

OFFSHORE

NUMBER 33

DECEMBER 1976 - JANUARY 1977

PRICE 50c*



Registered for Postage



THE C.Y.C. LIFE RAFT EXERCISE

On October 27th 1976 the C.Y.C. in co-operation with three life-raft Companies - Beaufort, Avon and R.F.D. - conducted a survival exercise seven miles off Coogee. In conditions that were 'just short of dangerous' - in other words, ideal conditions for the exercise - seven rafts were launched. Two overturned in the confused and choppy seas whipped up by 25 kt. sou'westerly winds.

Much publicity both in lay and yachting press has been given the event. On the following pages we present the Official C.Y.C. Report of the exercise, by Gordon Marshall, and the experiences of one of the 'guinea pigs', told by Jerry Humphrey. Much of what there is to say about it all is said somewhere in these pages.

After the exercise, there was discussion of life raft comfort and safety. Life rafts are built to be as inexpensive as possible (whilst meeting standards) in order to make them accessible to yachtsmen (and saleable by the Companies). Unless pressure is brought by yachtsmen on the standards-setting authorities - in this case the A.Y.F. - to raise standards, then what may be seen as deficiencies are likely to continue. This is a natural economic phenomenon, and raising life raft standards poses a vexing trade-off question. Any life raft is probably better than none at all.

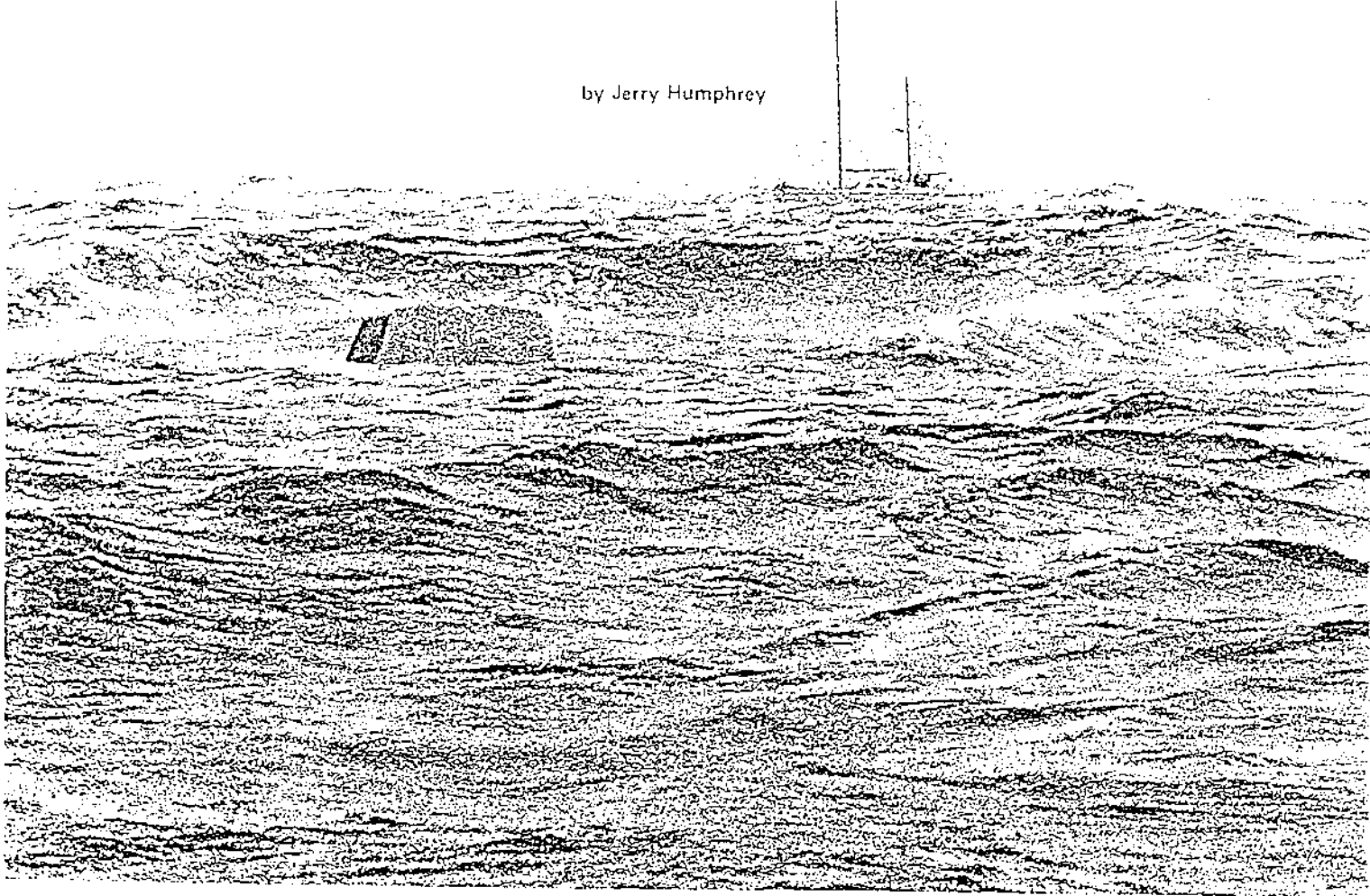
The publicity attendant the overturning of two rafts, both R.F.D. rafts, a fact which may well be statistically insignificant, has unfortunately attracted a lot of contorted lay press. This has upset the raft Companies (which suffer together). They donated much to the exercise and correctly point out that the rafts were not being operated according to instructions, i.e., no drogues, when they overturned. The adequacy of the pre-exercise briefing has drawn fire from both Companies and some participants.

