

REV 1999

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SYDNEY HOBART RACE.

Technical meeting concerning installation and usage of
communications equipment aboard Young Endeavour
YE office 22.10.99

Present. Michael J Brown [reporting]
Ted McNale

Lt Commander Andrew Rourke
Lt. Nathan Jacobsen

PART; Margaret Powell Executive Director

1. Aerial Location[s].

- a. Require confirmation concerning the use of two HF sets.
- b. Is it to ensure there is a back up incase one set misfunctions?
- c. Due to new antenna locations on the YE there is only room for one HF whip aerial on the flag staff.[see plan attached]
- d. Skipper of YE advised that it was extremely difficult to install an additional whip aerial.
- e. Emergency HF aerial wire can be installed on main mast as a back up.
- f. If second CCYA HF set is a backup then a very quick change over can be done if there is a problem with the initial set.

MJB TO CHECK WITH PT AND ADVISE TM AND YOUNG ENDEAVOUR.

Require urgent confirmation re quote for HF sets provided by TM.
Time is short to organise effective set leasing.
MJB TO CHECK WITH PT

- g. AO advised that RRT could use the second onboard VHF aerial.
- h. TM to organise switch over for top of mast aerial to cover both sets.
- i. Emergency HF wire aerial can be hooked into the tuner for maximum effectiveness.

TM TO ORGANISE AND DEMONSTRATE.

2 POWER SOURCE.

A. Two separate power sources required min 20amps for communications equipment.

TM TO ORGANISE WITH YE STAFF

B. Converters, 24v to 12v for equipment, back up to be considered.

TM WITH YE STAFF

3. LIASON SHIPS ENGINEER.

On all installation detail the ships engineer will liase with TM to fully understand the process as a back up at sea should problems arise.

MJB will also go through the installation with TM.

TM AND YE TO LIASE.

TM WITH MJB.

Ships engineer to locate radio table and writing/angled board top.

4. TELSTRA EQUIPMENT.

Require confirmation concerning Mini Sat and CDMA phone, installation dates and usage.

NOTE. Is the mini sat for general communication with the fleet or race HQ ? Will TELSTRA leave onboard for NZ visit by YE?.

MJB TO CHECK WITH PT.

5. TESTING ON WATER.

YE is currently in dock under going an extensive refit. On completion of all installations AO will advise likely dates for on water testing.

AO TO ADVISE MJB AND TM LIKELY DATES.

6. ARRIVAL HOBART.

- a. Dismantling of equipment and radio table by TM contacts in Hobart 1.1.00
- b. AB to organise with TM telephone # etc.
- c. All paper work and logs to be handed over by AB to PT on arrival at dockside. Sealed and marked accordingly.

AB TO ORGANISE AND ADVISE PT PRIOR TO ARRIVAL ON 31/12

7. ADMINISTRATION.

- a. Presume skeds as per previous years using HF 4603.6 dedicated frequency.
- b. Skeds twice daily with PM safety sked.
- c. Presume skeds still to be sent via SAT COM Charlie as a confirmation.
- d. Process for green cape reporting by skippers to be established and advise format from YE to race HQ. Is MINI SAT to be used.?
- e. Laptop with software compatible with YE satcom required.

MJB TO CHECK ABOVE WITH PT.

8. WEATHER.

- a. PT to advise MJB weather format details and timing for PM and am skeds also PM safety sked.
- b. NOTE> weather required by SAT COM Charlie approx 30 to 40 minutes prior to skeds.

PT TO ADVISE MJB.

9. PLOTTING.

MJB has ordered two large charts to cover the race course for dry mounting on board and laminating.

10. RADIO LOGS.

.MJB producing the following;

- a. Master radio log sheets including relay column
- b. Retirement log sheets
- c. Green Cape log sheets.
- d. Tape recorder log
- e. Finish log sheets.

MJB AND AB TO PREPARE COPIES IN MARKED FOLDERS FOR RRT.

11. TAPE RECORDER.

PT requested MJB to organise.

12. BUNKS.

AO advised MJB location of RRT in aft section OK. AB in two bunk section. LC in four bunk section. MJB to be advised Hector two bunk or aft.

