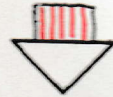


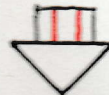
The diagrams in this section show the effect of forces acting upon a vessel.

These forces are represented by symbols:

Strong wind.



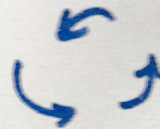
Gentle breeze.



Main direction of tide flow.



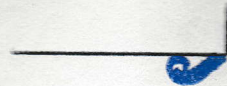
Turbulent water.



Air eddies causing low pressure.



Water eddies causing low pressure.



Direction of operator's effort.



Fig. 1. Rectangular pontoon drifting freely in a strong wind will adopt and maintain an attitude with the wind abeam.

EFFECT OF WIND ON A BARGE

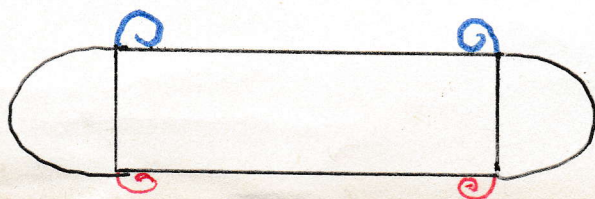
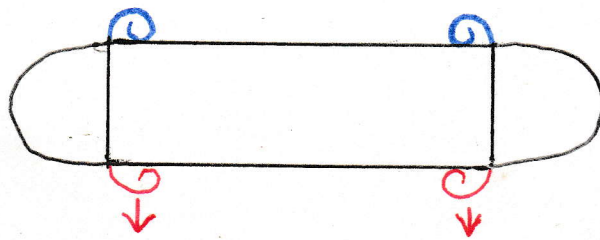
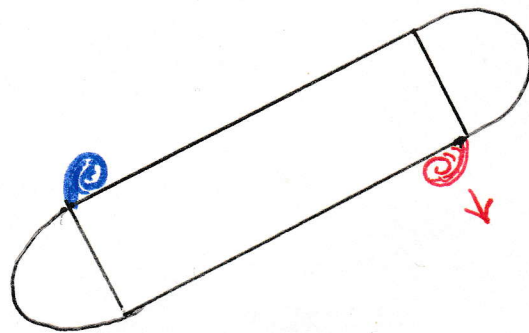
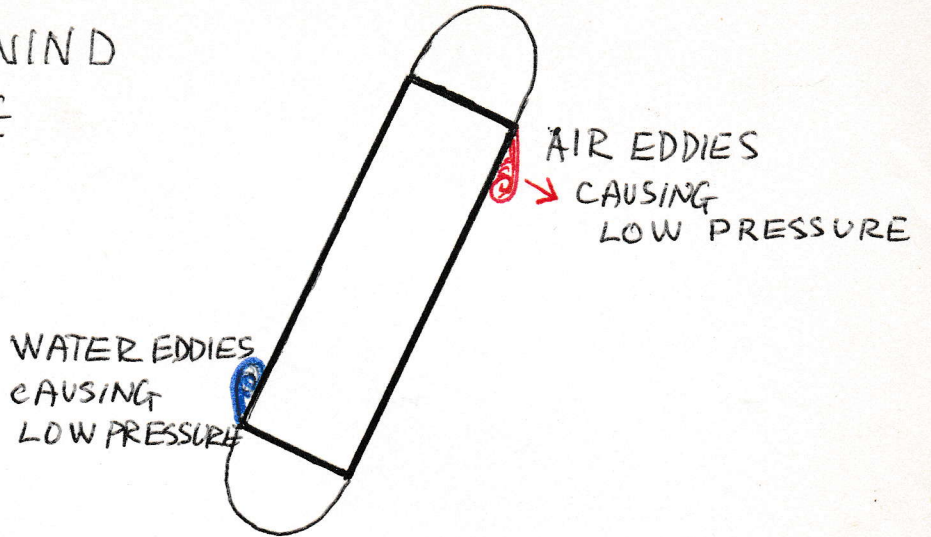
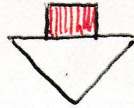


Fig. 2. The light barge in level trim drifting freely in a strong wind will adopt and maintain an attitude which has the wind slightly abaft abeam.

Fig. 3. She will gather a lot of leeway and a little headway, this is termed as "trading-ahead".

Fig. 2.

