



MANCHESTER CRUISING ASSOCIATION

SAILS: CONSTRUCTION, DESIGN AND USE

STEVE GOACHER

14 JANUARY 2010

Steve is a competitive sailor and a national champion, and has a knowledge second to none of the vagaries of the wind on Windermere, where he has a state-of-the-art sailmaking business. He explained the characteristics of woven fabrics relative to laminates with the aid of swatch samples. Woven fabrics are easier to handle and make up, and last longer, resisting flogging and folding damage, but stretch badly, particularly on the bias. However with multi-layer laminates fibres can be built-in to provide strength where it is needed. Sails are now designed on a computer, and the panels and fibres cut out and laid down by a machine. In this way some forty panels can be assembled into a genoa or mainsail, and strength is provided along the radii from two or three corners.

We saw photographs of racing yachts in which inattention to setting or maintenance had led to the sails stretching and losing their figure, and in contrast 12m yachts sheeted very nearly flat. In fact all sails regardless of size perform best with a belly 1 foot deep! Aerial photos of these yachts, close hauled, showed the very different angles of mainsail and genoa, illustrating how the pair work together, with the upwash effect enabling the yacht to tack through angles of (only) some 60 degrees.

Discussing downwind sails Steve outlined the requirements for symmetric and asymmetric spinnakers (the latter being variously known as cruising chutes or gennakers). The key concept was that power depended on the length of the luff.

Questions were invited; it appeared that furling mainsails presented design problems, because of the hollow leech. Members probed the cost of a high-tech suit of sails.

RG