MJB TO CHECK WITH XO OF YE PRIOR TO DEPARTURE.

Note. PT to advise if there is a person from TELSTRA coming on board.?
YE not aware, also space restricted.

13. BRIEFINGS.

PT to advise RRT and YE concerning briefings, dates and times.
Also copy of sailing and radio instructions etc in advance for study etc.
MJB to advise PT re shirt sizes for RRT and YE naval crew.
NOTE: three briefing bags for RRT two for YE with battle flag.

MJB TO LIASE WITH PT.

14. COMMUNICATIONS # LIST.

RRT require three complete lists of all names and contact numbers as per previous years format, including coastal stations and other services involved.

PT TO PROVIDE TO RRT AND COPY FOR YE.

NOTE;

MJB = Michael J Brown mob# 0408 44 6794.

AB = Audrey Brown

LC = Lew Carter.

PT = Phil Thompson.

TM =- Ted McNale

AO = Commander Andrew Rourke.

NJ = Lt Nathan Jacobsen.

AUSTRALIAN YACHTING FEDERATION INC.

SUBMISSIONS TO ORC ARISING FROM RECOMMENDATIONS CONTAINED IN THE CYCA REPORT INTO THE 1998 SYDNEY - HOBART YACHT RACE

Reference should be made to pages 151 - 163 (attached) of the report of the CYCA committee that details specific recommendations following their extensive inquiry into the 1998 Sydney - Hobart Yacht Race.

This series of recommendations (AYF 1 - AYF 4) arise from the CYCA report headed:
Recommendation B3 - YACHT SAFETY EQUIPMENT on pages 156 - 159

AYF 1

Special Regulation 5.02 - Safety Harnesses

Proposal

Suggest that the following matters be considered:

- a) introduction of a "replace date" of 7 years from date of manufacture.
- b) stowage in a watertight container.
- c) operation of harness clips.
- d) additional harness tethers.

Rationale

- a) The inquiry revealed that one harness strop failed when stitching on the webbing tether failed. Manufacturers confirmed that sunlight and poor care reduced the life of the webbing and stitching on harnesses.
- b) Five crew from yachts that were inverted reported difficulty in undoing harness clips.
- c) Length of harness lanyard created problems for some wearers in that users reported being "washed" to the full length of the lanyard by waves. Some crew members overcame this by "shortening" the lanyard by wrapping it around a winch, others used more than one strop and one reported a lanyard with a clip at each end and one in the middle!

AYF 2

Special Regulation 4.1.9 - Liferafts

Proposal

Suggest the following matters be considered:

- a) stowage of life rafts below decks.
- b) construction of life rafts particularly:
 - Highly visible colour on all parts of raft
 - Diameter of drogues
 - Diameter of painters, drogue tethers and other lines
 - Equipment bag being secured
 - An easy means of opening the equipment bag be provided
 - An easy means of securing the canopy flaps be provided
 - Repair kit for when surfaces are wet.

Rationale

- a) Crews found difficulty in retrieving liferafts from below decks in the prevailing conditions: it is doubtful that rafts stowed adjacent to the companionway below decks could be deployed in the 15 seconds required by the regulation, in those conditions.
- b) While the canopy on all rafts was distinctive, the colour of the inflated tubes and raft floor is generally black and difficult to see in severe sea conditions.
- c) The diameter of the cordage installed for the painter, lifelines and drogues was too small, caused injury and was difficult to handle.
- d) The drogues on 2 rafts failed shortly after deployment and the raft equipment or its contents were lost on 2 rafts following inversion.
- e) When the occupiers of one raft sought to carry out repairs they noted the first instruction on the repair card instructions was "ensure surfaces to be repaired and clean and dry."

AYF 3

Special Regulation 4.21 - Lifebuoys

Proposal

That "Jon Boy" brand dan buoys be excluded until manufacturer establishes that the stowage features have been modified such that accidental deployment from wave action is prevented.

Rationale

Sixteen Johnbuoy brand inflatable dan buoys were washed overboard by wave action. It is estimated that this figure represents more than one third of all Johnbuoys in the fleet.