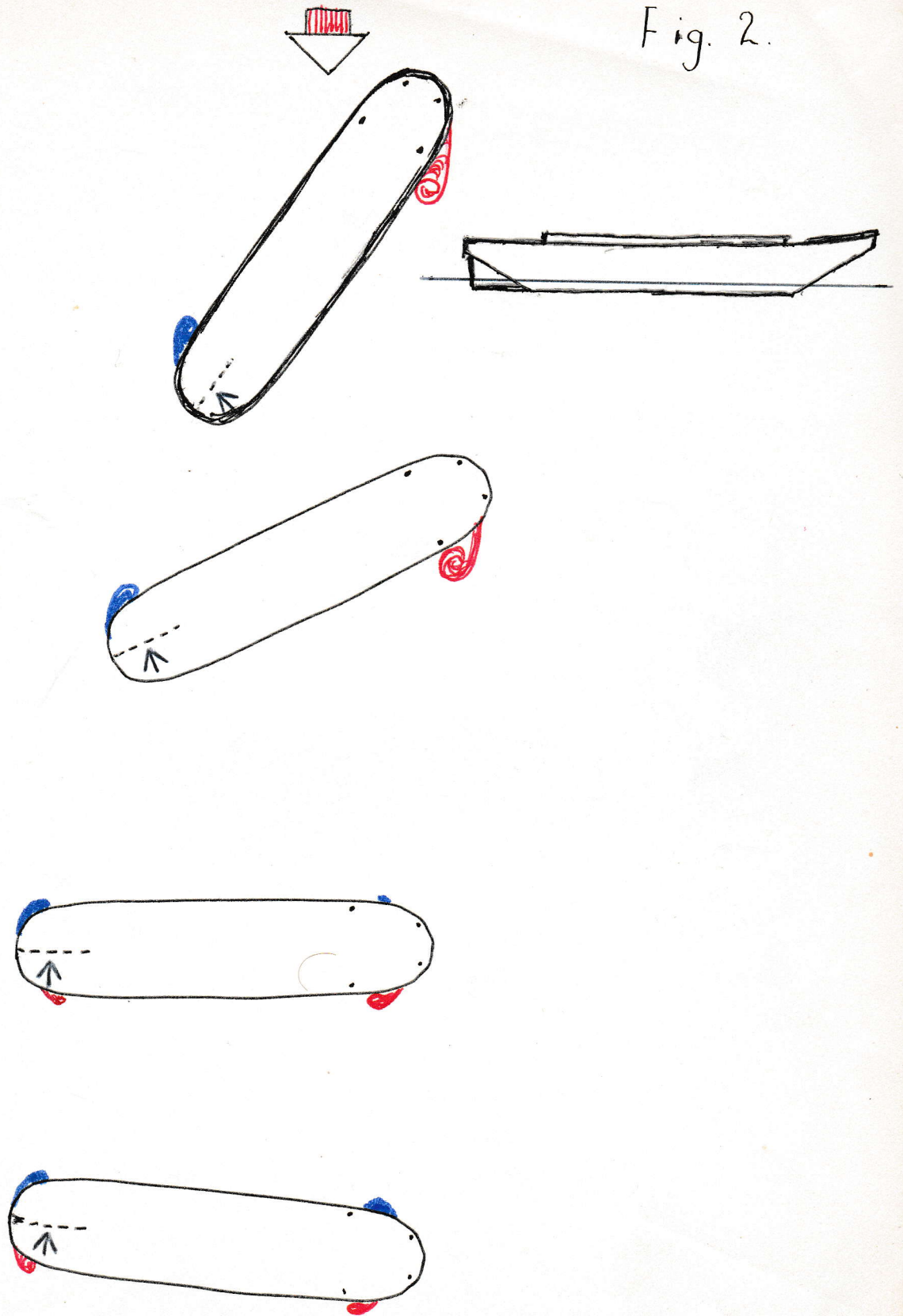
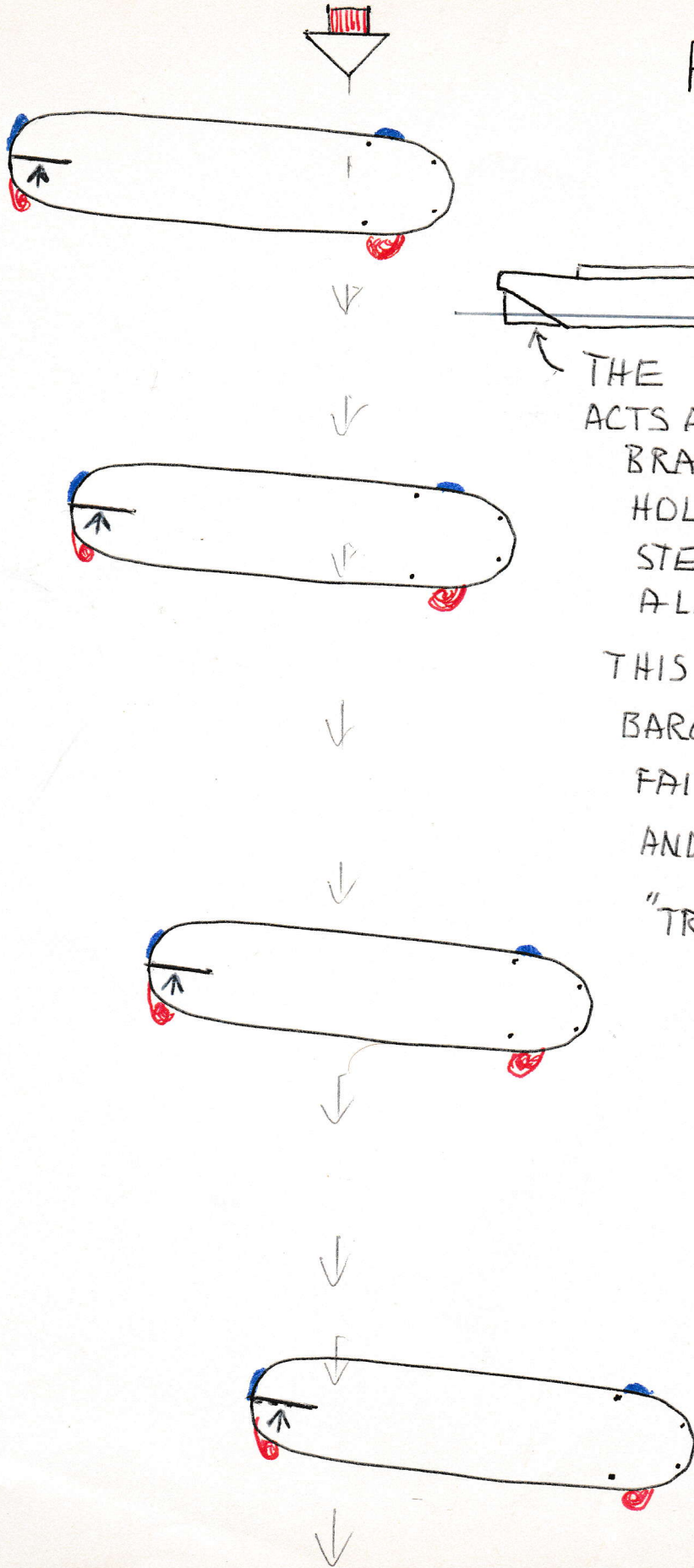


Fig. 3.



THE BUDGET
ACTS AS A WATER-
BRAKE AND
HOLDS YOUR
STERN UPWIND
A LITTLE.

THIS GIVES THE
BARGE SLIGHTLY
FAIR WIND,
AND SO SHE
"TRADES AHEAD"

Fig. 4. Trimmed well by the head, a barge
will "trade-astern".

Fig. 4.

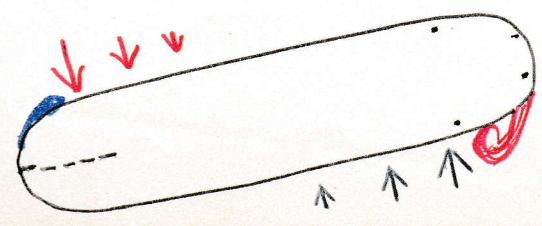
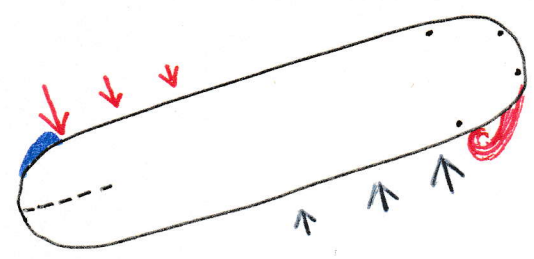
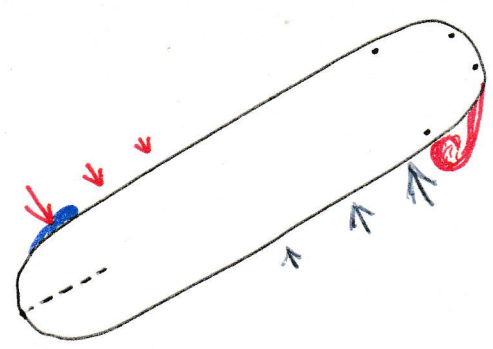
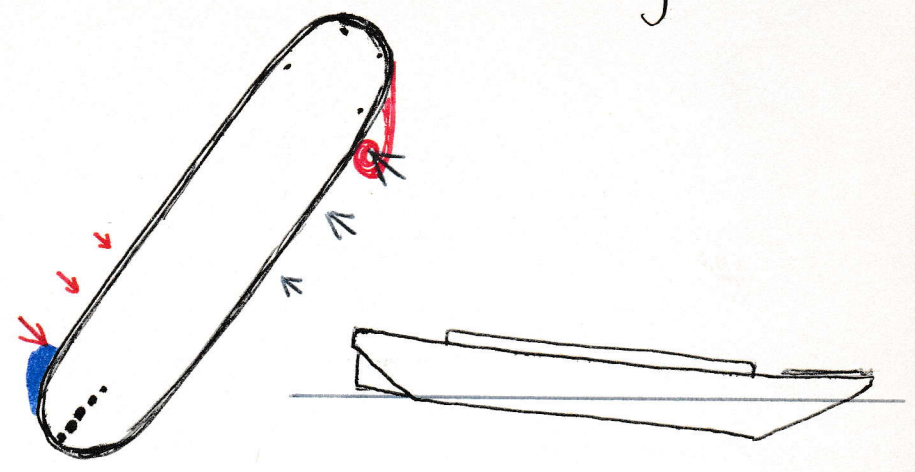
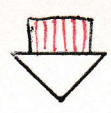