The overturning was probably fortuitous. It has raised questions about the function of drogues - to provide stability? to arrest drift? to provide rather acute discomfort? - and a thorough going-over of this issue seems necessary if only so that clear understanding can be given all yachtsmen.

And the question of the sailing raft, not an unrelated matter, also comes under scrutiny - man and his individual right of destiny versus the complexities of modern society and search and rescue. Which one poses the greatest likelihood of survival in a life raft at sea?

ONE GUINEA PIG'S EXPERIENCE

by Jerry Humphrey



I was one of fifty-odd guinea pigs in the life-raft exercise. Eight of us stopped around for 7 hours in a Beaufort 10-man raft. When finally picked up by *Patrice*, we unanimously agreed that we had rocks in our heads for volunteering for this exercise in discomfort. Now, three weeks later, I've decided that it really was great experience and will volunteer for the next exercise.

Conditions for the exercise were ideal — wet, cold and miserable. Rough, irregular seas, whipped up by a 25 knot SE. wind, tested rafts and crew. The guinea pigs were well briefed and prepared — good wet weather gear, boots, caps, woollen underwear etc., and prophylactic seasickness tablets were by the cautious. We were psychologically prepared for an unpleasant eight hours, and we were ready to tough it out.

With eight people jammed into a 10-man raft, we stayed reasonably warm, although the outside temperature was about 12°. The flap over the windward opening of the canopy was kept closed most of the time, and only one or two of the breaking seas penetrated the raft. This water was easily mopped up with the sponges supplied. The closed canopy and the double bottom kept us relatively dry and

warm, and the exercise would almost have been enjoyable but for the incredible motion of the raft.

Following the manufacturer's advice, the drogue was used continuously. The drift of the raft was certainly checked, but the raft tended to snatch and yaw violently in a 120° arc about the sea anchor. This, combined with the unceasing flexing and heaving of the raft floor, induced nausea and vomiting in six of the eight crew. Most claimed that they had never been seasick before. The violent and completely unpredictable motion was best described as like riding a waterbed in a huge agitator washing machine. The raft rode the seas well and always felt safe. Two other rafts not using drogues capsized without warning. The crews on these rafts had discontinued use of the drogue because of the severe yawing and up to the time of unexpected capsizing felt that the rafts were handling the seas comfortably and safely.

On our raft, as the hours dragged by we became more and more lethargic. There was little conversation and certainly no card games or sing-songs. After seven hours, despite our detailed physical and psychological preparations, we were apathetic and very anxious to get off. It was then easy to

appreciate the importance placed by survival experts on the necessity for a positive mental attitude and a strong will to survive.

Squeezed together in the cold, bobbing raft, it was extremely easy to imagine that this was not an exercise but was the real thing, and you begin to wonder about the seaworthiness of your yacht, your liferaft and safety gear and of yourself. The most alarming and depressing thought was that we were drifting helplessly and were completely and utterly dependent on being sighted and picked up by others.

Thinking rationally, if we had foundered somewhere on a busy airline or shipping route, if a long 'Mayday' signal had been transmitted and received, if weather conditions permitted an intensive and prolonged air and sea search, if the castaways remained alert and optimistic and did not close the canopy flaps and sleep — assuming all this, one can easily imagine that the raft would be found in two or three days.

Then as *Patrice* tears past and quickly disappears from view, you realise that you could easily sink in some unspoiled corner of seas, far from commercial traffic, and you realise that this standard raft has no radio transmitter, no radar reflector, no strobe lights or beacons, that the only vitals are water and barley sugar, that flares are notoriously unreliable, and that in these five-foot seas the approximately four-foot-tall raft can only be seen from boats passing within 100 metres.