It should be noted that seven horseshoe lifebuoys and attachments were also lost overboard due to wave action.

AYF 4

Special Regulation 4.24 - Storm and Heavy Weather Sails

Proposal

The maximum size of storm jib and trisail be reviewed.

Rationale

Eighty six percent of yachts deployed various storm sails - all used a storm jib and 48per cent used a trysail. Forty two percent of yachts reported that the storm sails (storm jib in particular) may have been too big. In those conditions, however, it is difficult to determine with any certainty if the storm sails were in fact too big and further investigation is required. Several reported various problems using their standard sheets with mechanical clips on storm sails.

This recommendation (AYF 5) arises from the CYCA report headed:

Recommendation B6 - YACHT CONSTRUCTION on page 160

AYF 5

Proposal

The design and construction requirements for decks, hatches and windows be investigated with a view to increasing the existing standards.

Rationale

The report indicates that structural damage to yachts other than those rolled through 360 degrees was relatively minor with only three yachts retiring with "hull/structural damage" as the main factor in the decision to retire.

Five yachts were rolled through 360 degrees after being hit by extreme waves sustained considerable damage to their decks as a result of surface wave action and each was also dismantled.

Thirty per cent of yachts reported being knocked down to 90 degrees and 17 percent beyond 90 degrees at least once.

RECOMMENDATIONS

The CYCA has a clear responsibility to implement or ensure the implementation of the recommendations herewith. As the first order of business, the Club must develop a mechanism to ensure that recommendations are implemented prior to the 1999 SHYR or are planned to be when technically feasible. In addition, the CYCA should institute an audit process to ensure implementation is timely and efficient. The CYCA should make its findings and recommendations available to the local and international boating community in the interest of promoting safer sailing and boating generally.

The recommendations have been developed in two sections:

- **Section A** details actions that can be taken to have yachts appraised of conditions and assess their ability to meet them.
- **Section B** details actions that can be taken to better prepare yachts and crews to deal with extreme conditions.

The recommendations have been drafted by the Committee on the basis of the evidence presented in this report and are classified as either “compulsory” or “recommended”.

SECTION A

A1. WEATHER

Compulsory

- The CYCA needs to develop a weather strategy, which includes working with its nominated race forecaster to:
 - generate (close to) real-time forecasting,
 - educate yachtsmen on the forecasting/interpretation,
 - provide easily understood/layman forecasts, and
 - develop forecasting assets in Eastern Bass Strait, including accessing information from the Bass Strait oil rigs.

- The CYCA must provide yachts with a practical interpretation of the weather forecast. This should include:
 - indication of maximum wind speeds and wave heights expected,
 - duration of bad weather/storms,
 - indication of the movement/direction/pattern the centre of the storm will most likely take, and
 - inclusion in the Race Management team of a full-time adviser from its nominated forecaster.

- In winds of 40 knots (true) or more, yachts will be required to report wind strength, direction and wave height at Radio Skeds if asked to do so by RRV. Yachts should be encouraged to report wind strengths in excess of 40 knots (true) at any time and should not be penalised under RRS Rule 41 for doing so. The RRV should relay weather reports received at the next Sked.

Recommended

- Barometer as a part of yacht's equipment
- The Sailing Instructions should include an Addendum detailing all stations and times weather forecasts are available for the race area.

A2. GATE/EQUIPMENT CHECK

Compulsory

Skippers must be encouraged to consider their particular circumstances and whether their yacht, equipment and crew are in a satisfactory condition to enter and cross Bass Strait and complete the race.

To achieve this, the Sailing Instructions should prescribe a line of latitude at 37°15'S (Green Cape). As yachts cross this line, it will be compulsory for skippers to make a declaration to the Race Committee through the RRV or RCC confirming:

- HF radio is in working order,
- life raft(s) are on board,
- yacht and crew are in a satisfactory condition to continue, and
- engine and batteries are operational.

Failure to report or meet any of the stipulated requirements should result in a yacht's disqualification.

