

NATIONAL SCHOOL
SAILING ASSOCIATION

**ORIENTEERING
AFLOAT**

**Curriculum
Development
Paper No 14**

D. R. Prestwich (H.M.I.)

ORIENTEERING AFLOAT OR "WHITHER THOU GOEST"

Waterborne activities, whether under sail, paddle or power present many challenges, not least of which is learning to combat elements with precision and skill. An immediate satisfaction is to compare these qualities with one's peers and, for the competent performer, racing round the buoys is a means for doing this.

Orienteering afloat adds another dimension by combining an element of competition with some of the basic demands of navigational expertise. It may be briefly described as sailing through a series of predetermined positions on open water in the shortest possible time. There will be a number of these positions through which the craft must be sailed and, if equal points are awarded for the precision with which this is done as well as for the time taken in doing so, the accent will lie as much on accuracy in steering and fixing position as it does on efficient helmsmanship.

The "modus operandi" is to have small teams of adjudicators at strategic points so that all the positions to be sailed through are under continuous observation. While it is useful for the adjudicators to have some conspicuous object in transit behind each position, their recording will be done by hand bearing compass as each boat signals that it has (in its own estimation)

reached the given position. The bearings of boats as they signal are taken and noted down by the adjudicators on their check cards (see figure 1) and the results of all the check

Fig 1 ADJUDICATOR'S CHECK.
CASTLE POINT.

CLASSIFICATION FLAG.		BOAT 1. Blue/Peter			BOAT 2. Blue/White			BOAT 3. Yellow/Blue		BOAT 4. Red/White			BOAT 5. Blue/Red/White		
FIX	BEARING	B	R	P	B	W	P	Y	B	R	W	P	B	R	W
		314	0	0	311	3	3	313	1	1	315	2	2	311	3
1.	314° M.														
2.															
3.															

Fig 2

START.		5 TH BOAT 1.		FINISH.	
1045				1246	
	FIX	PENALTY	POSSIBLE	POINTS.	
1.	CASTLE	0	20	20	
	JUBILEE	1	20	19	
2.	NORTHWOOD	17	20	3	
	CENTRE	6	20	14	
3.	CENTRE	1	20	19	
	FERRY	2	20	18	
4.	NORTHWOOD	1	20	19	
	FOLLY	3	20	17	
TIME 2 hrs 1m PLACE ... 4...				8	
TOTAL.				137.	

cards are tabulated to produce an "accuracy score" (see figures 2 and 3). The time of departure and arrival at the finishing point are noted by the starter and a time score arrived at in a similar way. The easiest way of tackling the scoring of accuracy is to set a maximum figure of say 20 points for the exact "fix" at each position and then to deduct a point for each degree of error in bearing observed from ashore for distance up to about a mile. At greater distances the penalty may be appropriately adjusted upwards.

In the same manner maximum points may be allocated to the crew home in the shortest time, with a relative depreciation in points to the other crews according to their speeds. (See figure 3).

It will be plain from the description that in planning an exercise there are a number of considerations to be borne in mind from the start and that a good deal of preparation is needed in advance. However, once the "blue print" has been drawn up, an infinite number of repeat programmes can be carried out since water obliterates all pathways.

The first problem is the choice of water; a fairly sheltered estuary of something under 2 or 2½ miles wide is probably the most suitable venue though large inland waters also offer good sites. Narrower rivers can be satisfactory, but with many craft at moorings and the chart cluttered with a mass of symbols, there may be confusion. Similarly, an area with heavy traffic

Fig 3

RECORDERS SHEET.

