Communications for the America’s Cup Challenge

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Abstract

Two historic papers from a special issue of the Journal in 1986 featuring the communication requirements for the America’s Cup 1986/87 challenge in Fremantle.

Introduction

In 1986, the Society produced a special issue of the Telecommunication Journal of Australia (Volume 36, Number 2) featuring ten papers on the communication needs for the America’a Cup challenge scheduled for 1986/87. Two of these papers have been selected for this historic review.

In 1983, Australia II from the Royal Perth Yacht Club in Fremantle, Western Australia, was successful in winning the America’s Cup from the New York Yacht Club, ending over 130 years of possession and 24 previously unsuccessful challenges. The race history is well known, with Australia II coming from 1/3 down to win 4/3, and the world yachting spotlight focussed on Fremantle for the Cup’s defence in 1986/87.

The first paper (Hume, 1986 [5]) provides a summary of the America’s Cup history and an overview of the infrastructure and telecommunication requirements in Western Australia. Logistically, seven syndicates challenged for the cup in the US in 1983. Initially, twenty-six syndicates indicated they were serious about challenging in 1986/87, which later was reduced to thirteen by the time of the elimination races. The paper details the necessary upgrades to dock facilities at Fremantle, and provides an explanation of the 12 metre boat dimension rule and the race program for this first Australian defence.

The second paper (Herring, 1986 [6]) discusses the infrastructure establishment, service provision, television operations and navigational equipment. The number of additional visitors to Perth was estimated at well over one million people, of which twelve percent would be overseas visitors. This influx forced major capital works to be undertaken and helped the introduction of new technology, such as debit-card public phones. All spare telecommunications capacity in the surrounding area was also brought on-line for the event.

The other papers in this special issue of the Journal on the communications for the America’s Cup 1986/87 challenge are highly recommended for further reading and cover the following topics;

- Video and Sound Programme Network for America’s Cup;
Cabling for the Cup à A District Prospective;
Americaâs Cup Impact on Perth Interstate and International Telephony Traffic;
12 Metre Yacht Telemetry System;
Frequency Management for the Americaâs Cup;
Americaâs Cup Media Complex;
The Official Americaâs Cup Directory.

Dennis Conner skippered the Stars and Stripes 87 yacht to a 4/0 victory over Kookaburra III at Fremantle in early 1987. The Cup subsequently returned to San Diego Yacht Club in America. This was the last time twelve metre yachts were raced for the Americaâs Cup, as the rules were changed to allow for different boat designs such as multi-hull catamarans.

References


The Historic Papers
telecommunications facilities would have to be augmented considerably.

COMPARATIVE SITUATION AT FREMANTLE

Fremantle is 16 km from Perth at the mouth of the Swan River and is the major port for Western Australia. It is also an historic site, being the point where the first European settlers landed here in 1829. The aim was to develop America’s Cup facilities in a compact location to allow people to walk between the various facilities.

It became apparent that the Fishing Boat Harbour would be able to provide some facilities for the visiting syndicates. In fact, two syndicates, Bond’s Australia II and the New York Yacht Club, established themselves in this harbour at the end of 1983. Not all of the visitors could be accommodated in this area, so an additional marina called Challenger Harbour was constructed. Fig 2 shows a panoramic view of the harbours during preparations for the elimination series.

The most suitable existing building for the media complex proved to be a hall owned by the Fremantle Port Authority (Fig 3). This is located about 400 m from the new Challenger Harbour towards the main Fremantle Harbour. Fig 3 shows the layout of the area and the location of the significant points together with berthing arrangements for the syndicates. The theatre in the Fremantle Port Authority building was also designated as the media interview room.

The media centre is not as compact as Newport. This is to be expected as the Fremantle challenge will be a much larger event involving many more syndicates. There are several advantages at the Fremantle location as compared to Newport:

- the site is free of main streets and traffic will not be a problem;
- there is a railway station near the area to provide access for large numbers of people without the necessity of providing parking spaces;
- the access from the marina to the America’s Cup course area is very direct for the competing yachts;
- the main deep water port in Fremantle for overseas ships is within walking distance;
- the area is more open and will allow larger groups to be accommodated.