Fig. 5a. Three rowing positions being used
to turn a barge to starboard.

Fig. 5b. The parts of a barge oar.

Fig. 5a.

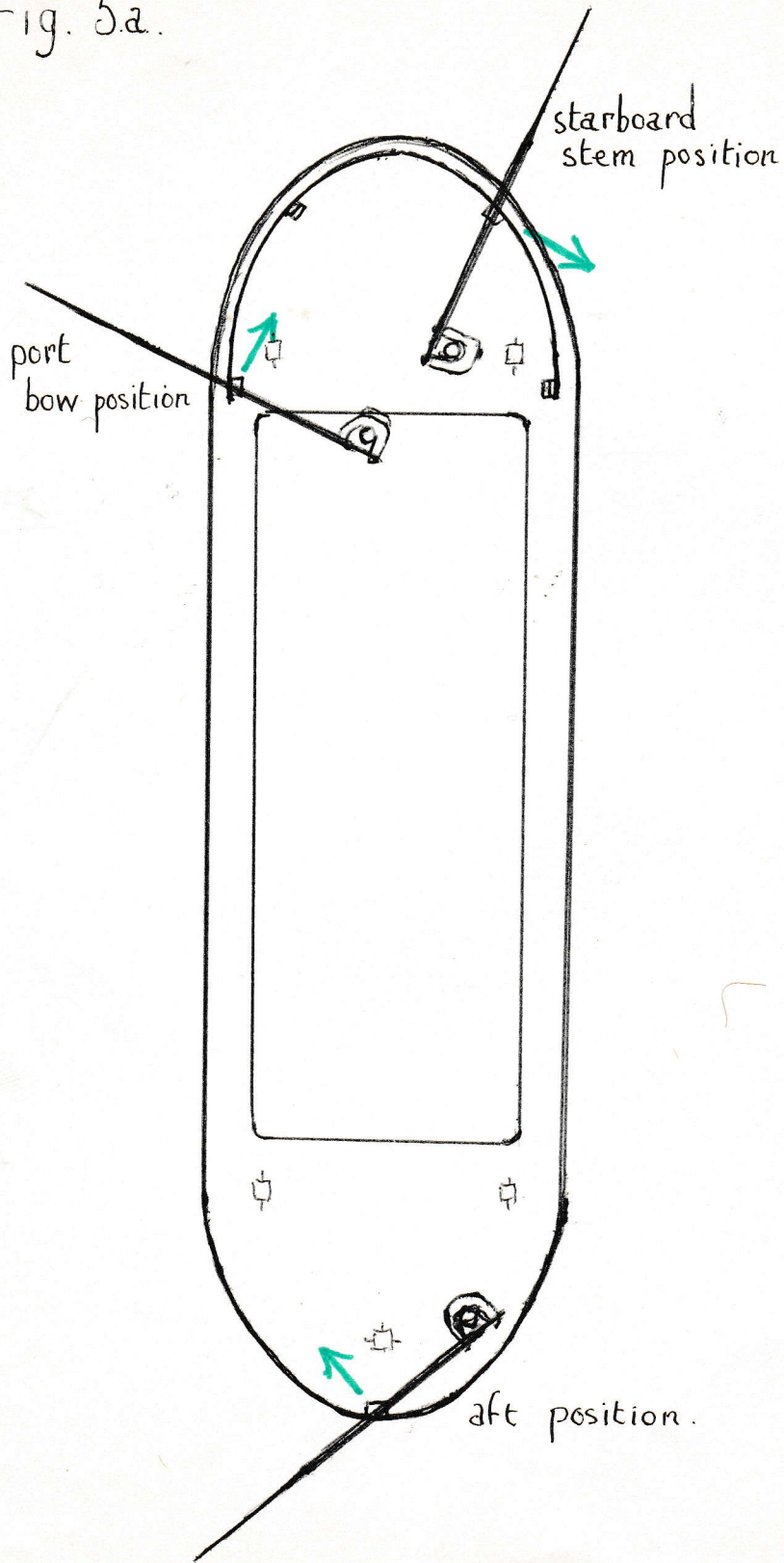


Fig. 5.b.

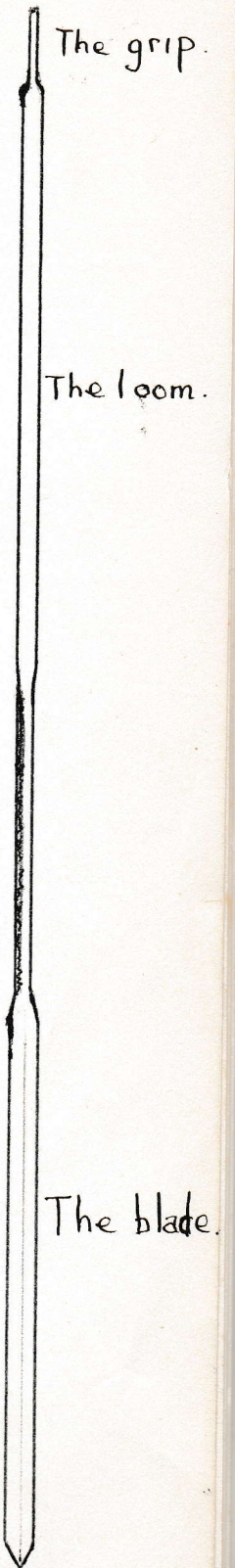


Fig. 6. Strong following wind is likely to
cause "broaching", followed by
"trading-ahead".

Fig. 6.