PART 1
(compiled from Adjudicator's check cards)

1.	2.	3.	4.	5.	6.	7.	8.	9.	
FIX	FROM	BOAT	CALCULATED	RECORDED	ERROR	PENALTY	POINTS POSSIBLE	POINTS ACTUAL.	
1.	CASTLE	1	304° M	304°	0°	0	20	20	
		2	'	307°	3°	3	'	17	
		3	'	303°	1°	1	'	19	
		4	'	306°	2°	2	'	18	
		5	'	307°	3°	3	'	17	
	JUBILEE	1	335° M	334°	1°	1	20	19	
		2	'	334°	1°	1	'	19	
		3	'	334°	1°	1	'	19	
		4	'	334°	1°	1	'	19	
		5	'	334°	1°	1	'	19	
2.	NORTHWOOD	1	077° M	060°	17°	17	20	3	
		2	Bus.	'	076°	1°	1	'	19
		3	'	075°	2°	2	'	18	
		4	'	077°	0°	0	'	20	
		5	'	077°	0°	0	'	20	
	CENTRE	PONTOON	1	172° M	174°	2°	6	20	14
			2	'	171°	1°	3	'	17
			3	'	175°	3°	9	'	11
			4	'	169°	3°	9	'	11
			5	'	174°	2°	6	'	14
3.	CENTRE	PONTOON	1	057° M	058°	1°	1	20	19
			2	'	057°	0°	0	'	20
			3	'	060°	3°	3	'	17
			4	'	055°	2°	2	'	18
			5	'	057°	0°	0	'	20
	FERRY		1	167° M	165°	2°	2	20	18
			2	'	165°	2°	2	'	18
			3	'	166°	1°	1	'	19
			4	'	166°	1°	1	'	19
			5	'	164°	3°	3	'	17
4.	NORTHWOOD	Bus.	1	139° M	138°	1°	1	20	19
			2	'	138°	1°	1	'	19
			3	'	136°	1°	1	'	19
			4	'	138°	1°	1	'	19
			5	'	138°	1°	1	'	19
	FOLLY.		1	259° M	262°	3°	3	20	17
			2	'	260°	1°	1	'	19
			3	'	256°	3°	3	'	17
			4	'	257°	2°	2	'	18
			5	'	258°	1°	1	'	19.

PART 2
(compiled from starters' time sheet)

	START		FINISH	TIME	FINISH POINTS	TOTAL POSSIBLE	TOTAL ACTUAL.
	1045	1	1246	2hrs 1m	8	180	137
	1100	2	1247	1hr 47m	16	"	164
	1115	3	1258	1hr 43m	20	"	169
	1130	4	1341	2hr 11m	4	"	146
	1145	5	1341½	1hr 56½m	12	"	157

BOAT PLACINGS:

- 1st .. No 2
- 2nd .. No 3
- 3rd .. No 5
- 4th .. No 4
- 5th .. No 1

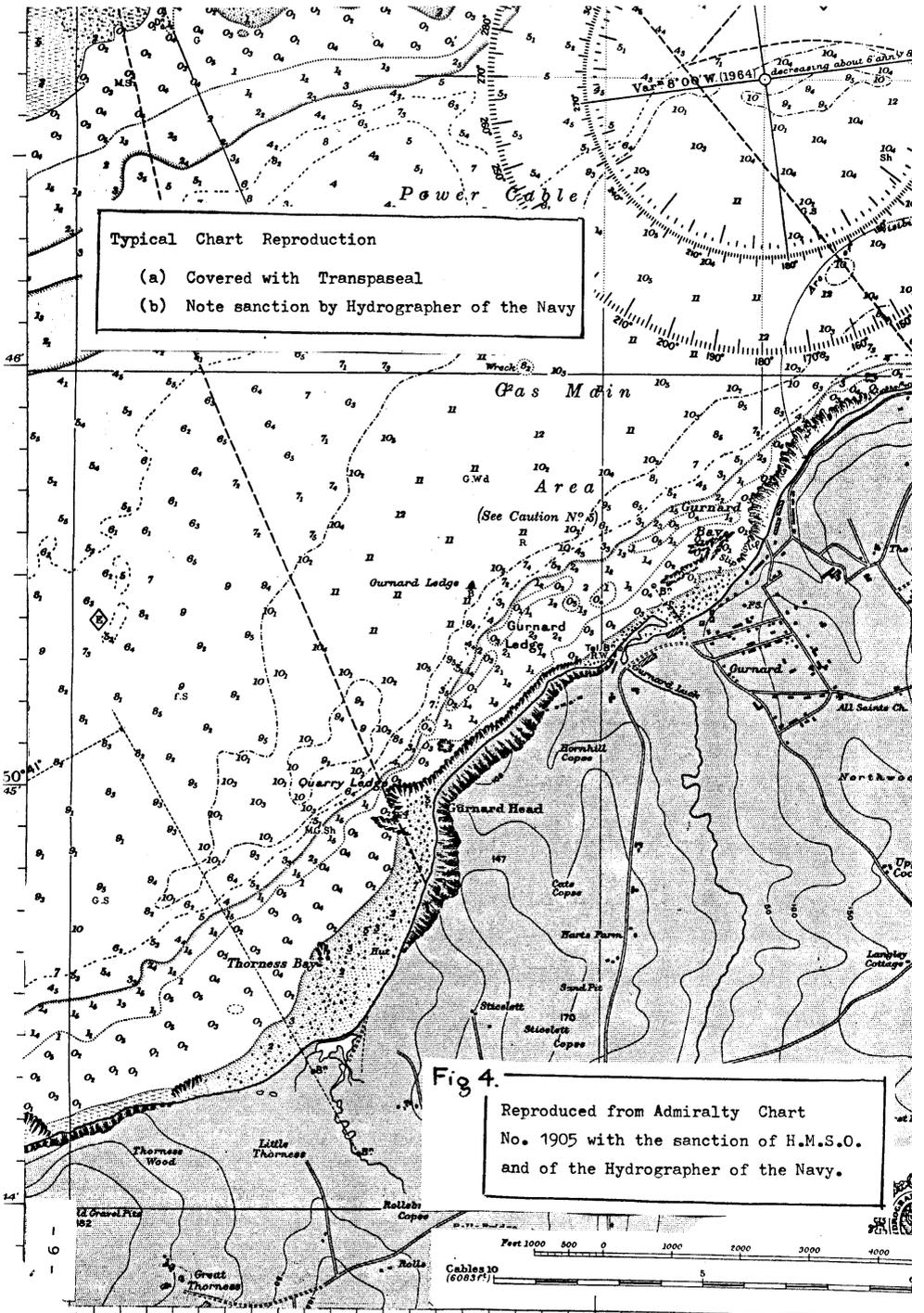
Fig. 3

may cause difficulty through obstruction of the observer's view.

When a sailing area has been chosen and the appropriate charts) selected, application should be made to the Captain to the Navy Creechborough House, Taunton, Somerset, for permission to reproduce the necessary parts of the chart . These reproduced sections may be backed on hardboard and covered with transparent adhesive plastic to protect them, after which, of course, all work must be done with a "chinagraph" pencil (figure 4)

In choosing observation points for the adjudicators it is as well to avoid low lying areas from which, at low water, competing craft may be hidden by exposed shoals. The Director will need to visit these personally to ensure that all the chosen positions for the competitors to pass through can be observed by at least 2 sets of adjudicators and that the bearings taken by them will cross at an angle of at least 60 degrees (90 degrees is the ideal but may not be attainable) . He will next need to take some bearings himself to ensure that there are no local influences to disturb the compass. The plan should be made with care, bearing in mind the courses that will have to be sailed to pass from one position to another . Under water obstructions, mud flats or shoal water should be given a wide berth unless well marked; the effect of tidal flow as well as rise and fall should be considered and courses should not be set which could lead into areas of heavy traffic or into shipping lanes. (See figure 5).

Once the area has been chosen, charts obtained and duplicated and the director has decided upon the adjudicators positions, the starting line and the several check points to be sailed through, he will need to call a "seminar" for all taking part. Having allocated coxswains and crews of 3 per boat, he will be able to hand over detailed management to them .