You also remember that the raft is designed to stay in the one spot and that unless your 'Mayday' is heard or some vessel stumbles upon the raft you are destined to starve to death in this unsinkable, unmanoeuvrable platform.

These unpleasant daydreams remind you that if you choose to go to sea then your safety and survival depend on your own efforts and planning. This planning for survival should be based on

- Ways to prolong survival time in the raft
- Ways to enable searchers to pinpoint your position
- Need for a sailing life raft
- To abandon ship only as a last resort

The equipment provided for ocean racing yachts is not as comprehensive as that on rafts used by the Navy or by airlines. The Beaufort representative pointed out that yachtsmen can only expect to get what they pay for. Additional survival gear could easily be stored in a panic kit attached to the raft. Suggested equipment is as follows:—

E.P.I.R.B. — Emergency Position Indicating Radio Beacon, or other transmitter, sending signals on the internationally monitored emergency channels.

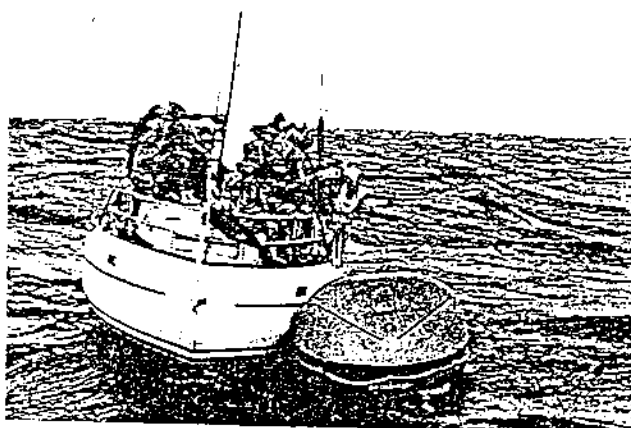
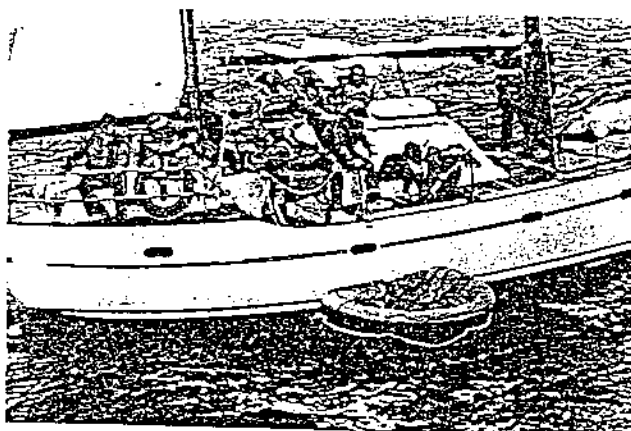
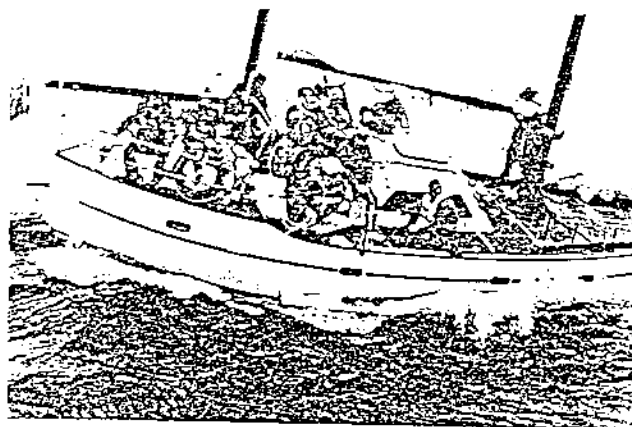
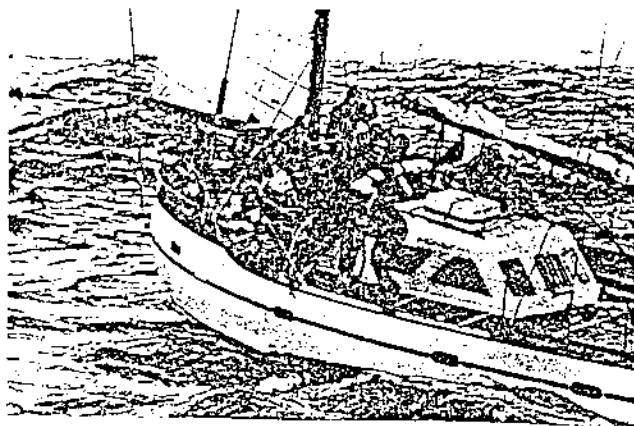
Radar reflector unit or tape.