SECTION B

B1. ELIGIBILITY

Compulsory

Stability:

- Conform with IMS stability recommendations for Cat 1 Races of 115° for all classes, IMS, CHS and PHS, with no further “grandfathering” of previously accepted yachts.
- CHS and PHS yachts must demonstrate compliance to stability by any of the following means:
 - IOR Certificate (may be lapsed),
 - IMS Certificate (may be lapsed),
 - letter or other certification from the designer,
 - documentation from any other national or international authority used for this purpose, or
 - different yachts from the same mould or class or type will be accepted on the basis of one yacht of that mould, class or type meeting one of these requirements.
- Owners/Owners’ Representatives of CHS and PHS yachts must sign a declaration to the effect that no changes have been made to the yacht’s rig, sailing configuration, hull and/or appendages that affect stability as declared by the documented methods.

Compulsory

Crew experience:

- The number of “experienced” crew should be increased to 50% of total crew as per RRS, AYF Addendum A, AYF Special Regulation Item 2.4.
- As the number of “experienced” crew is an eligibility requirement and crew is subject to change between entry and the actual race, a mechanism must be developed to ensure that the integrity of crew experience is maintained with crew changes.

- Each Application for Entry must be reviewed by a Sub-Committee of the CYCA Sailing Committee and be approved.
- An age limit of 18 years should be set and no crew under that age will be eligible for the SHYR.

Recommended

- Cabbage Tree Island Race (180 nautical miles) in November should be made a compulsory pre-requisite (or equivalent local race for interstate yachts). 50% of the SHYR crew must be on board for this event.
- For yachts unable to compete in such a race, the Race Committee should have the discretion to review a yacht's preparation and allow it to race, if in the opinion of the Race Committee the yacht and crew are adequately prepared.
- New yachts must complete a minimum non-stop passage or race of not less than 200 nautical miles, to be eligible for the SHYR.
- The process for determining stability of non-IMS measured yachts should be reviewed by the Sailing Committee.

B2. CREW EXPERIENCE - EDUCATION & TRAINING

Compulsory

CYCA should conduct Training Seminars prior to the SHYR with components on:

- weather forecasting & interpretation,
- life raft deployment, use and survival techniques,
- SAR techniques, including flight search patterns, communication, rescue techniques,
- MOB strategies,
- heavy weather sailing techniques/strategies, and
- flare deployment.

Certificates of attendance should be issued to all participants and all yachts must have at least 30% of crew with certificates to meet eligibility requirements.

- The CYCA should provide a Safety Booklet based on the education & training mentioned above and append it to the Sailing Instructions.
- The CYCA should comply with the RRS AYF Addendum A, AYF Special Regulation Item 2.4 (Crew Experience), where it is recommended that the Skipper or Sailing Master have a recognised AYF certificate (or equivalent) appropriate to the race category.

Recommended

- All crew members should attend the Training Seminars.
- The Safety Booklet should be made available to all competitors.
- A “Flare Day” (for training on flare deployment, a one hour period on the last day of the winter series for example) should be arranged where crews can practice using flares on Sydney Harbour. (Note: Consideration needs to be given to the risks of such an exercise).

B3. YACHT SAFETY EQUIPMENT

Compulsory

Safety Harnesses:

- Introduction of a “replace by” date of 7 years from date of manufacture.
- Stowage in a watertight container. This location should be inspected as part of the Annual Safety Inspection and SHYR spot checks.
- The ease of operating harness clips and the appropriateness of existing clips needs to be investigated further in the light of experiences in the 1998 SHYR
- Each yacht shall carry additional harness tethers for 1/3 of the declared crew number for use in heavy weather. The additional tethers should be used for dual clipping of crew members or to facilitate safe movement.

Compulsory

Life rafts:

- The AYF should be requested to review the requirements for the stowage of life rafts. A review should be conducted into the appropriateness of stowage below deck, the maximum weight of “soft packs” and methods of securing below deck. Standards should be developed for deck stowage.
- The AYF should be requested to review the relevant AYF prescription on the construction of life rafts with the recommendations:
 - the colour of life rafts should be of a highly visible colour on all parts where this will assist detection,
 - the diameter of drogues employed in life rafts should be increased,
 - the diameter of painters, lifelines and drogue tethers should be increased in size, but not in breaking strain,
 - the life raft equipment bag should be secured in a manner such that it cannot easily be undone from the life raft,
 - the opening on the equipment bag should be secured by Velcro or a self-closing device, and
 - a more accessible means for securing canopy flaps (combination of Velcro/eyelets and ties) should be investigated.