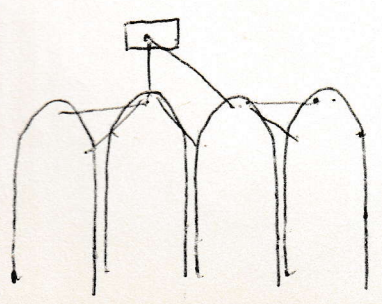
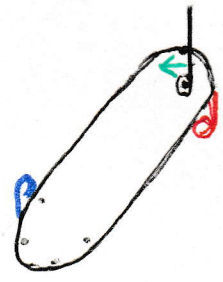
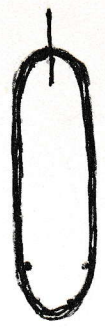


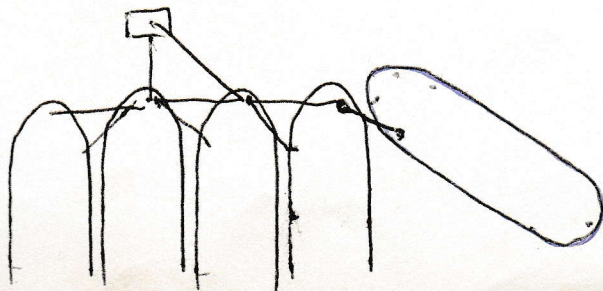
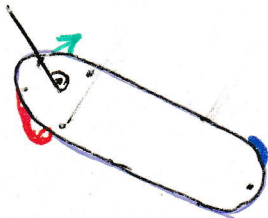
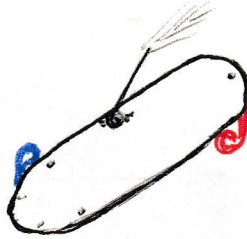
Fig. 7. Undesirable "trading-ahead" may be resisted by stemming the head up-wind.



Fig. 7.



Undesired "trading ahead" may be resisted by stemming her head up-wind



3

Fig. 8. Having made a fetch alongside a barge roads, the barge may be "winded" by swinging on a stern-rope, and then allowed to trade ahead away from the undesirable shore.

Fig. 8.

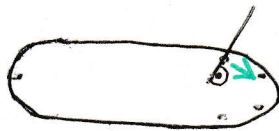
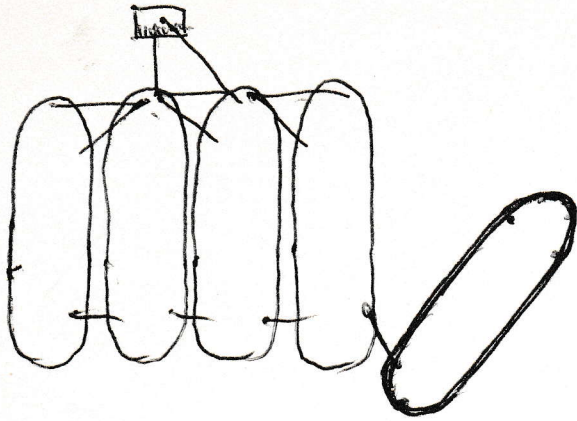


Fig. 9. Strong wind against tide slows progress
and increases the number of "tacks",
demanding frequent "winding".



Fig. 9.

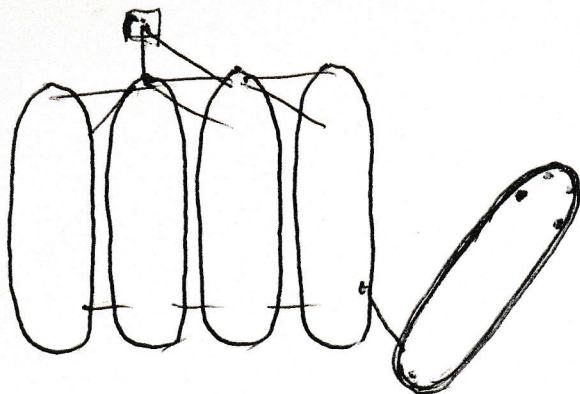


Fig. 10. Comfortable driving: a gentle breeze on the port quarter allows the oar to remain on the port bow without any turn to starboard resulting from it.



Fig. 10.

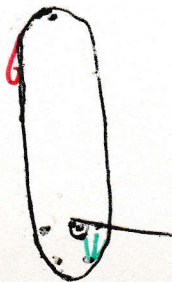
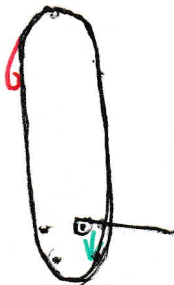
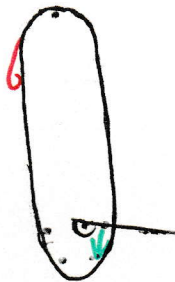
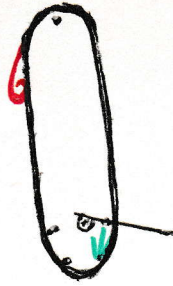


Fig. 11. In light airs: the bow position provides headway and the aft position allows steering.



Fig. 11.

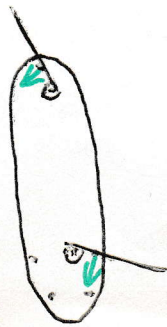
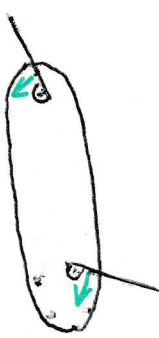
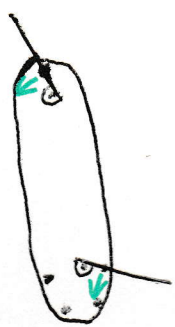
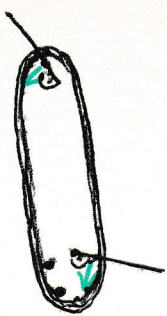


Fig. 12. In a straight reach: the arrows indicate the rate and direction of flow and the contrary flow behind a solid jetty.

Fig. 12.