Typical Chart Reproduction

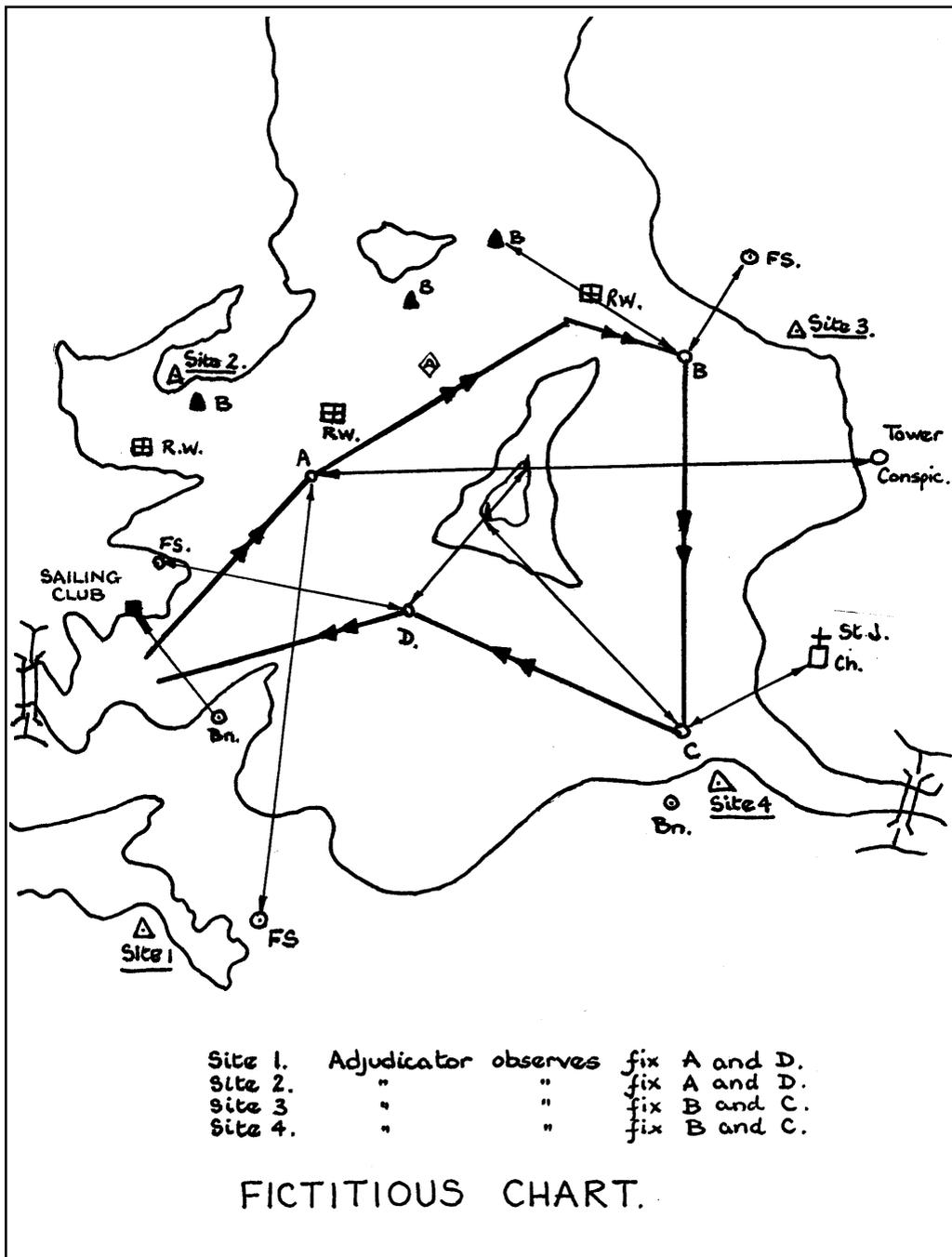
(a) Covered with Transpaseal

(b) Note sanction by Hydrographer of the Navy

Fig 4.

Reproduced from Admiralty Chart No. 1905 with the sanction of H.M.S.O. and of the Hydrographer of the Navy.