Water, food, fishing lines, solar still, flares, strobe light, heliograph, charts, knives etc.

Beaufort demonstrated a four man sailing raft:— the mast and sails were easily rigged, the raft made three knots and could be sailed at about 60° off the wind. The crew were extremely pleased with her performance and this type of inflatable life raft offers many advantages to the cruising sailor.

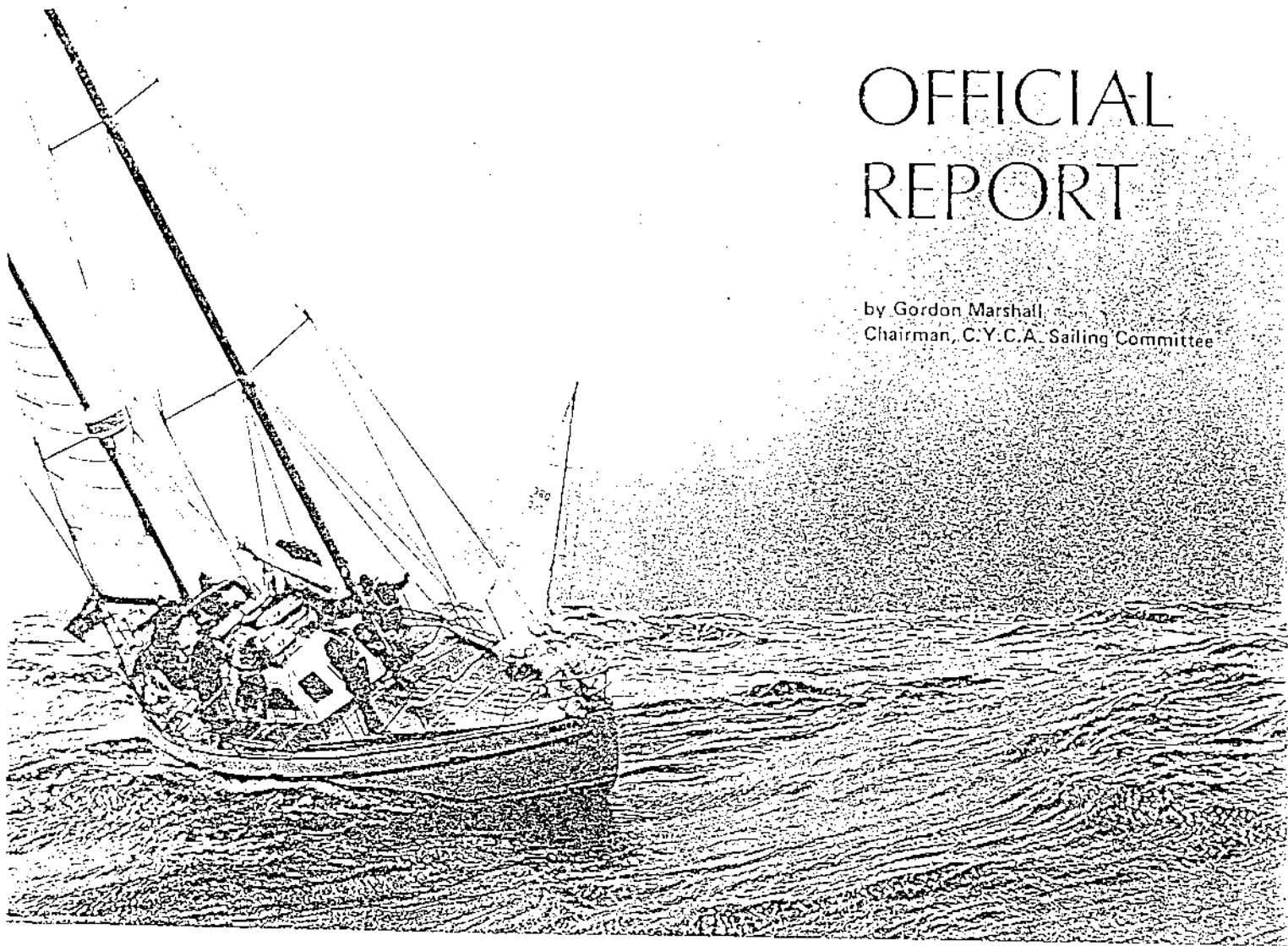
The exercise was a very valuable experience for all participants. I suggest that you enrol now for the next exercise — its an experience you shouldn't miss.

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OFFICIAL REPORT

by Gordon Marshall,
Chairman, C.Y.C.A. Sailing Committee



On Sunday 10th October 1976 the C.Y.C.A. held a liferaft exercise outside Sydney Heads, and the following report gives details of the operation.

At 0500 hrs on 10th October 1976, the officials and participants began to arrive for the briefing, planned to precede the exercise.