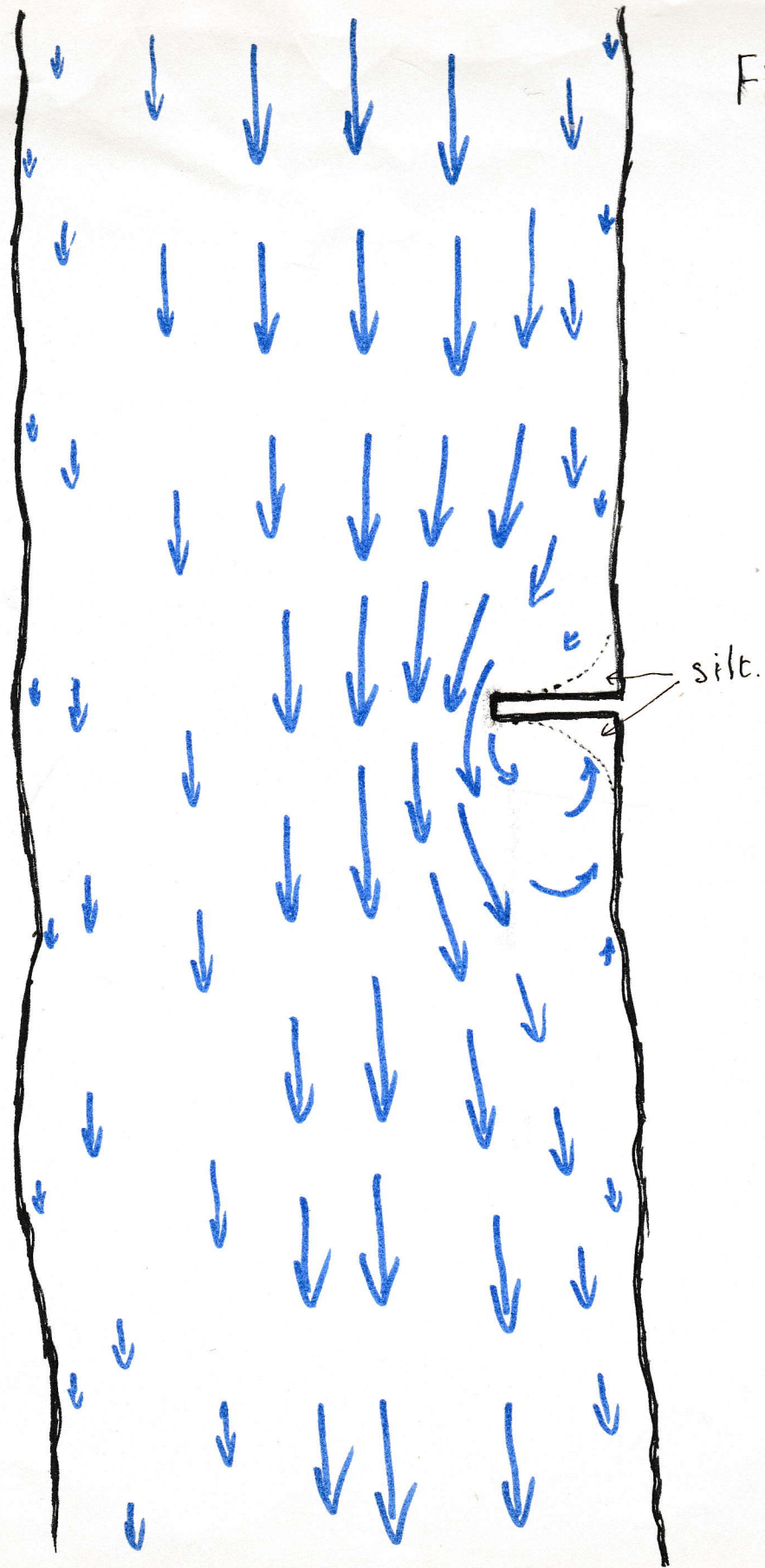
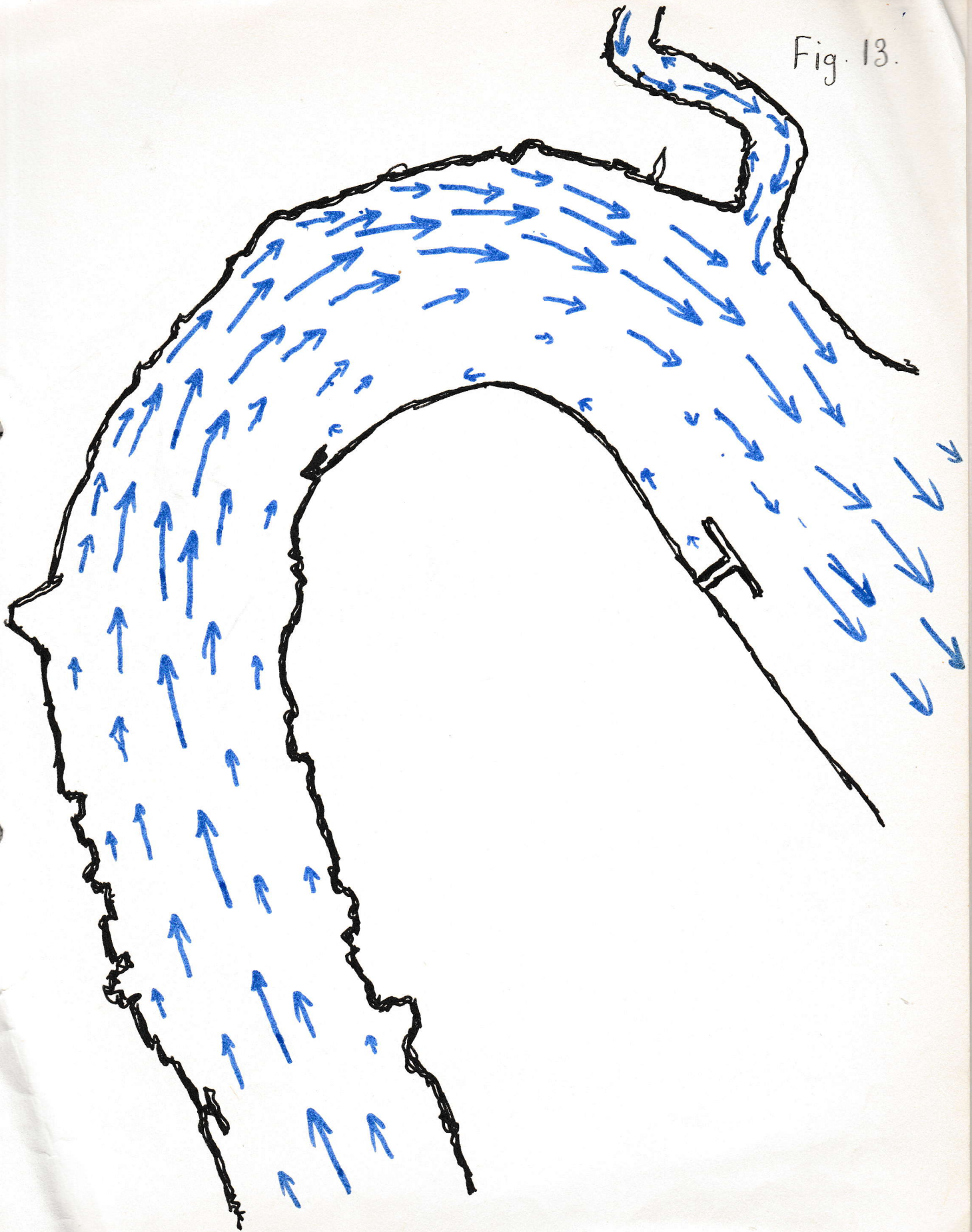


Fig. 13. At a bend the flow is fastest in the
bight, setting first inshore then
offshore.

Fig. 13.



