

The Newsletter of the Sydney Amateur Sailing Club



SYDNEY AMATEUR SAILING CLUB

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COMING EVENTS

SATURDAY 20 AUGUST 2016

Last point score race in the RSYS/SASC/RANSA Combined Winter Series

SATURDAY 20 & 27 AUGUST 2016

Safety Audits and Fire Extinguisher Service

WEDNESDAY 24 & THURSDAY 25 AUGUST 2016

Compulsory Skippers Briefings

SATURDAY 3 SEPTEMBER 2016

Lion Island Race

SATURDAY 10 SEPTEMBER 2016

Opening Day and first point score race for Super 30s, Classic Divisions, Cruiser Racer Fleet and Cavalier 28 Division

SUNDAY 25 SEPTEMBER 2016

First point score race for Sunday Classic Division and Non-spinnaker Division

SATURDAY 1 OCTOBER 2016

Idle Hour Race

FRIDAY 7 OCTOBER 2016

First Friday Twilight Race

SATURDAY 8 OCTOBER 2016

Point score race for Super 30s, Classic Divisions, Cruiser Racer Fleet and Cavalier 28 Division, Cruiser Racer Lady Helm Race (handicap start) and Muriel Trophy (Couta Boats)

SATURDAY 15 OCTOBER 2016

Point score race for Classic Divisions and Mixed Fleet Division

SAFETY REQUIREMENTS 2016–2017 SEASON

SAFETY AUDITS AND FIRE EXTINGUISHER SERVICE AT THE CLUB

Saturday 20 August 2016

Saturday 27 August 2016

Ring the Club for a booking

NEED THE TENDER?

Call Mike, Allan or Mitch on 0418 678 690

Sat: 0900-1800 Sun: 0900-1700

On race days you can contact the fast tender on 0418 678 819



SASC NEWS SIGNALS FROM THE COMMODORE

One of the joys of racing on a well-crewed sailing boat is that, when things need to happen, they just happen. Whether it's the offshore skipper calling for a headsail change in a gale force breeze and the accompanying breaking big seas or a challenging spinnaker gybe set around an inshore mark — someone goes forward, someone goes to the mast, another grabs the halyards in the pit and grinders grind. Everyone knows their job, everyone pulls their weight without complaint or rancour. No shouting, no fuss — it just gets done.

Sometimes, when it all goes wrong and the sail goes overboard or the spinnaker pole flies skyward or a halyard flies loose from the masthead, everyone just sets about cleaning up the mess — no recriminations, no finger pointing, just getting the boat sailing again and back on course and all done with good humour, good grace, a lot of laughs and a few tall stories to be told over the bar after the race is done

The boat goes well when the team goes well. It is a great thing to be part of and I think it very much personifies the spirit that embodies the Amateurs. It is true of our Flag Officers and our Board, it is true of our office staff and the lads that look after the clubhouse and run the boatshed.

So it with great honour that I assume the mantle of Commodore of the Club and take over the helm of what is a very well-oiled and finely-tuned racing machine. For that I would like to pay tribute to our Immediate Past Commodore, Liam Timms who, apart from a rather alarming penchant for gaudy blazers, not only led our Board of Directors with distinction but, behind the scenes, provided an admirable level of compassion, care and commitment to our staff and colleagues during some often challenging times. Thank you Liam, you've set the bar very high!

When we talk of that Amateur's spirit, one only has to witness the extraordinary contributions of the team of volunteers who have worked so assiduously on the re-building of the clubhouse deck in recent weeks. Make no mistake much of this work is a hard, backbreaking grind of lifting and cutting, sawing and drilling, hammering, screwing and nailing under the none-too-forgiving eye of our engineering overseer, Trevor Cosh. What has been particularly heartening is that in addition to the old (and I use the word both metaphorically and literally) regulars who turn up and contribute to every working bee, the ranks have been swollen by some new members who, although only recently joined, are contributing valuable time and effort to the project — and they thought they had joined the club to go sailing!

However a closer examination of our volunteer workforces reveals that while our spirit may not flag, age is certainly starting to weary some of us. On a quick reckoning we calculated the average age of participants was certainly well over 60 and on some days increasingly close to 70. In a decade's time, the challenge will be holding onto the Zimmer frame and a power tool at the same time. It may not be pretty!