Telecom Australia is in a much better situation to provide facilities for this event as it provides all types of communication facilities and is able to plan the complete facilities for telephones, telex, facsimiles, data, TV bearers, radio programme lines, mobile telephones and radio paging. The early selection of the basic plan enabled Telecom to move into the construction phase of the new facilities.

ASSESSMENT OF TELECOMMUNICATION REQUIREMENTS

Because of the long lead times to purchase telecommunication equipment, early advice of the requirements was needed. This proved impossible to obtain as those involved had not reached that stage of their planning. From discussions it appeared that the syndicates and the media complex would be the main focus for telecommunication efforts. The author’s overseas visit included other locations which were related because they were all sporting events which aroused worldwide interest. The experiences of overseas organisations had then to be translated into what would be required in the Fremantle situation.

All the early planning work by Telecom was done by the Engineering Department as an extension of normal network development activities. The increased activity at Fremantle will require additional telephone services, causing greater traffic loads on connecting junctions. An additional 1000 lines of subscribers' capacity was provided, together with augmented cable to the marina area and the media complex. Junction relief was a more complex problem requiring the earlier installation of an optic fibre cable, containing 10 fibres, from Perth to Fremantle. This cable is now providing circuits between the Wellington and Fremantle exchanges on a 140 Mbit/s bearer. Additional switches have been provided at coastal

FIG. 2. View from Fremantle Port Authority Office of the harbours for the America’s Cup.
The design and provision of facilities in the media complex was a special project and Reference 1 in this issue gives a description of this work.

The additional traffic load is expected to have a heavy interstate and international bias. We have planned to augment these routes by installing the 1987 normal circuit requirements by October 1986.

To meet the need for television coverage, six video links from Fremantle to Perth were planned using spare optic fibres. This figure was based on one link for each Australian network, with two for itinerant overseas.

programmes. Ref 2 shows how this early estimate has been augmented to meet later requirements.

Radio broadcast circuits were planned to be provided over 2 Mbit/s links from Fremantle to Perth. Again, the early requirements have had to be augmented as in Ref 2. This increased circuit loading has considerably exceeded the capacity of the Television and Radio Operating Centre which has consequently been re-arranged.

To coincide with the Cup, the Commonwealth Government brought forward the completion date of the new Perth International Airport building to October 1986. This required another optic fibre solution as the new building is remote from any telephone exchange. Ref 3 gives more details.

Other increases have been made to the Mobile Telephone Service (500 customers), public telephones (coin and card), paging and telephony links to cruise ships which are expected to visit during the Cup period.

When the first syndicate arrived there was a necessity to set up a full-time Commercial Manager position to establish and maintain contact with all parties involved in the challenge. The occupant is Mr C. Harrington, who has ensured that all Telecom groups coordinate their efforts to meet the needs as they arise (Ref 4).

NUMBER OF SYNDICATES

As mentioned earlier there were initially 20 challenge syndicates. Our advice was that these would probably reduce to about 16. This has occurred and the withdrawing of four have brought the number down to 14 challenging syndicates. The Challenge of Record is the Costa Smeralda Yacht Club of Sardinia and they will be organizing the elimination series to determine the best yacht to be the challenger. The large number of races required will need two or three race courses to be used simultaneously. These elimination series will provide plenty of match sailing experience for the challengers.

A similar story was experienced with the number of defenders which started off about 10 and has now been reduced to four. The Royal Perth Yacht Club will be conducting an elimination series to pick the best Australian boat to be defender. This series will be conducted at the same time as the challenger series. Whichever Australian boat is selected as the defender will be representing the Royal Perth Yacht Club and will seek to retain the Cup for that Club.