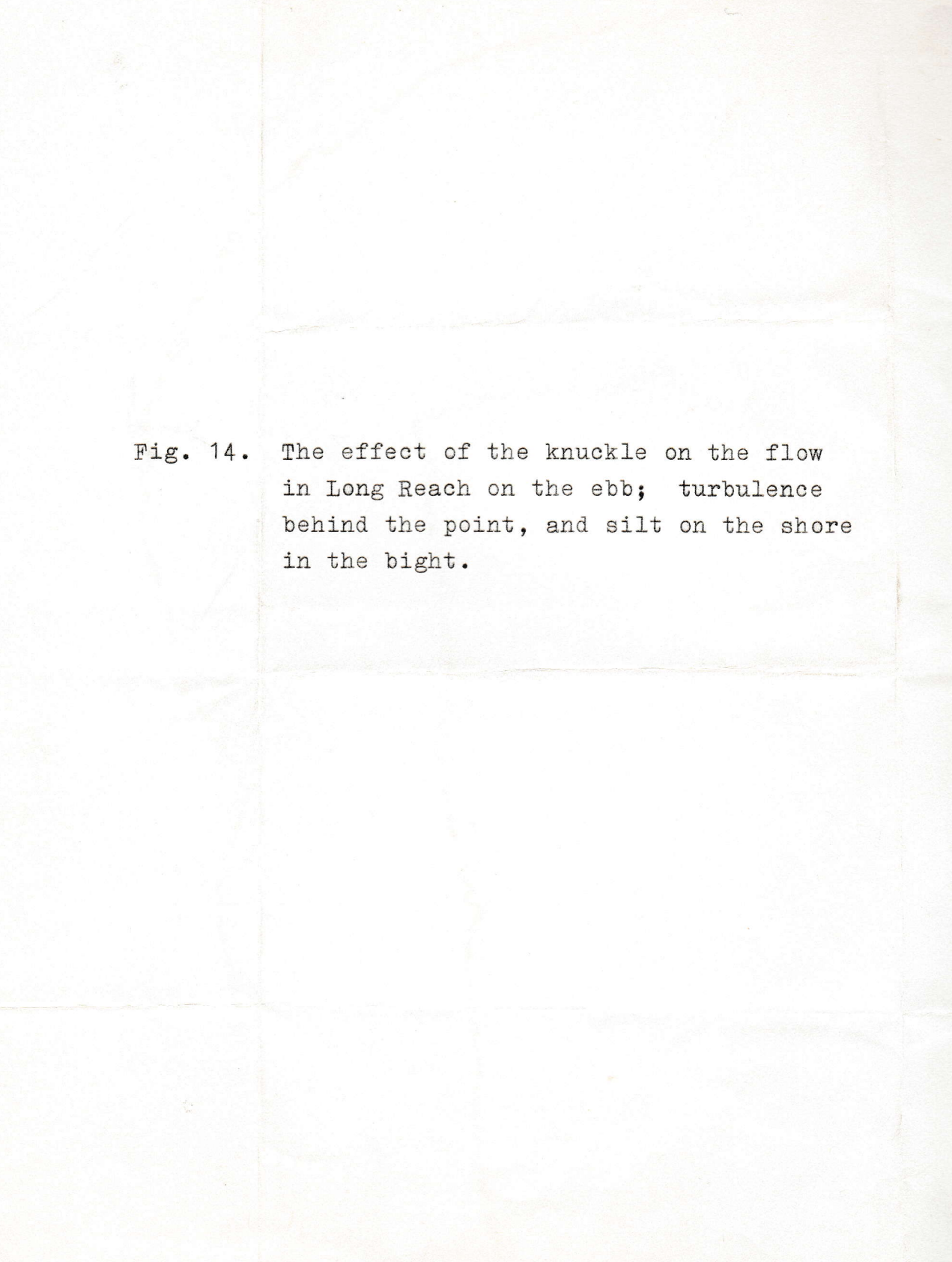


Fig. 14. The effect of the knuckle on the flow
in Long Reach on the ebb; turbulence
behind the point, and silt on the shore
in the bight.

Fig. 14.

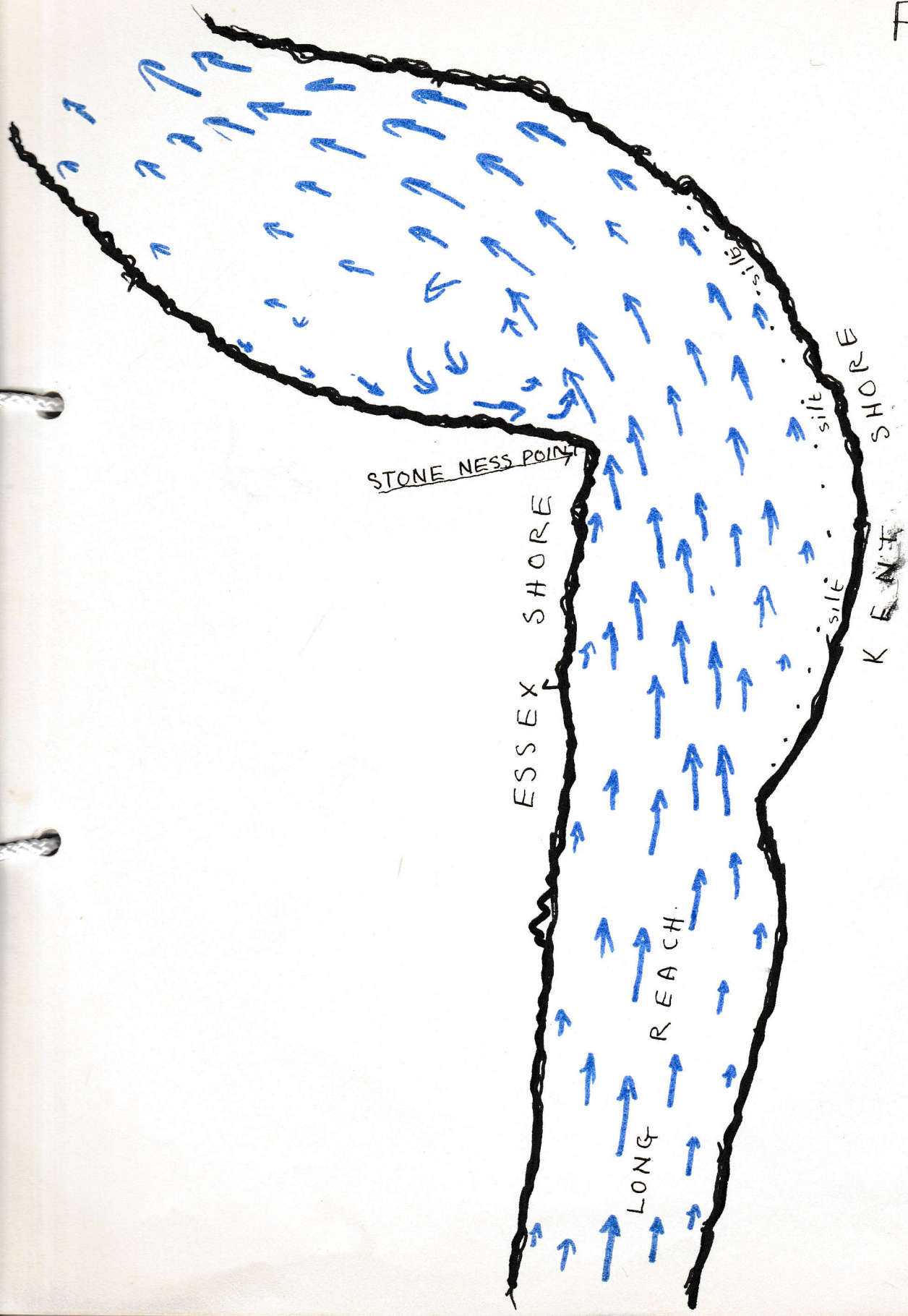


Fig. 15. Negotiating a bend demands an early effort to make progress towards the point when a midstream position is desired.