It does highlight the issue I raised at our AGM, which is that we must start to look at ways of arresting the decline in our membership numbers and actively seeking to recruit a new, younger generation of sailors and boat owners who will not just inherit the mantle and embody the Amateur's spirit but man Coshy's bloody working bees!

Bruce Dover

ANNUAL GENERAL MEETING 2016

Despite the passing showers (actually passing deluges, it was definitely a foul weather night), 46 members braved the weather and attended the Annual General Meeting at the Club on 3 August.

Commodore Liam Timms opened his last meeting as Commodore with thanks for all the support he had received from the Flag Officers and Directors during his term as Commodore. He reflected on the special nature of the Amateurs which benefitted so much from the efforts of a remarkable number of volunteers who kept the Club operating — from sailing activities to major reconstructions of the Club's facilities. He also thanked all the staff for their great efforts during the year. In conclusion he congratulated the incoming Commodore, Bruce Dover, and presented him with his burgee.

There being only enough nominations to fill Board vacancies, the following were elected unopposed for the coming year. Commodore Bruce Dover, Vice Commodore Sean Kelly, Rear Commodore Peter Scott, Captain Chris Manion, Hon. Treasurer Greg Sproule, Hon. Secretary David Salter, Directors Trevor Cosh, John Crawford, Charles Davis, Maurie Evans, John Jeremy, Marni Raprager, Herschel Smith and John Sturrock. Liam Timms continues on the Board as Immediate Past Commodore

Commodore Bruce Dover was presented with his burgee by Liam Timms



Greg Sproule presented the accounts for the past year which were carried by acclamation. Then, on behalf of the Board, Commodore Bruce Dover proposed to the members that Past Commodore Bill Hogan be elevated to Honorary Life Membership in recognition of his long service to the Club, a proposal which was enthusiastically supported by all present. Following the meeting it had been planned to show a rare 30-minute archival film which documented the Australian challenge for the 1971 Admiral's Cup in the UK, to be presented by David Salter. David was an apology for the meeting having only just finished in a very slow race to Southport but, in any case, a 'technical inoperability situation' (the DVD didn't work) prevented the film from being shown. It will be saved for another time.



Commodore Bruce Dover presenting Past Commodore Bill Hogan with a framed Club burgee in recognition of his appointment as an Honorary Life Member

ANNUAL PRIZEGIVING 2016



All photos John Jeremy

A happy crowd of 151 members and guests enjoyed perfect winter weather for the annual prizegiving at the Club on Saturday 2 July



The Les Ardouin Trophy started the proceedings with a bang



Prize winners.....















...and more prize winners









Inspecting the loot



Robert Keessen and Dennis Wood, winners of the Kelly Cup in Antares (343)



The crew of Antares, winners of the Kelly Cup for 2016



Lunch is ready!



Could there be a better place for lunch on a sunny winter's day?

LORD HOWE CRUISERS CONVENE AGAIN

As has become something of a tradition, skippers and crew intending to make the 850 n mile round trip to Lord Howe Island for the annual Yachtie's Barbeque met for a quiet little drink at the SASC in July.

Twelve yachts completed the passage-and-return cruise last year, and it is expected that the fleet for 2016 will be around the same number. Yachts expressing a firm interest at the QLD included *Fidelis*, *The Indefensible*, *Maris*, *Anitra V* and *Spindrift* from the Amateurs register, plus *Morning Bird*, *Amatese*, *Smoky Cape*, *Ariki Tai* and *Into the Mystic*.

The cruise has no formal organisation or timetable. The only fixed point is that all participants should arrive in time for the yachties-and-islanders BBQ at Ned's Beach on the second Tuesday after the Melbourne Cup (this year that falls on November 15).

The BBQ is a fund-raiser for the local public school and contributes at least \$3000 to the Parents & Citizens group every year.

There will be a "Compass Check" meeting at the club on Tuesday 20 September for skippers and crew who have committed to the trip and secured their mooring in the Island lagoon.



Photo David Salter

Lord Howe Island is one of the world's most beautiful landfalls

FRIDAY TWILIGHT RACING

The winter season is barely over, and the chilly westerlies have yet to fade away but it is not too early to think about the coming season.

