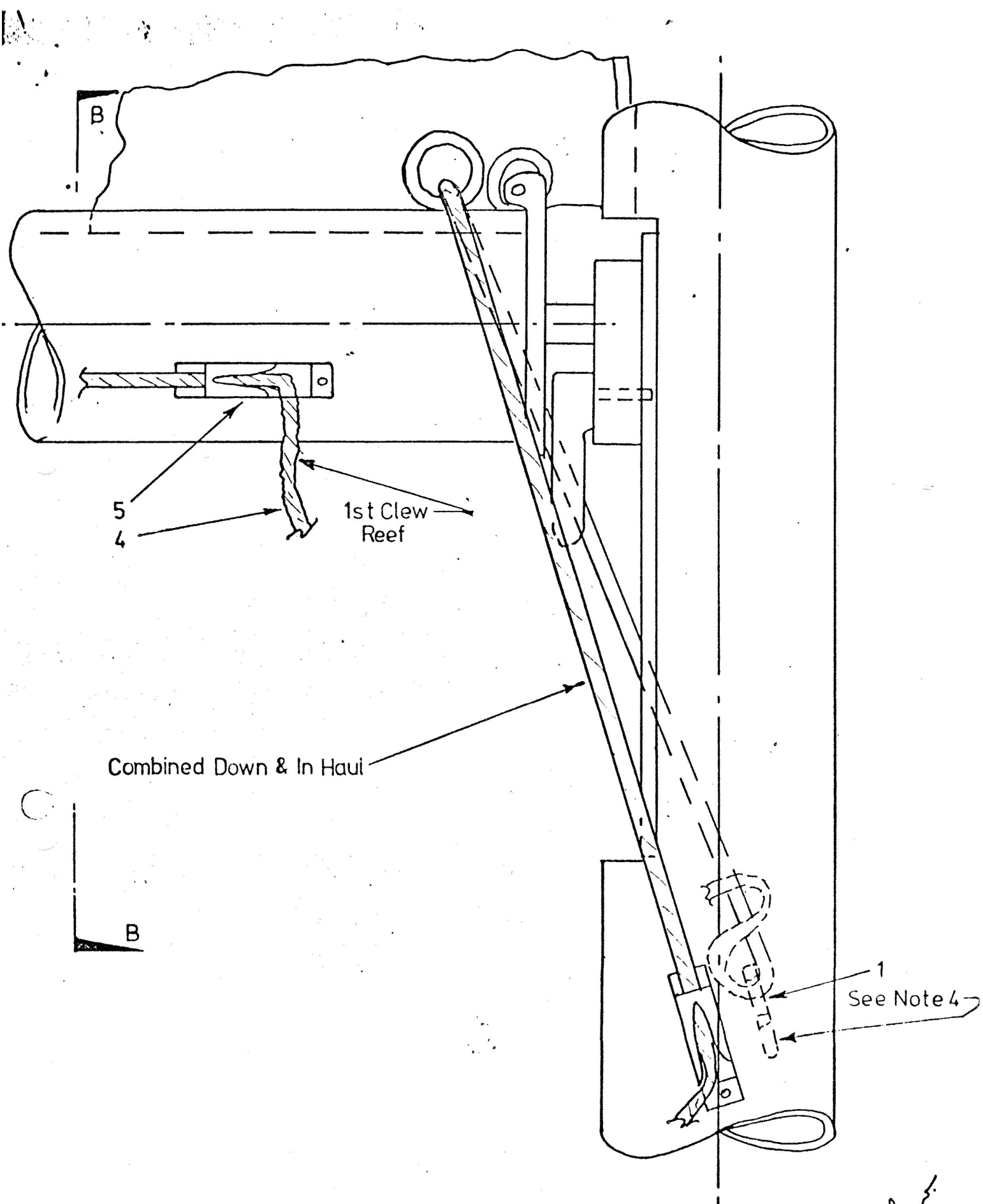
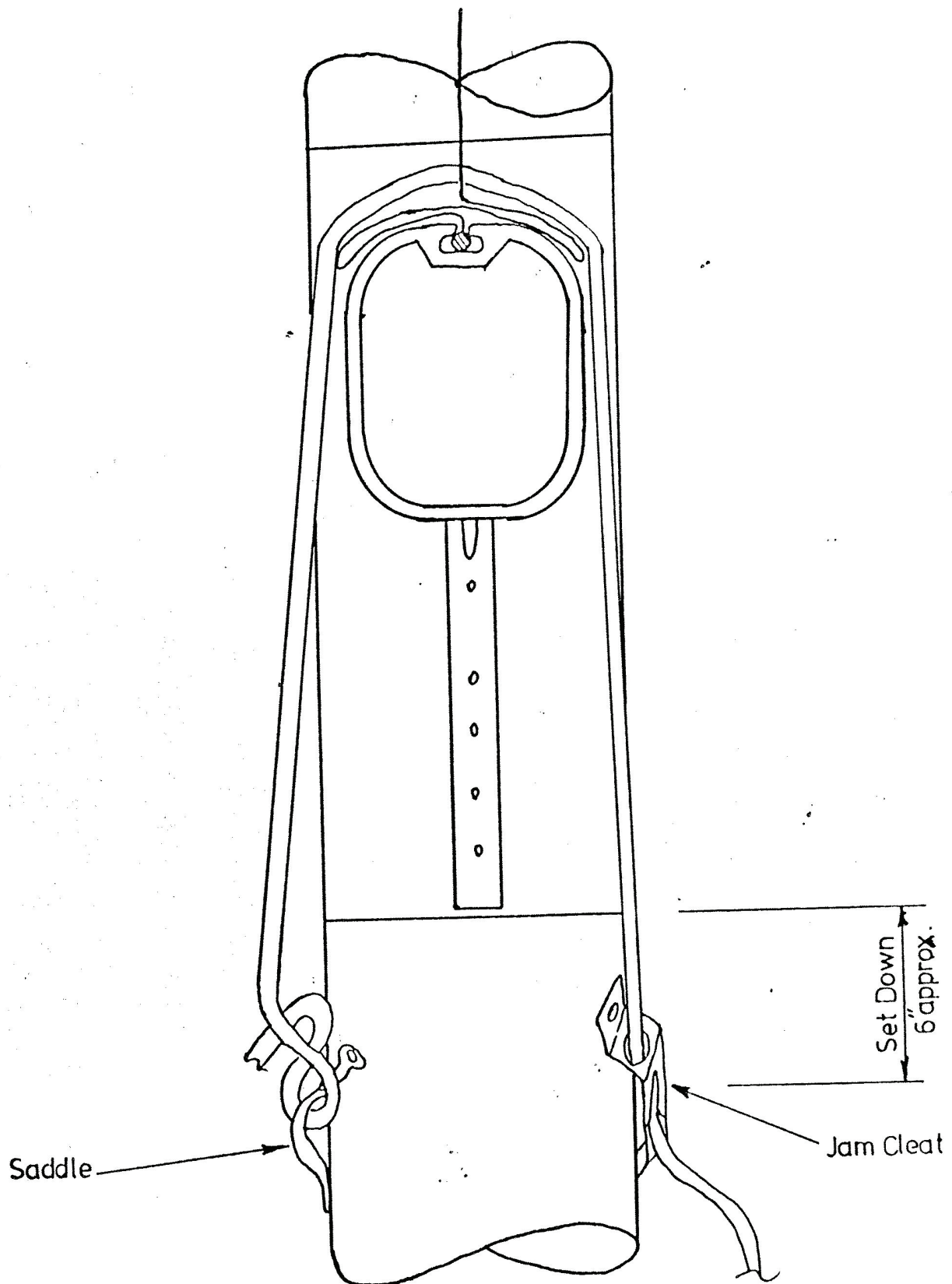


FIGURE 2 - TACK ARRGT

Report No 5

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SECTION B.B
FIGURE - 3

Report N2 5

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