Fig. 16. The 6 : 1 ratio of a 3 knot flow
and a half knot headway.

Fig. 17. The use of the destination as one of two transit points, the other being a crane further distant.

The head is stemmed up-tide when the destination is near, to reduce the risk of bouncing away.

Fig. 17.

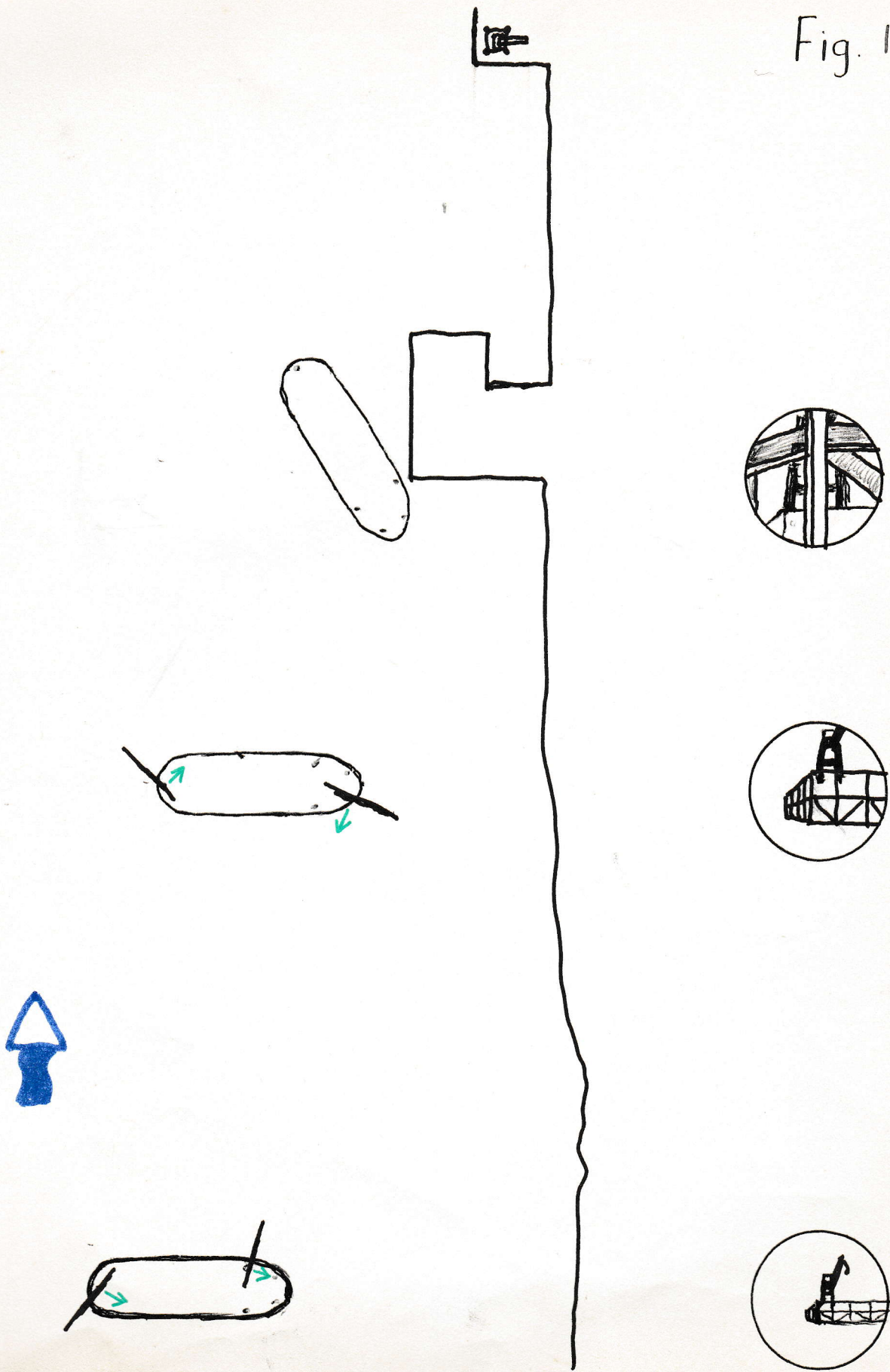


Fig. 18. Approaching a bridge (in this case Southwark Bridge) regard must be paid to the tide set.

(2)



Fig. 18.

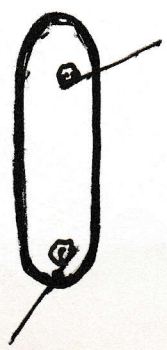
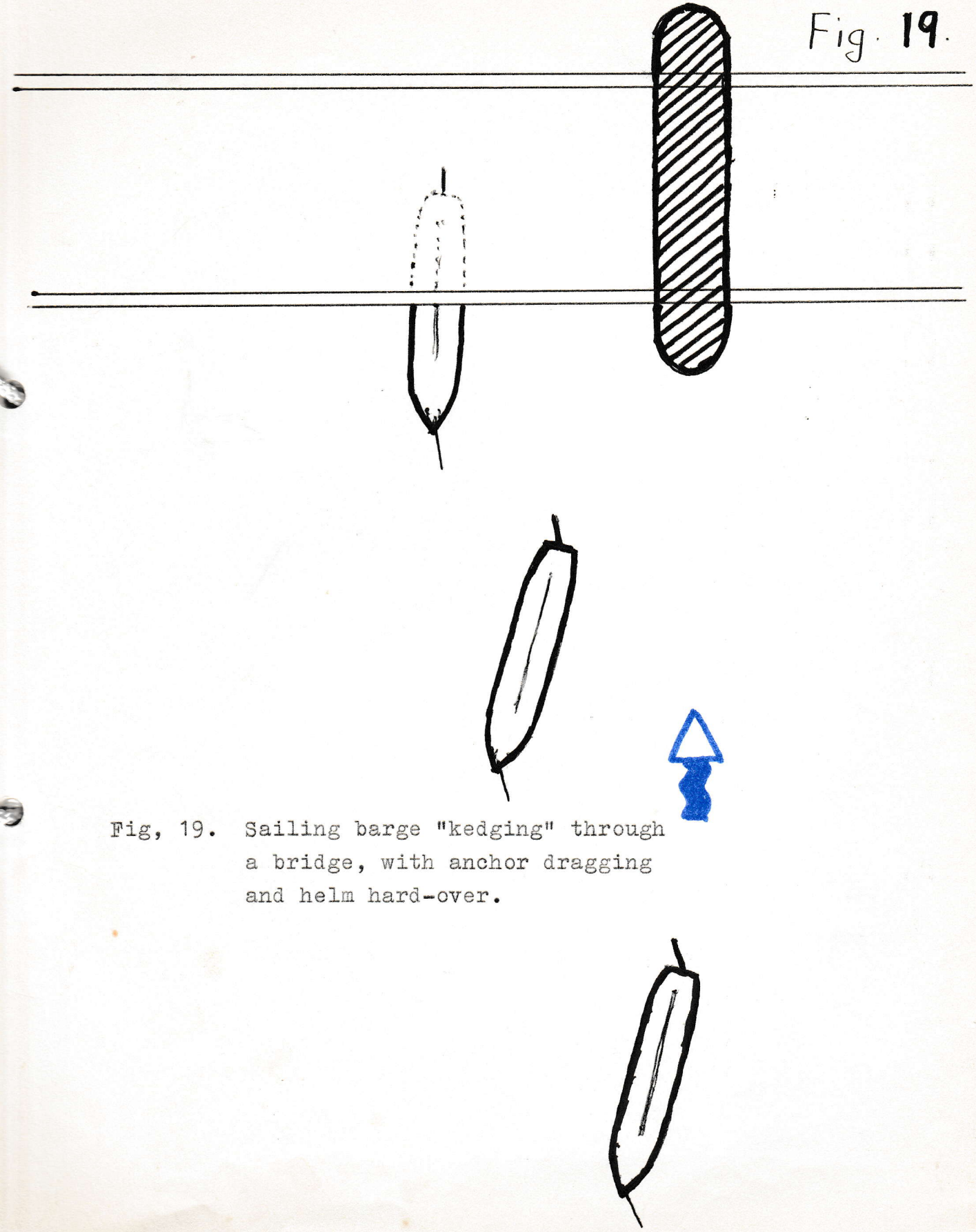