This year, yachts which sail in the Friday Twilight Series will have the opportunity to win a trip to Hobart for two people. Simply sail in the SASC Friday Twilight Series and, when you make a season entry and complete five races, your boat becomes eligible to enter the draw for a trip for two to Hobart

The prize includes return economy airfare from Sydney to Hobart and three night's accommodation for two in Hobart.

The more races you compete in increases your chances of winning. The trip for two will be drawn at the completion of the last race in the series.



Terms and conditions apply.

Photo John Jeremy

Constitution Dock in Hobart



FLAG OFFICERS DINNER

The annual Flag Officers' Dinner will be held at the Club on

Friday 23 September 2016 at 1900 for 1930

This is a special opportunity for us to entertain Flag Officers from other Sydney clubs in our unique clubhouse on Mosman Bay

The cost will be \$70 per head (including GST) and bookings are essential — call Megan or Judy at the Club before Wednesday 14 September

IMPORTANT NOTICE2016–2017 SAILING SEASON

As has been the practice for several years, all skippers, or at least one member of their crews, will be required to attend a briefing at the SASC prior to the start of the new season. The briefing will cover the conduct of SASC events, safety issues, Harbour regulations and incident reporting requirements.

Attendance at a briefing will be mandatory. Yachts will not be accepted as entrants in SASC series without evidence that the skipper or at least one of the crew has attended a briefing. Evidence of attendance at a similar pre-season briefing conducted by another Harbour club will, however, be accepted.

There will be two briefing sessions to provide skippers alternative opportunities to attend, on Wednesday 24 August and Thursday 25 August 2016. These dates will also be well advertised at the Club and to as many members as possible by email.

August 2016

UZBEKISTAN

You may well wonder why on 17 May this year Lynn and I were standing in a very short queue at London Heathrow waiting somewhat nervously to check-in at the Uzbekistan Airways counter.

by John Crawford

We had some trouble finding the counter, because it was actually located to one side of the Departure Terminal 4 and hidden under a stair with a single counter and no sign of any staff. Not a great start.

I got the distinct impression that Uzbek Air wasn't into advertising and the only poster I could see had a distinctly 1970s' Russian look about it. I was somewhat relieved to see the depicted aircraft had jet engines, not propellers.

It was a 7:30 pm check-in, with the scheduled departure of Flight HY202 from London Heathrow to Tashkent at 9:35 pm. We were an hour late leaving London, but I was relieved to discover that our aircraft was an ageing Boeing 757-200 which looked in reasonable condition. My only way of determining age was how beaten up the entry doors are, followed by the condition of the seats. All was OK, meals were wisely avoided and approximately seven hours later we landed at Tashkent airport early morning their time.

This, then, was the beginning of an 11 day tour with the enticing title of Samarkand and the Silk Road Cities. We were 19 tourists, a tour manager and Professor James Allan, an expert and lecturer on the history of Central Asian Civilisations. For someone who has never been on a professionally-organised tour in my life, this was somewhat daunting. What was worse, much worse, was the fact that 11 of the 19 people on the tour came from Australia! Normally I run a mile from any Australians when I come across them overseas and run even further and faster from Americans, Germans and the Dutch. There are of course exceptions, but not many!

Well, how wrong can you be.

We all make assumptions, but this group of people really surprised me and they quickly emerged into the most erudite, delightful, patient, funny and knowledgeable group I have ever encountered. Obviously the tour title and the very nature of the tour pre-determines to some extent the type of the people who put their hand up for this kind of adventure, but in the end it was the people on the tour that made the tour such a success.

As SASC members you are possibly wondering about the relevance of this article. Me too, but what struck me as special is that Uzbekistan is one of only two countries in the world that are 'doubly landlocked' (Lichtenstein is the other). In other words it is about the furthest place on the planet from any significant body of water where yachts can be

sailed. In the 1960s the Aral Sea was the fourth largest inland sea on the planet with a fishing industry and trawlers. Now the fishing trawlers have been marooned by rapacious irrigation far from the waters on which they once plied their trade. Since the 60s the Aral Sea has shrunk to 50% of its original size and, just to help things along, none of Uzbekistan's rivers run to a sea, they just peter out. This combined with an average rainfall of 150 mm per year and an average high-summer temperature of 40 degrees C, decades of questionable cotton and rice production have resulted in a catastrophic scenario of poor agricultural practices, overuse of pesticides and fertilisers, plus high water consumption crops such as rice and cotton, it's no wonder water is a problem and 80% of the country is not cultivated.