CONCLUSION

The 26th America’s Cup Challenge is by far the largest in its 126 year history. It has grown to be a very prestigious event and the large entry will attract visitors from all around the world. The media coverage must be of a very high standard to satisfy the interests of people in many countries.

This article outlines Telecom Australia’s preparations for communications for the America’s Cup series. The advanced planning work has allowed ample infrastructure to meet the communications needs. The other papers in this edition of the Journal give more details of the facilities provided.

REFERENCES


The 12 Metre Yacht

WHAT IS A 12-METRE?

It is a yacht which complies in every respect with the requirements regarding construction and equipment contained in the Deed of Gift and the Interpreting Resolutions applying to national origin of design and construction.

Blige shall be kept as reasonably dry as possible while racing. No device shall be fitted or employed which would permit the lifting of the mast thwartship.

This class of racing sailboat is based on a mathematical formula which takes account of hull length, skin and chain griff, sail area and freeboard. When formula values are summed and divided by a mathematical constant the resulting rating (12 metres or 38.37 feet) should result.

RUME — America’s Cup History & Telecommunications Needs.
FIRST AUSTRALIAN DEFENCE
THE AMERICA'S CUP 1986-87
WESTERN AUSTRALIA

RACE PROGRAMME

13 CHALLENGERS - 6 COUNTRIES

LOUIS VUITTON CUP

ROUND ROBINS
ROUND ROBIN 1 OCT 5-20
ROUND ROBIN 2 NOV 2-19
ROUND ROBIN 3 DEC 2-19
Each yacht will meet the others once.

LOUIS VUITTON CUP SEMI-FINALS
DEC 28 - JAN 7, 87
The four top-scoring yachts
will enter the semifinals.
The first yacht to win four races.

LOUIS VUITTON CUP FINALS
JAN 13-23, 87
The winner of the Louis Vuitton Cup is
the one who wins four races. He is
selected to fight against the best
defender in the final match.

4 DEFENDERS - AUSTRALIA

DEFENDER'S CUP

SERIES
SERIES A OCT 18-29
SERIES B NOV 10-23
SERIES C DEC 06-21
Each yacht will meet the others twice.

SERIES D
JAN 10-16, 87

DEFENDER'S CUP FINALS
JAN 13-25, 87
The two top-scoring yachts enter the
finals. The winner defends the
America's Cup against the Louis Vuitton
Cup's winner.

AMERICA'S CUP

CHALLENGER vs DEFENDER
JAN 31 - FEB 15, 1987
The first yacht to win four races.
In addition to requiring personal accommodation, many businesses are seeking locations to display and market their respective products and services and to promote them through media liaison. Since early 1985 there has been a constant demand for Telecom to provide communications advice and service to these groups.

The large numbers of business and professional conventions being held during the Cup period have added to Telecom's workload. Two concurrent events that will highlight Western Australia's economic importance will be the Perth America's Cup International (PACI) Exposition to be held in Fremantle in November 1985 and PacRim '86, an international symposium of finance, trade and investment interests centered on the Pacific Rim region to be held in Perth November 17 to 19. Each of these events demands international communications of world standard.

Additionally, the America's Cup Festival of Sport, September 19 to February 20, which includes a world boxing contest at the new $280M Bunbury Island Casino, a $1,000,000 horse race and other entrepreneurial activities have required forward planning to ensure provision of adequate communications facilities.

The mini-America's Cup, usually conducted at Cowes on the Isle of Wight during the Admirals Cup, and sailed in isolated down 5-metre replicas of 12-metre yachts will, in 1987, be sailed off Bathers Beach, Fremantle between January 27 to 29. The Beach will be an ideal amphitheatre for the mini-Cup because it has vantage spots along the South Harbour and Challenger Harbour. It will also be popular for spectators wishing to view the departure and return of the 12-metre boats on both race and lay days. Anchorage and moorings between Rockingham, 20 nautical miles south of the America's Cup course and Hillarys marina at Ocean Reef, just north of the race area will 'park' an armada of spectator vessels ranging from 10-metre sportfishing launches to 70 metre floating palaces, all visiting to see the competition. For the larger vessels private charter companies are providing visualising, fueling, sewage disposal and commuter transport services with computers being used to co-ordinate the many needs.