At 0515 the roll was called and, having determined those applicants absent, the final distribution of personnel in the rafts and their allocation to the embarkation vessels was decided as follows:

Escort Vessel	Raft	Occupants
<i>Onya of Gosford</i> (Skipper, P. Rysdyk)	Raft 1 (6-man R.F.D.)	6 males
	Raft 2 (4-man R.F.D.)	3 males, 1 female
<i>Patrice III</i> (Skipper, P. Green)	Raft 3 (10-man Beaufort)	9 males, 1 female
<i>Love & War</i> (Skipper, P. Kurts)	Raft 4 (4-man Avon)	4 males,
	Raft 6 (8-man R.F.D.)	7 males, 1 female
<i>Marabou</i> (Skipper, K. Storey)	Raft 7 (5-man Beaufort)	4 males

Raft Captains were nominated as follows:

Raft 1	Mick York, Engineer
Raft 2	Felix Huber, Medical Practitioner
Raft 3	Barry Russell, Marine Biologist
Raft 4	Michael Henderson, Medical Practitioner
Raft 6	Bruce Walpole, Geologist
Raft 7	Gordon Marshall, Engineer, CYCA Rear-Commodore

Note

Raft 5 (7-man Beaufort) was withdrawn from the exercise since 7 applicants failed to arrive by briefing time.

Total number of participants allocated to rafts at embarkation time: 36, including 3 females.

The briefing by Gordon Marshall, CYCA Rear-Commodore followed.

The purpose of the exercise was enumerated in detail with stress on the need for ocean-racing yachtsmen to gain experience in life raft drill.

All occupants were checked for lifejackets and, where necessary, these were issued.

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After a short question-time the group broke up and proceeded to their respective launch and recovery vessels, departing the C.Y.C. marina at 0615.5.

Marabou, the Committee vessel appointed for the exercise, led the group through Sydney Heads and steered a SE. course to a point approximately 7 miles due east of Coogee, where she stood by waiting for all vessels to gather.

At 0845 *PeterLyn* (Skipper, M. Dan) carrying photographers, representatives of the Press, and George Barton, C.Y.C.A. Sydney-Hobart Yacht Race Director, joined the group and made up the full complement of vessels engaged in the exercise. At this time the wind was SW. at 25 knots, and an 8' to 10' sea was running.

Whilst the conditions were rough, Gordon Marshall did not consider that they warranted aborting the exercise. Each Raft Captain was allowed to make his own decision whether launch or not, and each was told that he should feel free to exercise his choice without embarrassment. Gordon further advised that he had decided to launch raft 7.

One Raft Captain exercised his option to withdraw (Raft 2, on *Onya of Gosford*).

At 0900 Raft 1 was launched, followed in the next 30 minutes by Rafts 4, 6, 3, 7, in that order. The launches were all successful, all inflations were good, and all occupants boarded without incident. On the launch Raft 7, Keith Storey on *Marabou* took complete control of the operation.

Seasickness in the rafts and on the vessels standing by had now become prevalent, though the motion of the rafts seemed much less severe than the vessels.

Of the 5 rafts now in the water, walkie-talkie contact was established by *Marabou* with only three rafts, No. 1, 6 and 7. These three were instructed, during the first two hours, to go through flare and smoke drill.

By 1030 Raft 7, the 'sailing' raft, had overcome the initial difficulties in rigging its sail and had begun to move out of the general company of the other rafts on a course angling towards the coast.