Anyway back to the journey. One of the major attractions for us was the romance of the history of the Silk Road and the pull of the legendary cities of Tashkent, Urgench, Khiva, Bukhara and Samarkand. All these cities wrote our history, were raped, pillaged, plundered, demolished and re-built over time, lots and lots of time, starting in the sixth century BC.

Alexander the Great rocked through Uzbekistan in 330–323BC, followed by the Turks, the Chinese and the Arabs, which takes us through to the 12th and 13th Centuries when Samarkand, Bukhara and Baghdad were destroyed by the Mongol Great Khans (1206–1634). Life didn't stop there, or maybe it did? Timur in the 14th C and the Timurids through to the 15th C held sway, until the time of Ulugh Beg, who with his friends and relations put his stamp on Uzbekistan for at least 100 years.

The Bukhara market



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The next major event occurred in the mid 19th C, when the Russians arrived. The Russians never really caught on, but survived until the demise of the USSR and in 1991 the Republic of Uzbekistan was founded. A democracy of sorts, perhaps better described as a benevolent dictatorship.

This tour could in no way be described as luxurious. Hotels were comfortable, all with en-suites and air-conditioned. Décor perhaps best described as 70s Russian, with somewhat threadbare floral carpets and a good deal of gold brocade, an interesting range of exotic window treatments and a varied selection of pictures of dubious provenance. For anyone interested in gastronomy, Uzbekistan has a great future — it can only get better.

With the exception of breakfast, all meals were sit-down three-course affairs and each was the same as the previous. It must be a standard format.

Old and new Bukhara



SASC NEWS

Appetisers were an assortment of vegetables, grated carrot, cold egg plant, sliced tomatoes, lettuce, perhaps hard-boiled eggs and sliced cucumber. This was followed by a soup, with or without meat balls, to be eaten with unleavened bread, best described as chewy. Main courses were lamb or, occasionally, chicken with potatoes and/or cabbage and assorted salads. Desserts were cakes of various descriptions, all similar. The coffee was OK and the Uzbeks do an excellent line in teas of various sorts.

Wine was available with main meals. There are two types of wine in Uzbekistan — red wine and white wine and that's it. The wines are excruciating and do not improve with being allowed to breathe, but this did not stop one member of the tour group sending his wine back because he thought it was un-drinkable. I thought it was all un-drinkable, so how he decided on that particular bottle was beyond me. Needless to say he didn't do it again, there was too much laughter. There was one type of beer, a Czech beer, made under licence, which was perfectly acceptable, plus ample quantities of sparkling or still bottled water. Needless to say, being a Muslim country, alcohol is not readily available and apart from hotels or restaurants is difficult to find.

This was no idle tour and our group kept moving apace. On Day 3 breakfast was served from 4.45 am, 5.45 am coach from hotel to airport, 7.15 am to 8.55 am flight to Urgench, then another coach from Urgench, 65 km to an ancient fortress Ayaz Kala in the desert. Lunch in Yurt Camp, (lunch as before described). A 90 minute walk to the fort site, time to do a couple of quick sketches, followed by a 93 km coach trip to the hotel in Khiva. At 6.45 pm a James Allan lecture (our tame Professor) on the Russian Empire and its role in Uzbek history, followed by a walk to our restaurant at 7.30pm, the day finishing around 10.00 pm.

Day 5 was similar, with a seven hour, 456 km coach trip from Khiva to Bukhara across the Kizil Kum (red sand) desert arriving in Bukhara about 3.45 pm. At 4.15 pm, depart hotel for a walk to the Money-Changers dome, followed by a tour of two madrassas and dinner at the hotel restaurant at 7.30 pm. It should be noted that the roads that link the major cities are Russian built and the coaches albeit modern, were no match for the roads.

After that we had five more days touring the sights of Bukhara and Samarkand, by which time I was all madrassa'd out. I'd seen lots of forts, museums, mausolea, carpet and embroidery workshops and artisans skilled in timber and metal work and of course madrassas.

My impression is that the Uzbeks are delightful and cheerful people, especially in the country, where the children and adults alike wave every time a tour coach passes and tourism is an industry that will undoubtedly bring valuable income to what is still a poor country. It is a country of huge contrasts, with the major cities developing quickly with rows of government-sponsored housing projects, taking the place of the older mud-brick housing. There are lots of young school age children, all immaculately dressed in shirts and ties and all testing their English at every opportunity.