Compulsory

Other safety equipment:

- A review of the size of storm jibs and trysails should be undertaken, and referred to the International Technical Committee of the ORC.
- Sheets should be sewn/spliced on and permanently attached on storm jibs and trysails.
- Webbing jacklines must be as specified in the RRS (Rule 4.3a) and should not be left on deck between races. Spectra should be considered as an alternative.
- One waterproof hand held VHF, in addition to ship’s VHF.
- Kapok filled PFD 1s should not be accepted for future SHYR.

- 'Jon Buoy' brand 'Danbuoys' should be excluded from the SHYR until the manufacturer can satisfy the CYCA that its stowage features can be modified to preclude accidental deployment from wave action.
- The yacht's primary EPIRB should be a 406 MHz, GPS type preferred, in place of 121.5/243 MHz EPIRBs.
- One EPIRB per life raft carried which may be 121.5/243 MHz, and which may be packed into the life raft or carried on board.
- The CYCA should request that the AYF develop a protocol for the use of EPIRBs in consultation with AMSA.
- Four white parachute flares, in addition to current flare requirements.
- At least one of the ship's batteries should be the gel or closed cell battery type for the purpose of starting the engine or operating radios after being inverted.

Recommended

- One waterproof Grab Bag for each yacht containing handheld waterproof VHF, waterproof torch, "V Sheet", signalling mirror, knife, EPIRB and flares. This equipment is part of and not additional to the yacht's equipment. It is recommended that the Grab Bag be prepared in winds over 40 knots.
- One waterproof Grab Bag for each life raft, containing handheld waterproof VHF, one 121.5/243 MHz type EPIRB, additional flares, strobe light/s, cyalume sticks, dye marker, waterproof torch, harness tethers, duct tape.
- Fifty percent of a yacht's crew competing in the SHYR, to have carried out a 'Survival at Sea', 'Marine Survival Course', or similar course, which includes abandoning ship, life raft survival skills and a SAR recovery section.
- Ship's batteries - gel or other closed cell type
- Towing bridles - purpose made
- Drogues or sea anchors or para anchors as alternative to improvised methods
- Identification number should be placed on the foredeck of each yacht for identification by SAR aircraft.

- A request for an Australian Standard should be made with respect to life raft construction for racing and cruising yachts. An ISO standard is currently being developed.

B4. PERSONAL SAFETY EQUIPMENT

Compulsory

- Personal strobes or high intensity lights
- Personal dye markers

These items may be supplied by the crew. The owner or owner's representative must sign a declaration that each crew member has a personal strobe and personal dye marker and that it will be on board at the start of the race. The CYCA must carry out random "spot checks" for this equipment on the morning of the start of the race.

- The CYCA should brief the manufacturers of PFD 1s to develop an Australian Standard certified PFD 1 that enables crew to move and work freely. The device should take into account the need to wear harnesses.

Recommended

- Buoyancy vests should be part of personal kit and should be worn at all times.
- Personal EPIRBs
- Inflatable PFD 1s with integrated harness
- Personal flare packs (the Committee notes that sale of these devices is illegal in some states)
- Extensive use of retro-reflective tape on crew's personal clothing.

B5. YACHT SAFETY INSPECTIONS

Compulsory

- Yachts should deploy storm jib and trysail for recognition & reporting at the race start

Recommended

- CYCA should assume responsibility for the conduct of all Cat 1 inspections for yachts competing in the SHYR, and
- CYCA should set and enforce deadlines for safety inspections.

B6. YACHT CONSTRUCTION

Compulsory

- The design and construction requirements for decks, hatches and windows should be referred to the International Technical Committee of the ORC for review.

