

Freedom 21 Aluminum Mast

In response to a group member's request for information on an alternative aluminum mast design for the Freedom 21 I have measured & photographed the standard aluminum mast fitted to most of the Freedom 21's made in the UK during the 1980's & 1990's – see attached sketches. A few of the UK-built Freedom 21's were fitted with carbon fibre masts but most of them were fitted with the aluminum mast provided by the now defunct UK mast manufacturer Proctor Masts Ltd.



I understand that this large diameter aluminium mast was based on an existing available anodised flagpole or urban light standard pole which was then internally sleeved with a split aluminium reinforcing tube which was riveted in place. The main mast "tube" is 3mm (0.118") thick and the inner split tube reinforcement has a wall thickness of 4mm (0.157"). The split inner reinforcing tube is arranged so that the "split" is aligned with the aft face of the mast – see photo opposite.

The mast "tube" and the inner liner are attached together with three lines on Monel rivets spaced at a 6" pitch. One line of rivets follows the forward face of the mast whilst the other two rivet lines are spaced at 120 degrees – see sketch attached and photo below.



Rivet line along front face of mast



Gooseneck fitting – riveted to mast



Masthead halyard fitting & end of sail track



Spinnaker halyard fitting



Slots for halyard exit from mast – S/S rounded bearing strips fitted internally & externally to prevent rope abrasion.

Cautionary Comments: These dimensions were taken from the aluminum mast manufactured by Proctor Masts Ltd in 1988 and fitted to my UK-built Freedom 21 and the following comments should be carefully considered by anyone thinking of having an aluminum mast manufactured to these dimensions:

- *I can take no responsibility for the suitability of this mast design for the Freedom 21. I have simply transcribed the key dimensions of the Proctor mast and I cannot underwrite this mast design in any way.*
- *I have no means of assessing the grade & temper of the aluminum alloy used in this mast design and can provide no guidance in this regard.*
- *Whilst the sails fitted to my UK-built Freedom 21 set well on this mast I have no means of determining if a mast made to these dimensions would be an appropriate and direct substitution for USA-built Freedom 21 carbon fibre mast or that sails designed for the USA manufactured carbon fibre masts would set well on this mast design?*
- *I have taken these dimensions and photographs in good faith as a guide to other Freedom 21 owners. I have used a basic DIY tape measure and these dimensions may include some inadvertent measurement errors?*

Sorry to inject these cautionary comments, but I would hate for someone to go to the expense of having a mast made-up to these dimensions and then find it did not fit their USA-built Freedom 21 or that the sails did not set right?

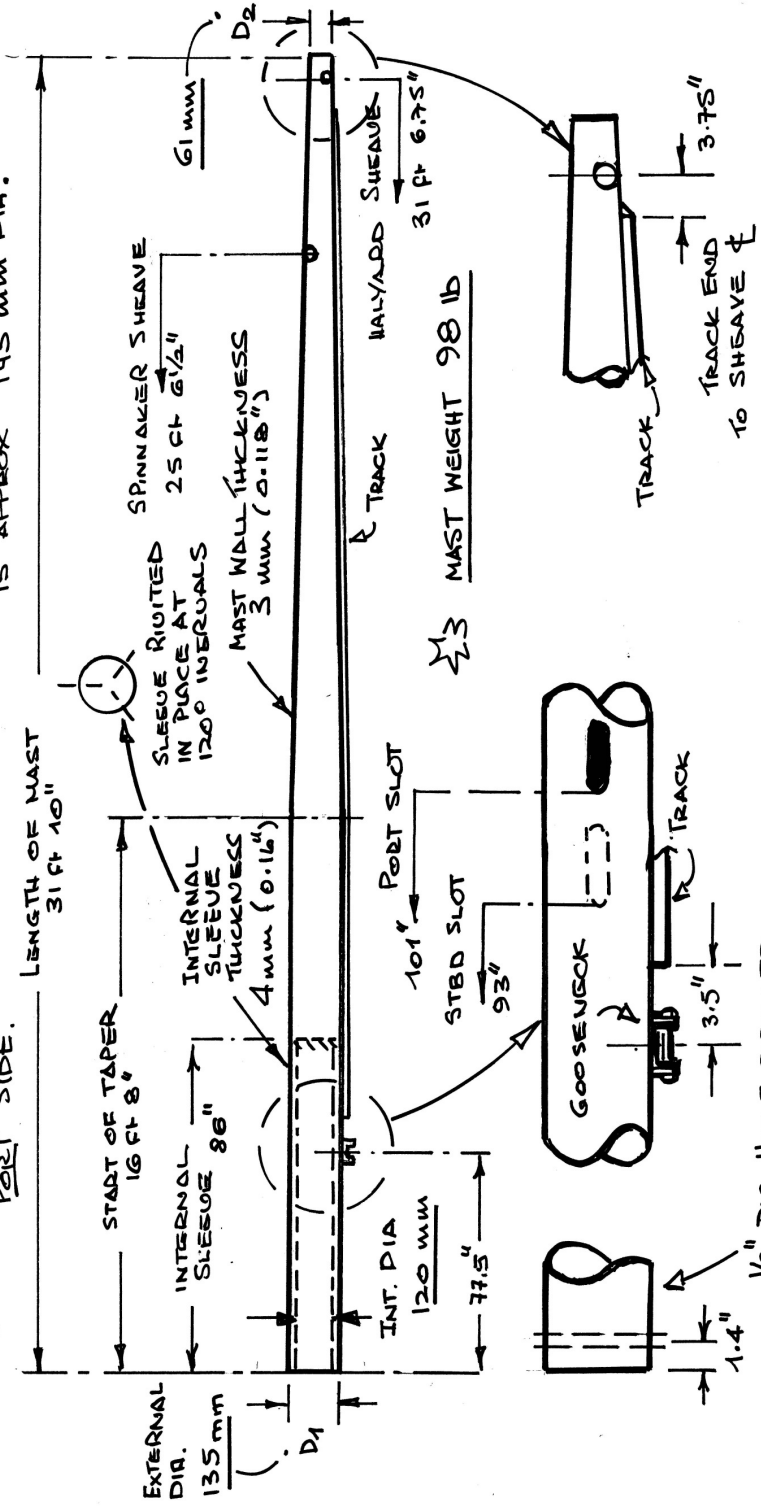
For my part I am currently seeking a UK source of aluminium flagpoles to find a suitable mast and I then intend to talk to a few leading UK mast manufacturers asking them if they would be prepared to take delivery of an internally sleeved flagpole “blank” and fit the necessary fittings and track and machine the halyard exit slots for me? When I find a suitable supplier of a mast “blank” and complete my discussions with UK mast manufacturers I will post all of this information on our website.

Wilf Bishop
15th October 2006

①

PROCTOR FREEDOM 21 ALUMINUM MAST

Looking at mast from port side.
 Mast hole in deck is approx 143 mm dia.



NOT TO SCALE

WB 7/1/06