The city markets are crowded, dirty, noisy, smelly and exciting, vibrant with commerce and trade but I came away thinking that, in essence, nothing much had changed since the days of Alexander the Great and Ghengis Khan. Horses and camels have been replaced with trucks, cars, planes and trains. The people are essentially the same, surviving as best they can, the enemies are still there in the many countries that border Uzbekistan and all of them still don't trust one another and all of them have roots that go back to their tribal beginnings.

FULL IMPACT

The Saga of a Twilight Collision

After many years of uneventful sailing and casual racing, nothing had prepared the crew of *Spinaway* for the drama that unfolded on the starting line of an SASC Twilight earlier this year. In a 25 knot gusting southerly, we were tee-boned amidships seconds before the siren sounded. It was no glancing blow. The colliding yacht's bow punctured our hull above the water line, starting a chain of events that has only recently seen *Spinaway* returned to her mooring off the Green Shed. As owner and skipper, I suddenly found myself dealing with a host of problems outside my experience.

The first task after impact was to get *Spinaway* stabilised and back to shore. Fortunately none of the four man crew was injured and we were able to continue on starboard tack to the eastern end of the start line and into the lee of a conveniently moored party barge.

Head to wind, with the engine started, we got the sails down and the boat trimmed to handle the stiff breeze and choppy waters back to the club. Secured alongside the pontoon with the assistance of the *Nancy K* and Mitch, the next task was to assess the damage and to patch up the large hole amidships. The bow fitting of the other yacht had come through the hull and pushed the electrical panel out of its frame.

There was no shortage of help from club members as stiff cardboard, plastic sheeting and gaffer tape were produced to make a workmanlike cover over the damage. The boat was safe for the moment.

by Richard Palfreyman

Ouch! Luckily the hole was well above the waterline





All patched up ready to return to the mooring

Photo Dan Pugh

What followed was a venture into the unknown as a list of tasks unfolded to ensure that club, NSW Maritime and insurance formalities were followed. These were to prove crucial to a smooth, if somewhat lengthy, return to sailing.

The collision fell into the "serious" category that required a Sailing Vessel Incident report to be submitted to NSW Maritime. The report is mandatory if damage is above ten percent of the vessel's value and/or if the vessel's seaworthiness is affected. This is not just a personal responsibility. It's necessary under the Amateurs' Aquatic Licence to hold sailing events on the harbour. The form can be found on the NSW Maritime website.

The next consideration was insurance. *Spinaway's* insurer provided a 24/7 telephone help number for boating incidents. However, on a Friday night it was answered by the parent company's motor accident department. They told me to download a claim form on line and to lodge it as soon as possible.

The insurance claim raised the question of responsibility – which vessel involved had right of way and had a race protest been lodged and heard? If so, what was the result? In fifty years of casual racing, I had never lodged a protest or been involved in one. I'd sat through a few at the World Sailing Championships in Perth back in 2011 where

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points and a final place were at stake, but a protest for a twilight race? Wise heads around the club counselled that it was the right thing to do

– part of a process that would provide information for insurers as well as NSW Maritime if the incident report was followed up.

That decided, I had 24 hours to lodge a protest. Friday night was spent filling in forms, writing out incident reports and sketching diagrams of how and where it happened. Looming over all this was the need to get *Spinaway* repaired and in good sailing condition as soon as possible.

Luck was with me as I headed down to the Amateurs late Saturday afternoon with all the paper work to leave in the office. I ran into Shaun McKnight and Josh Alexander who now sail *Ranger* from the club. Knowing they both worked at Noakes, which was my first choice for repairs, I asked them how I should make contact with the yard on Monday morning. The result was that *Spinaway* had only two nights on the mooring before being towed down the harbour to Berrys Bay. The protest was heard the following Tuesday week with the other crew graciously accepting responsibility.

Throughout the weeks of work, Shaun kept me up to date with progress, arranged regular inspections and kept a personal eye on the project. The yard dealt with the insurance assessor and insured that my insistence on thorough checks for damage to the electrical components and standing rigging were included in the accepted quote. The major job was repairing not only the structural hull damage but the internal wall of the ice chest, the dislocated electrical panel and the matching of new paint and decals.