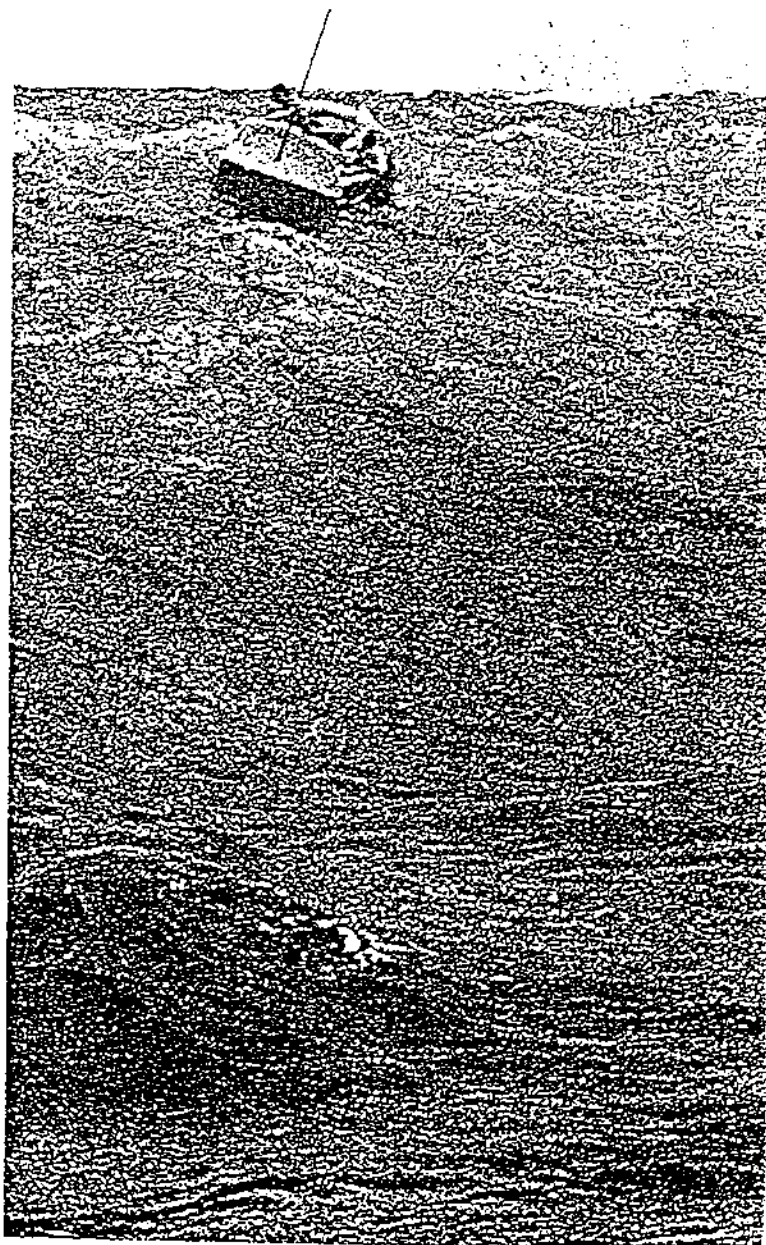
At about 1130, Raft No. 1, now with 5 occupants (one serious sea-sickness case having been recovered by the escort yacht) capsized. The occupants righted the raft and re-boarded.

At about 1200, Raft No. 6 capsized. It was righted and re-boarded.

Recovery of these two rafts by the escort yachts was then effected, and the exercise was continued with Rafts 3, 4, and 7.

At 1500 a decision was taken to terminate the exercise, probably predicated by the high proportion of sea sickness amongst all of those involved in the exercise, and Rafts 3 and 4 were recovered. Raft 7, now close inshore at Dee Why, was the final recovery at about 1600.

The escort vessels and *Marabou* made their way individually back to the C.Y.C.A. and a de-briefing was commenced at 1830.



The C.Y.C. life raft exercise

Debriefing

Each Raft Captain was individually asked to report on the activities of his raft.

Raft 1 (Mick York)

A 6 man R.F.D., launched with 6 occupants, 1 person was sufficiently seasick to warrant transfer back to recovery vessel. Mick observed that the conditions were good for a test exercise.

The raft capsized at approximately 1130 with 5 people on board. It was easy to right and easy to re-board. Some gear was lost, including 2-way radio.

At the time of capsize, crew were relatively comfortable, morale was good, there was no anticipation of imminent capsize, and the raft was in fair trim. The drogue had been tried but caused uncomfortable jerking and spinning of the raft. It had been shipped prior to the time of capsize.

General remarks:

- Canopy should have pockets for secure stowage.
- Barley sugar badly packaged
- No tin opener for canned water.
- Couldn't read instructions for heliograph.
- No inflation instructions on board.

Raft 3 (Barry Russell)

A 10-man Beaufort launched with 8 occupants of whom 6 became seasick, though all saw the exercise to completion.

Barry reported that the lack of stowage facilities was very evident, but otherwise his crew morale was good (considering the seasickness), and they felt quite confident of the security of the raft.

Raft 4 (Michael Henderson)

A 4-man Avon launched with 3 occupants, one of whom became seasick. Michael reported no instructions on board. Two can openers had punctured some of the packages. Better stowage was felt to be urgently required.

He reported that raft to relatively dry, though uncomfortable when using the drogue. His crew felt confident and secure.

Raft 6 (Bruce Walpole)

An 8-man R.F.D. launched with 4 occupants, two of whom became seasick, one being transferred back to the launch vessel.

They capsized at approximately 1200, but, at the time, the three occupants felt comfortable and secure.

He reported the puncture type can openers not suitable, in fact dangerous; there was no bailer on board and no instruction sheet. They found the drogue caused uncomfortable raft motion and they finally lost it when it carried away.