B7. COMMUNICATIONS

Compulsory

- The Race Committee must enforce Sailing Instructions provisions that retiring yachts provide position, destination, ETA and details of the condition of the yacht/crew.
- Yacht names should be limited to two words maximum for the purpose of radio communications.
- 24hour listening watches on VHF channel 16.
- RCC-Fleet:

RCC suffers from basic HF/VHF connectivity problems with the fleet. It needs to have an installation at its disposal, that offers very high quality transmit and receive capability.

The installation needs to be accessible to the primary RCC centre (currently located in Hobart) and, most importantly accessible to the Race Director. The antenna farm needs to be located in an interference free area (outside a metropolitan or built up area). The transceivers need to be high power (400-1000Watt) with RF gain amplifiers capable of detecting weak signals.

- **Satellite phone on the RRV:**

It is vital that high quality, reliable communications be available between RCC and the RRV. There is only one technology available to address the intermittent and low quality communications currently in place. This is a satellite based telephone system that supports voice, fax and data transmissions.

The CYCA should acquire either a MiniSat or MobileSat service which should be installed on the RRV for the duration of the race. Further, this terminal should be connected to a Notebook PC for sending and receiving both fax and data traffic as well as voice traffic.

- The Sailing Instructions should include information that indicates that the communications may be taken over by RCC and that an alternate channel/frequency may be used for distress and SAR traffic.

Recommended

- Satellite phones on yachts
- RRV-Fleet:

The RRV installation needs to be above normal power to ensure that the entire fleet, regardless of the quality of their own installations, is capable of hearing the RRV in all weather conditions.

The CYCA should install at least two HF transceivers on the RRV. Each of these radios should be fitted with linear amplifiers capable of increasing the transmitted output power to 400Watt PEP.

The CYCA should install a HF receiver with a received signal amplifier system (RF gain), separate to the HF transceivers. Alternatively, a separate RF gain amplifier should be fitted to one of the HF transceivers on the RRV for the purpose of receiving weaker signals.

The CYCA should install a linear amplifier for its VHF transceiver, capable of increasing the transmitted output power to 100Watt PEP.

The RRV should have at least two radio operator crews available to independently manage regular and distress traffic.

- Real Time Tracking:

The CYCA should investigate the potential for the inclusion of full-time, real-time tracking devices to be installed on board all yachts.

Full-time, real-time tracking of the fleet will give Race Organisers and SAR authorities accurate positions for all yachts for the duration of the event. This knowledge enables SAR to deploy appropriate assets faster and more accurately. An additional benefit would be to provide better information for media coverage.

Major considerations in using this type of facility are coverage, cost of individual terminals, cost of the service, amount of power required (on board), installation issues (antennae & connections) and operator issues.

B8. ADMINISTRATION & PROCEDURES

Compulsory

Race Management needs to develop formal, documented protocols and systems that facilitate efficient and effective control of all race/yacht documents. This system needs to operate in perpetuity regardless of the nature of/changes to management structure or personalities.

- The CYCA should provide a SHYR Race Management Manual that covers every facet of race administration from the issuing of the NOR to the Post-Race Review.
- The CYCA/RYCT must develop a Crisis Management Plan to be in place before the 1999 SHYR. A draft structure appears in Appendix 20.
- The Race Management Manual and the Crisis Management Plan must incorporate strategies for Eden, Hobart, Sydney, management of inquiries from NOK, press and public, and auditing.
- Efficient administration will be influenced by the adherence to deadlines set for the lodgement of the various certifications by yachts with race

management. An ineligible yacht must not be able to start the race because of an administrative oversight. As a result, deadlines for the lodgement must be enforced.

- Authority and responsibility of the Race Committee must be clearly defined, documented and understood by each member of the Committee. In the event of a crisis, the Race Committee's responsibilities must be confined to managing the race and assisting SAR authorities. Ancillary matters, such as dealing with media or NOK should be handled by other means.
- The CYCA/Ryct must develop a robust system for responding to inquiries from relatives and friends of crews and other interested parties with accurate up-to-date information.
- A computer disk containing yacht details (including a colour photograph of each yacht) must be provided to AMSA to assist with SAR and should also be made available to other authorities.