The final bill, excluding the insurance excess, was paid by the insurer directly to the yard. The company took several weeks to finalise the re-imbursement of the excess payment and a smaller amount not covered by my policy, but claimed against the other party. The insurer has also ruled out any rise in premium next year because of the claim.

In retrospect, the process was made easier by seeking good advice, a modicum of luck in running into Shaun and Josh and a hard slog with the early paperwork.

It was more than eight weeks before *Spinaway* was back on her mooring as good as new. We're looking forward to the new Twilight season.



Spinaway during a more normal twilight race



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NEW BLUE BOOK ONLY ONLINE

The release of the 2017 Racing Rules of Sailing will usher in the biggest change to the Blue Book since its first issue in 1969.

The rules will be available online free of charge and will not be produced in a hard-copy format.

Various electronic options were considered and a decision was made for the *Racing Rules of Sailing* with Australian Sailing Prescriptions, and the Special Regulations Parts 1 and 2, to be made available as:

- eBook for Kindle; Apple and Android app compatible
- Viewable in a web browser, and
- Downloadable as a PDF file; freely printable

The release will be broken into two publications of separate sets of rules:

- Racing Rules of Sailing with Australian Sailing Prescriptions (applicable from 1 Jan 2017 and published on the Australian Sailing website in November 2016)
- Australian Sailing Special Regulations (applicable from 1 July 2017 and published on the Australian Sailing website in May 2017)

Design work is underway to ensure all rules and regulations are searchable, and that the index and all references to rules and regulations are properly linked.

The only difference with future versions is that there will be no hard copy for sale in retail outlets. The PDF files will be unrestricted and sections can be printed at the user's discretion.

SOUTHERLY REFLECTIONS

On page 39 of the June edition of *SASC News* there is a photograph of *Caprice* on a reach, showing great speed. The fore triangle is fitted with a high-cut self-tacking jib and a jib topsail. This combination is very efficient on a Bermudian rigged yacht.

On all points of sailing Harry Pfeiffer could see where he was going. A skipper of a yacht with a deck-sweeping genoa is totally blind through many degrees and he alone is blamed if a collision occurs. This horrendous event can happen if crew members fail to keep a keen lookout.

A well-designed classic yacht such as *Caprice* has no vices and can be controlled by a crew with average skills. Most state-of-the-art moderns need champions to control them in a strong wind. We could learn a great deal from our grandfathers regarding safe sailing.

Southerly

WINTER RACING



Photos John Jeremy

Ca Va on the way to report to the starter for the Combined Clubs Winter race on 25 June, one of the better days during the series. Typical winter, either not enough wind or too much



Josephine on the way to the start in the brisk westerly of 25 June



The start of Division 2, closely watched by the starting team in *Mischief*



Lolita and As You Do on the way after rounding N2



Rounding the Beashel Buoy



Ca Va beating to windward in clear air



Concentration in As You Do



Photo Marco Tapia

The last race in the SASC series on 23 July was abandoned because of strong, gusty wind. Fortune of War, skippered by RANSA Commodore Adrian Gruzman, took the starter's advice and retired to the SASC for a drink or two

AROUND THE CLUB



Trevor Cosh (centre) leading his team replacing the doors on the Green Shed



Photo Bernadette Kerrigan

Trevor Cosh taking delivery of timber for the major repairs to the club wharf



In preparation for the replacement of the wharf decking and repair of the under-structure, a careful survey was carried out from above.....



....and below



Photo Bill Hogan

Peter Scott and Trevor Cosh surveying the wharf



Photo John Jeremy
Discussing the latest can of worms — how to stop the clubhouse from slipping into the bay



Photo John Jeremy

Doubling up the wharf beams with recycled slipway cradle timbers



Photo John Jeremy

Frank Walsh and Fred Bevis, being supervised by Tony Saunders, preparing essential supplies for the workers — lunch



Photo Marco Tapia

Good progress on 30 July, before the weather turned nasty

FUEL FROM SEAWATER

The US Naval Research Laboratory (NRL) has been granted the first US patent for a method to simultaneously extract carbon dioxide and hydrogen from seawater.

According to the US Navy agency, this single process provides all the raw materials necessary for the production of synthetic liquid hydrocarbon fuels.

Researchers from the US Naval Reserve, the Office of Naval Research (ONR) and NRL are among the co-contributors and inventors in the patent issued on 5 April 2016 by the United States Patent and Trademark Office.