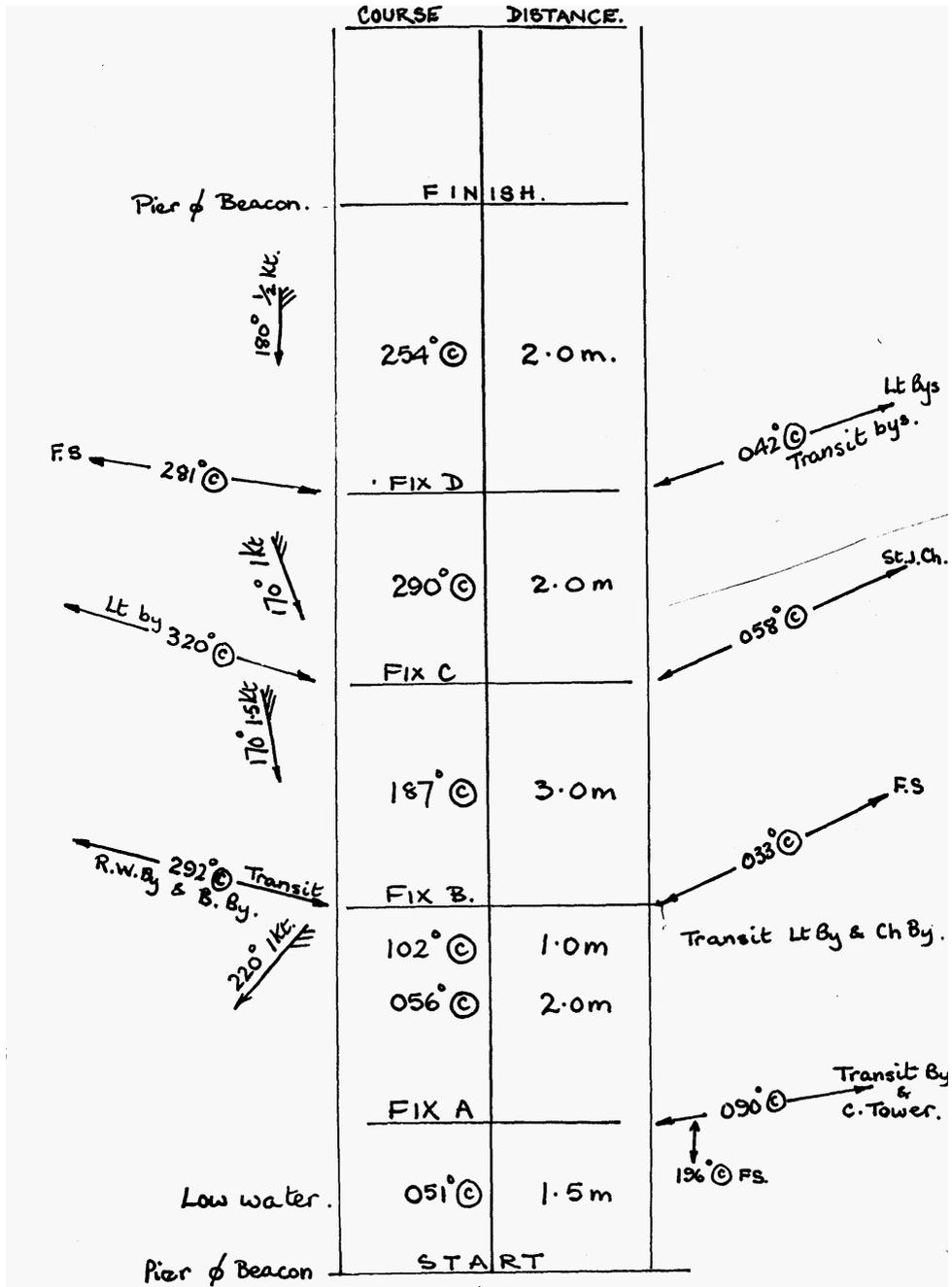
Fig 5



Apart from the helmsman, 2 crew members should be the navigators, prepared to check courses and bearings during the exercise . The last member being a general sailing hand to manage the fore-sheets , adjust the keel and so forth.