Overhead a 59 metre helium-filled airship will be employed as a television camera platform and for airborne advertising. Other airspace will cater for up to 40 helicopters hovering over the courses with fixed wing aircraft operating above.

THE BOTTOM LINE

It will cost the Royal Perth Yacht Club (through its trust company ADAC — Australia’s Defiance America’s Cup 1987 Pty Ltd) some $4M to stage the first Australian defence of the Cup.

The majority of this money will be provided by major sponsors and companies who have signed agreements to use sponsors’ and licencee’s symbols, along with the sale of television and radio broadcast rights and “Official Supporters Hospitality Packages.”

The Federal Government gave a direct grant of $30M and the capital cost of the WA State Government for preparations is expected to be about $54M.

Much of the Government expenditure, however, can be classified as payment for improvements in the social infrastructure of the region with a useful life well beyond...
the Cup period. Only a little can be identified as America’s Cup specific.

Similarly, Telecom Australia with an overall Cup budget of some $8.3M has constructed World class communications servicing which will provide long term benefits to the community.

By the standards of other ‘headline events’ the level of public sector commitment to stage the Cup Defence is relatively modest. Compared to Olympic and Commonwealth Games and to Expositions, which require very significant commitment of Government resources for an infrastructure which is arguably not well utilized after the event, the cost of $7M to construct the major Cup venue (Challenger Harbour) is minimal.

The previously mentioned ‘America’s Cup — Economic Impact’ study report says the defence could inject at least $900M into the Western Australian economy and up to $1.177 billion. The spending could create some 14,400 jobs over 12 months, half of these resulting from visitor spending.

Finally, even if the America’s Cup is not retained, the 1987 Series will have a substantial positive impact on the economy through promotional and trade opportunities flowing from the staging of the event.

References
1. ‘America’s Cup — Economic Impact’ report to Western Australian Government Centre for Applied and Business Research, the University of Western Australia.

Information Transfer News

Navigation Accuracy for the America’s Cup

The Royal Perth Yacht Club are taking no risks with the placing of the navigational marks for the America’s Cup races. They have appointed a Perth firm, Satellite Pty. Ltd., as official suppliers of navigational equipment, and all mark laying will be done with the aid of a Sylves navigational system.

The difference between Sylves and other navigation systems is that the others tend to work on a range to range mode, whereas Sylves works on a hyperbolic mode as well. To put that into simpler terms, with a normal range to range navigation system, the unit on the boat sends out a signal to a series of fixed beacons and times how long they take to come back, then by simple triangulation works out the position. The Sylves has what is called a passive receiver on the vessel that just receives signals from other beacons and that is done by a synchronised set of signals that come from a master beacon. By calculating the time difference in a hyperbolic fashion, the unit can work out precisely where it is in relation to those beacons either on a grid or geographically. Because Sylves uses a passive receiver, it has unlimited user capability, whereas most others can only handle about four users at once.

Sylves, a French made system, is used all over the world. There are chains of beacons in the Middle East, all around the coast of Britain and in Australia. Since putting up the chain off Fremantle for the America’s Cup, it has been found that other people besides the yachtsmen have a use for it. The Marine and Harbours Department have a definite need for very precise positioning, if for example they are called out in the middle of the night to rescue someone, it is very comforting for them to know exactly where they are to within a metre or so.

The navigators on the yachts will not only be able to tell exactly where they are, in latitude and longitude, there will be a graphic display on the screen that will give the yacht’s position relative to the next mark, the distance up to thirty marks and the yacht’s speed. The system has been built and tested over the past months, both by the Royal Perth Yacht Club and the yachts that are here training. The system was also used in the World Championships in February, 1986.