The Electrolytic Cation Exchange Module (E-CEM), developed at NRL, provides the Navy the capability to produce fuel stock (LNG, CNG, F-76, JP-5, etc.) at sea or in remote locations.

According to NRL, the E-CEM has successfully demonstrated proof-of-concept for a simultaneous recovery process of carbon dioxide (CO₂) and hydrogen (H₂) from seawater. The carbon dioxide and hydrogen gas recovered from the seawater as feedstock are catalytically converted to hydrocarbons in a second additional synthetic process step.

"A ship's ability to produce a significant fraction of the battle group's fuel for operations at sea could reduce the mean time between refueling, and increase the operational flexibility and time on station." said CMDR Felice DiMascio.

"Reducing the logistics tail on fuel delivery with the potential to increase the Navy's energy security and independence, with minimal impact on the environment, were key factors in the development of this program."

Dr Heather Willauer, research chemist at NRL said: "Building on the success of the first exchange module, we have scaled-up the carbon capture process to improve efficiency and substantially increase feedstock production.

"Using a scaled-up, second generation E-CEM prototype, we will substantially increase CO₂ and H₂ production capable of producing up to one gallon of fuel per day, an increase nearly 40 times greater than with the earlier generation E-CEM."

To accommodate increased feedstock production, NRL is also scaling up the catalyst system to synthesize fuel from CO_2 and H_2 . Having fully realised the product distribution of hydrocarbons using a small plug flow chemical reactor, NRL has recently partnered with a commercial entity to test the catalyst using their large-scale chemical reactor.

"Basically we are optimizing both processes separately, CO₂ and hydrogen production and recovery, and synthesis of hydrocarbons from CO₂ and hydrogen," Willauer said. "Since we will be producing enough feedstock in the near future, we envisage integrating the two processes at our Key West facility to further evaluate how full-scale end-to-end production might evolve."

At these scales, Willauer contends there will remain several issues to resolve, however, the team hopes to have the two processes operating at Key West by late 2016.

HYDROGEN FROM GRASS

With the great potential for hydrogen to be used as a major energy source in the future, teams are searching for ways to quickly and cost-effectively derive hydrogen. Cardiff University says they have done just that, by unlocking hydrogen from garden grass.

Hydrogen has enormous potential in the renewable energy industry, due to its high energy content, and the fact that it does not release toxic or greenhouse gases when burnt.

Hydrogen is contained in enormous quantities all over in the world in water, hydrocarbons and other organic matter. However, the challenge has been finding ways to unlock that hydrogen in a cheap, efficient and sustainable way. The common method of separating hydrogen from water, for example, is electrolysis, which utilises a large amount of electricity, making it uneconomical.

The breakthrough from Cardiff University's Cardiff Catalysis Institute shows that significant amounts of hydrogen can be extracted from fescue grass, using sunlight and a cheap catalyst.

This discovery could potentially lead to a sustainable and scalable way of producing hydrogen.

The organic compound cellulose, which is a key component of plants, and is the most abundant biopolymer on Earth, is a promising source of hydrogen.

The researchers looked into the possibility of converting cellulose into hydrogen using sunlight and a simple catalyst, in a process called photoreforming. The sunlight activates the catalyst, which then converts cellulose and water into hydrogen.

The scientists tested the effectiveness of three metal-based catalysts — palladium, gold and nickel. They were particularly interested in nickel, as it is more abundant than the precious metals, and more economical.

In the first round of experiments, the researchers combined the three catalysts with cellulose in a round bottom flask used a desk lamp to illuminate the mixture. They collected gas samples from the mixture at 30 minute intervals, analysing them to see how much hydrogen was being produced.

They then repeated the experiment, replacing the cellulose with fescue grass from a domestic garden.

According to Professor Michael Bowker, significant amounts of hydrogen can be produced using this method with the help of sunlight and a cheap catalyst.

"Up until recently, the production of hydrogen from cellulose by means of photocatalysis has not been extensively studied," he said.

"We've demonstrated the effectiveness of the process using real grass taken from a garden. To the best of our knowledge, this is the first time that this kind of raw biomass has been used to produce hydrogen in this way. This is significant as it avoids the need to separate and purify cellulose from a sample, which can be both arduous and costly."

