

Figure 5.1 The WINDFLY Rig mounted on a kayak

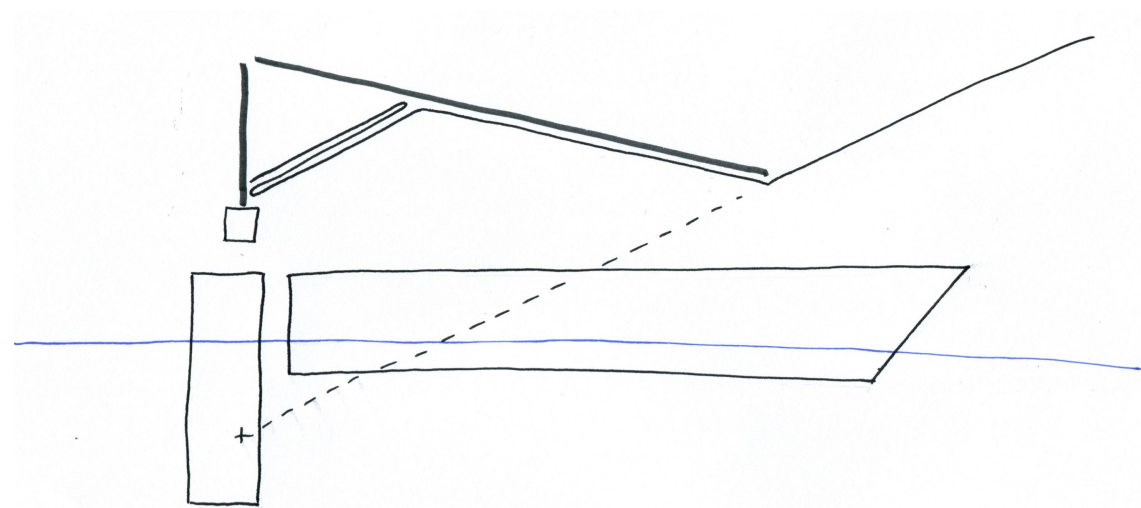


Figure 5.2 The WINDFLY Rig mounted above a combined 'keel-rudder' system

## 5 Mounting the WINDFLY Rig on a displacement boat

At speeds corresponding to a Froude number of up to around 0.45 a hull operates in the displacement mode.

For hulls operating in the displacement mode the WINDFLY Rig can be located at any point along the length of the hull. A keel or centreboard will be required below the WINDFLY Rig to resist lateral loads.

At times when the boat is moving through the water at very low speed there is insufficient load generated by the keel(s) / centreboard(s) to resist the lateral component of the kite load. If the WINDFLY Rig is located forward of the centre of mass the boat rotates so that the bow follows the kite and the boat starts to move forwards. If instead the WINDFLY Rig is located behind the centre of mass the boat rotates so that the stern follows the aerofoil and the boat starts to move backwards.

Therefore it may be preferable to locate the WINDFLY Rig forward of the centre of mass of the boat. This arrangement provides the maximum deck area free from rigging and reduces the risk of the boom sweeping across the deck. Figure 5.1 shows such an arrangement with the WINDFLY Rig mounted on a sea kayak. Using the WINDFLY Rig a sea kayak can sail upwind as well as downwind.

Alternatively the WINDFLY Rig may be mounted aft of the centre of mass, for example at the stern above a combined 'keel-rudder' which balances the lateral component of the kite load so that there is no leeway of the boat. Figure 5.2 shows such an arrangement. In this arrangement, at low speed the kite lines can be run through a guide at the bow so that the bow follows the kite until steerage way has been built up and the lines can be released from the guide. Typically the bow guide will be used during launch and retrieval of the kite / wing when the kite / wing is likely to be flown at low elevation for sustained periods.