On completion of administration arrangements the several crews should copy the check points from the master chart onto their own reproduction copies and then, having selected suitable conspicuous objects ashore, they must prepare a list of bearings for each position. These will, of course, have to be corrected to magnetic bearings and if the boats have any steel about them , deviation tables will have to be made for each boat and the true bearings from off the chart further adjusted to reduce them to compass bearings. Alternatively, if sextants are available, plotting by the resection of horizontal angles could be resorted to (it is perhaps worth noting that the angles between 3 compass bearings can be plotted in the same way). Either of these techniques will provide each competing crew with a method of deciding when they are exactly in the positions they are required to pass through, but will not, of course, tell them how to get there. This will require some further chart work to lay off courses, correct them for variation and deviation and to allow for such set, drift and leeway as may be expected on the day and time for which the exercise is planned. In plotting their courses, it will be necessary to ensure that obstructions and shipping lanes are avoided and advantage taken of tides . While the director cannot provide for a suitable wind, he can at least ensure that the tide is in favour of the craft on the homeward leg and if he plans for a 2 hour exercise and estimates a speed of about 2 to 3 knots, the boats will probably be able to cover some 4 to 5 miles. It is as well to consult coastguards, harbour masters etc. , at this stage to ensure that any unusual shipping movements or fresh

Fig 6



hazards to shipping are known and recorded before commencement of the exercise.

The result of all this work should be noted down in a "Navigator's Notebook" which is ruled up rather like a surveyor's field book (as in item C and figure 6). This will be taken afloat and will serve as an aide memoire for the navigators. They should also have with them a notebook as a "deck log book" in which they will note down times, bearings and courses steered together with any other matters of interest such as, wind and tide observed (See figure 7).

Boats should be set off at 10 minute intervals (if they are running free) or at 5 minute intervals (if they are close hauled). Each cox'n will be responsible for arriving at the starting line in time for his own gun and will cross the line in exactly the same way as for any other race, except that there will be no jockeying for position. The boats will each then sail their courses and on arrival at the various positions will luff up and show their identification flag (usually a number pennant on a stick which can be waved to catch the adjudicator's eye). The adjudicators should then 'take bearings of the boats as they signal and note these down on their check cards themselves, then waving a flag to give "onward clearance". When the recordings of the last boat have been noted, the adjudicators return to base and hand in their results.

The best arrangements for safety boats are to have one at the head of the fleet and another somewhere near the tail. These 2 to bear in mind tidal effects and the possibility of a crew or crews losing wind and being forced by the stream. During warm weather power boats could carry liquid refreshment and at a prescribed signal close the thirsty crew. Also should there be conditions of light airs sandwiches might well be distributed to give a more substantial ration.

Fig 7

Wayfarer 1823 - No 1 Boat - Code flag 'P'

Skipper: J Talbot. Crew: Sue Butt, Mike Hillis, Adrian Underwood.

- 10.32 10 min signal - beating up river. & turning
 10.48.5 Start.
 Wind fresh - running
- 10.57 E. Cowes point light to starb'd.
 Tide setting E'ly. Made board in towards R.Y.S.
 Coming onto transit No 3 buoy & pile light.
- 11.11 Fix 1
 Beat back into river. Wind variable & light
 at time.
- 11.38 Kington quay to port.
- 11.43 Off Folly Inn, turned for run down to No 2
 fix position.
- 11.50 Fix 2.
- 11.53 Hailed by launch & reprimanded for not
holding flag for identification.
 Proceeding down river.
- 11.57 Kington quay to starb'd.
- 12.06 Off centre.
- 12.08 Fix 3.
 turned & beat back up river.
- 12.25 Off Folly Inn.
- 12.30 Run down for fix No 4.
 - Navigator not satisfied, put boat about
 for second run.
- 12.32 Fix 4.
 Run back down river - wind variable.
- 12.50 Finish.