One flare did not operate; another tended to burn the hand of the operator. Though only 3 persons were on board at the time of capsize, they were evenly dispersed. The raft was easy to right after capsize, and easy to re-board. They lost equipment, including their two-way radio, whilst capsized.

Raft 7 (Gordon Marshall)

A 5-man Beaufort launched with 4 occupants.

This was a rectangular, round-ended raft equipped for sailing. After launch, an hour was spent attempting to sail the raft as rigged. It was finally decided that the keel/skeg arrangement precluded the raft's sailing in the direction intended, and the mast (now shortened 4' due to damage) was resteped near the centre of the raft instead of at one end and re-rigged accordingly.

The raft was then comfortably controllable and progress was obvious. It quickly sailed away from the area of launch and, notwithstanding the offshore component of the wind, (SW) they were able to prevent the raft from blowing out to sea.

At about 1100 hrs. the wind direction moved nearer to south and they were then able to close on the coast. At 1200 they were off the Heads with a course suggesting a landing on Dee Why beach. They were in continuous two-way contact with *Marabou* who, in turn, was accurately plotting the sailing track.

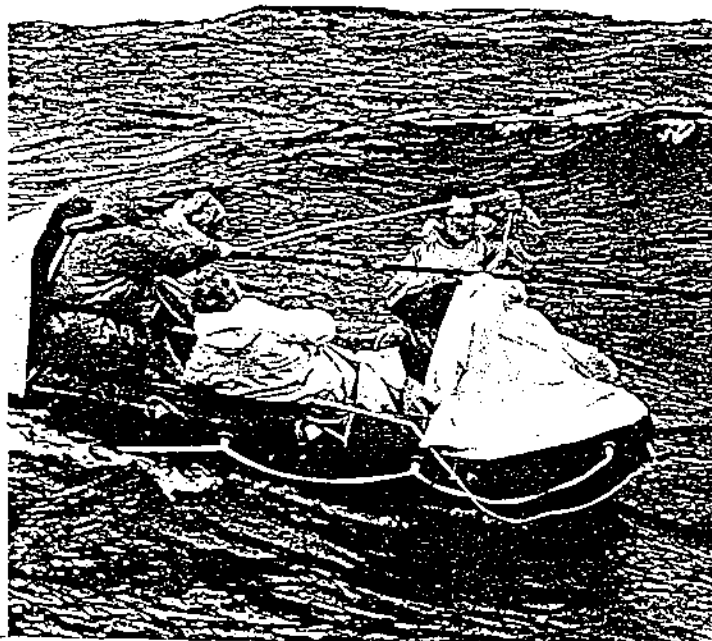
Celestial navigation was conducted using a plastic sextant on transferred sun sights, and an observed position was achieved within 10 miles of actual position. In the rough conditions this was considered satisfactory.

The raft was comparatively dry, and on only 3 occasions did it ship water. At all times the crew felt safe and secure.

At approximately 1530 when about one mile off Dee Why beach and obviously in a situation where a landing was possible, they jibed the craft and set a new course to clear the end of Long Reef, intending to re-jibe into its lee, then to paddle ashore. Before this was effected, *Marabou* reported all other rafts recovered and a decision was taken to terminate the voyage.

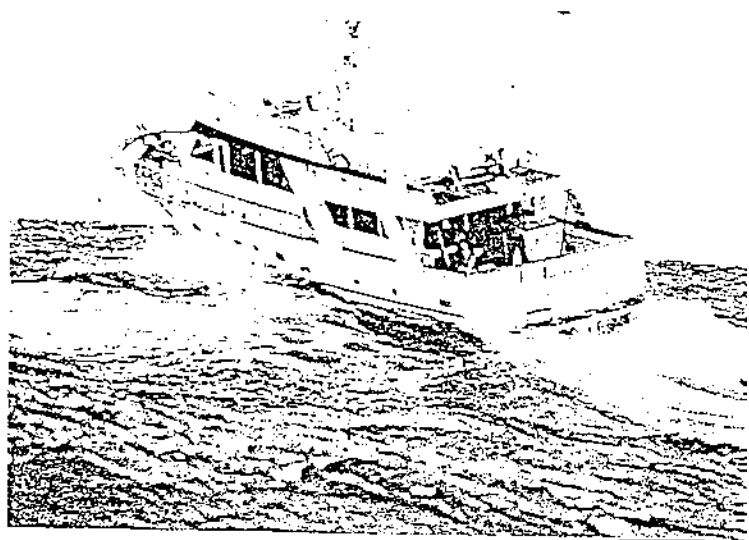
Subsequent examination of *Marabou's* plot of the track showed that the raft, without its skeg/keel was capable of a course down-one-knot current in winds that varied from 25 knots at the beginning of the exercise to 15 knots at the end.