Fig. 19. Sailing barge "kedging" through a
bridge, with anchor dragging and
helm hard-over.

Fig. 19.



Fig, 19. Sailing barge "kedging" through a bridge, with anchor dragging and helm hard-over.

Fig. 20. Towing a barge with a watermans skiff:
the towline leads from the samson post
to the skiff's after thwart.

Fig. 20.

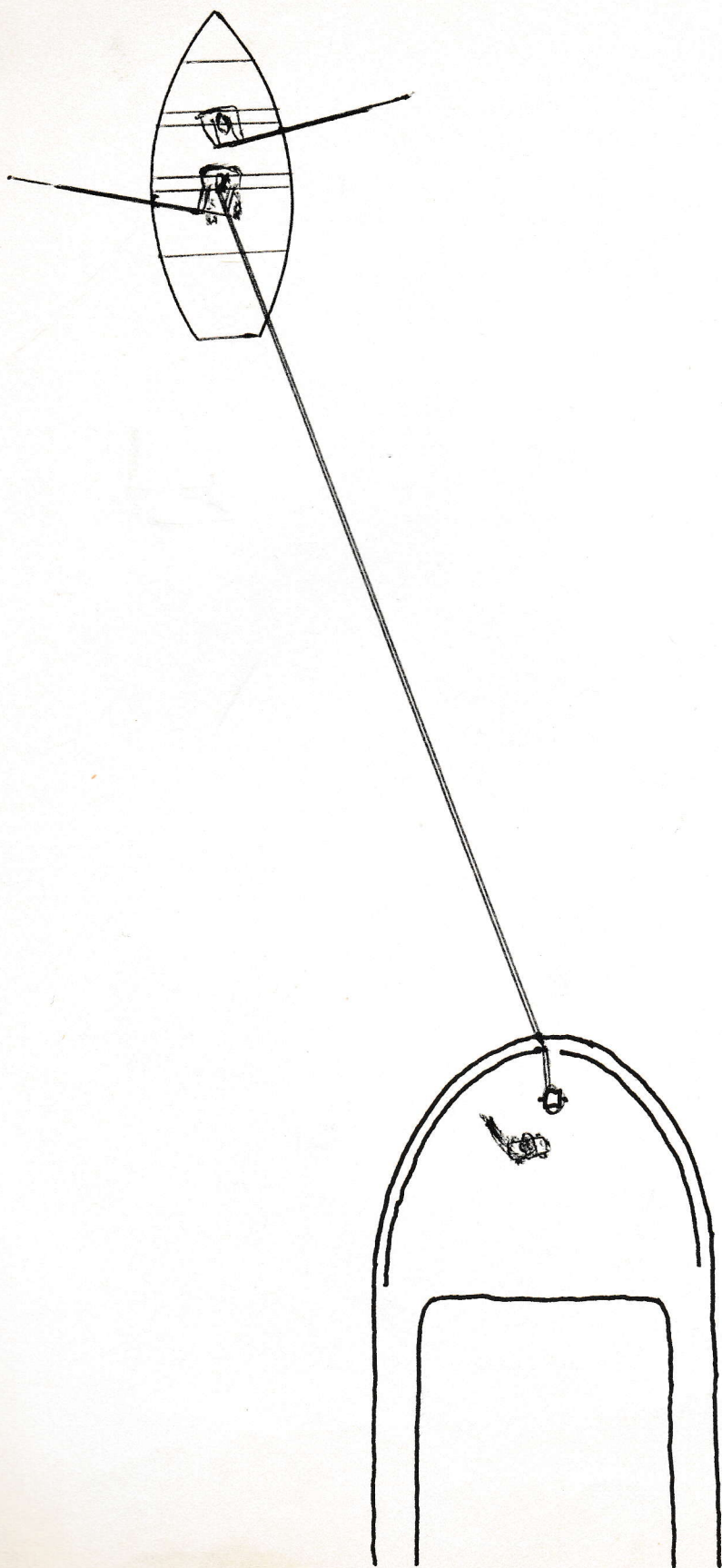


Fig. 21. The use of water eddies behind a
bridge abutment to assist "winding"
a barge.

Fig. 21.

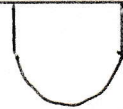
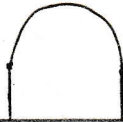
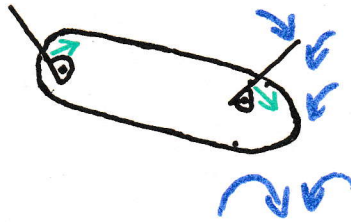
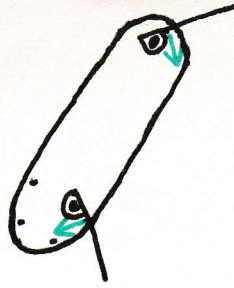


Fig. 22. Sheering ashore from outside a barge-roads: the sheering line is made fast on the offshore bow post and secured temporarily to a post at Position 1. At the proper time the line is shifted to Position 2 and then to Position 3 and is released at the proper time to allow the barge to fetch the destination.

Fig. 23. Sheering away from a berth when a down-tide obstruction threatens: A long line will allow a long sheer, and the faster flow offshore will ensure plenty of headway and will aid a turn down-tide.



Fig. 23.