The raft, without its skeg/keel, was capable of a course down-wind 30° each side of the wind direction. Thus a course choice of 60° downwind was available.



General observations

1. Visibility of rafts from surface vessels in rough conditions was extremely limited.
2. In future exercises, better communication could be achieved by using each escort vessel as the contact with the rafts and allowing the Committee vessel to exercise an overall control of the operation.
3. Relatively rough conditions are essential for an effective exercise, but, anticipating this to be the case, each escort vessel should be responsible for only one raft.
4. The communication problem due to the heavy weekend traffic on 2524 was very evident. Future exercises should use walkie-talkies.



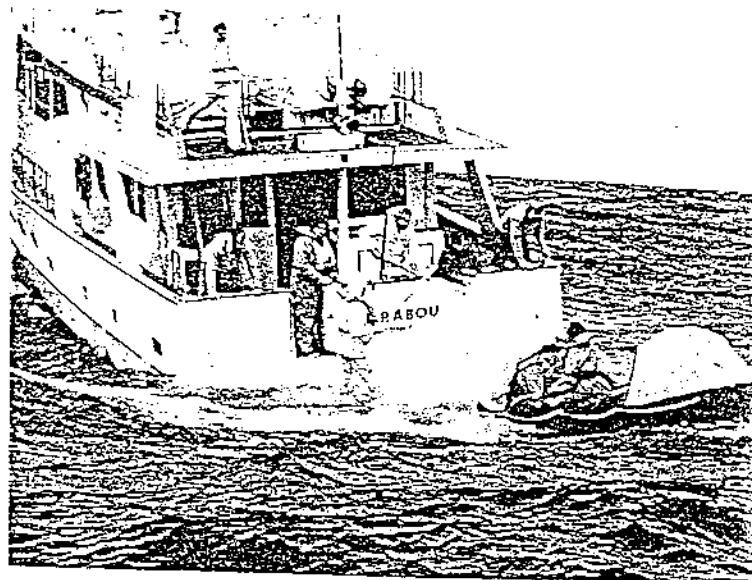
Marabou plows to the launch site

Conclusions

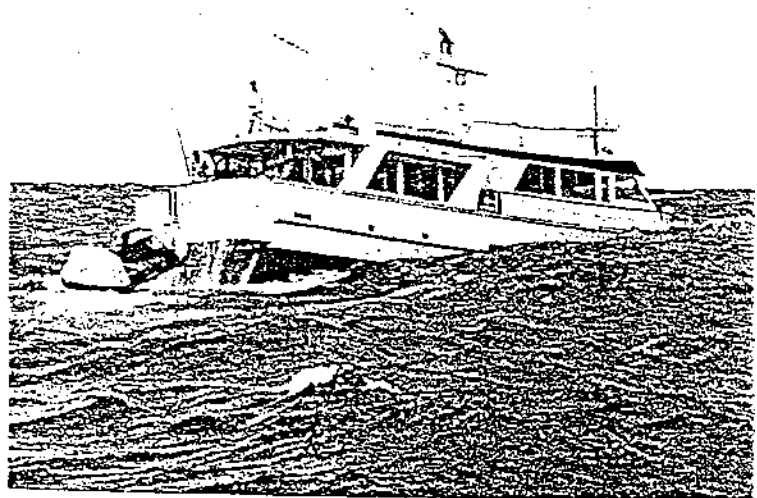
The Yachting Association of N.S.W. should be supplied with this report and any other available information from the exercise so that their Safety Committee may investigate and advise. Some of the aspects they should investigate are as follows:

1. Is the capsize of rafts in the conditions prevailing during the exercise inevitable? If not, what contributed to the capsize of two rafts out of five.
2. Does the use of drogues contribute significantly to the security of a raft in rough conditions? If so, this should be made clear to all yachtsmen since, up to now, their use has been understood to be limited to arresting drift.
3. If capsize is to be accepted as a likely possibility, what steps can be taken to prevent the loss of equipment from the raft?
4. Since it seems likely that rescue will be initiated by aircraft sightings, does the use of miniature emergency transmitters become desirable?
5. Should more experiments be conducted with variations of the sailing raft in order to determine the optimum sailing performance?
6. Is there any advice available regarding seamanship in a raft which may contribute to limiting capsizes, especially bearing in mind the lowering of the endurance and morale of occupants who may be continually emptied into the sea?

Finally, the C.Y.C.A. wishes to freely offer its services towards any investigations or experiments the Yachting Association's Committee may desire, in the hope that a better understanding of the factors involved in safer rafting emerges.



The landing platform of a motor vessel can be wet...



... and a hazard to a life raft at sea.