Engineers Australia Industry News 1 August 2016

[What next? — Ed.]

NAVAL BITS



HMAS Canberra (L02, in the centre of the photo and HMA Ships Warramunga and Ballarat (top left) in Pearl Harbour for the recently completed US-led multinational exercise RIMPAC 2016.

53 ships and four submarines from 26 countries took part in the exercise



A United States Marine Corps MV-22B Osprey aircraft lands on board HMAS *Canberra* off the northeast coast of Hawaii during RIMPAC 2016



A United States Navy Landing Craft, Air Cushion (LCAC) enters the well dock of HMAS Canberra off the coast of Hawaii during RIMPAC 2016. This was a first for this class of ship



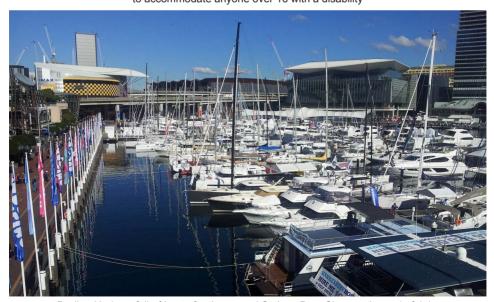
Two Evolved Sea Sparrow missiles simultaneously launched from HMAS *Ballarat* as part of a live-fire exercise during RIMPAC 2016

AROUND THE PORT



STS Tenacious at the Australian National Maritime Museum during her first visit to Sydney.

Tenacious is a British wooden sail training ship completed in February 2000, specially designed to accommodate anyone over 16 with a disability



Darling Harbour full of boats for the annual Sydney Boat Show at the end of July.

Next year the internal component of the show will be in the new International Convention Centre Sydney (in the background) which will be opened later this year

DRONE SHIPS ARE COMING

At a recent conference, representatives from the Rolls Royce-led Advanced Autonomous Waterborne Applications Initiative (AAWA) discussed the project's vision of how remote and autonomous shipping will become a reality. "This is happening. It's not if, it's when," said Oskar Levander, Rolls-Royce, Vice-President of Innovation.

The main driver towards the development of drone ships has been the advancement of digital technologies, specifically in the area of sensor technology allowing for remote access, operation and diagnostics.

The technologies needed to make remote and autonomous ships a reality already exist. The AAWA project is testing sensor arrays in a range of operating and climatic conditions in Finland and has created a simulated autonomous ship-control system which allows the behavior of the complete communication system to be explored. A remote-controlled ship could be in commercial use by the end of the decade.

With no people on board, many constraints on a ship's layout are removed. One of the most obvious is the removal of the accommodation and with that the entire deckhouse. This will save cost, weight and space, as well as enabling the ship to carry more cargo. A ship contains systems which are only there to serve the crew. Their removal will simplify the entire ship, which should improve the reliability and productivity while reducing construction and operation costs.



Image Rolls Royce

Rolls-Royce's vision for a land-based control centre for the operation of autonomous cargo ships

NEW MEMBERS

We welcome the following new members:

Bruce Meppem Andrew Rogers

SASC NEWS IN COLOUR

Don't forget that the *SASC News* is published on the Club's web site in full colour. If you haven't had a look yet, do so today. Past editions are also available.

LOCKERS FOR RENT

Some lockers are available to rent in the main boatshed. The cost is \$80.60 (incl. GST) per quarter, paid in advance. One month's notice is required to vacate.

Please contact the office if you are interested.

SASC SHOP

(AKA The Office)

SASC Club Merchandise

Burgee – Medium 30 cm x 45 cm Tie	\$32.50 \$25.00	
Cap – White One Size Fits All	\$20.00	
Polo Shirt – Navy Short Sleeve S M L XL	\$36.00	
Polo Shirt – White Long Sleeve S M L XL	\$40.00	
Rugby Top – XXL Only	\$49.00	
Gaffers Day Merchandise		
Wide Brimmed Canvas Hats – S M L XL	\$35.00	
Ladies' Tees – 8 10 12 14 16 18	\$30.00	
Posters – Various Years each	\$ 5.00	
Posters – Package of 5 various	\$20.00	
Books		
The Amateurs — The Second Century Begins	\$40.00	
Ranger Sprint Series (limited stock)	\$65.00	
The Australia Day Regatta	\$35.00	
YA Racing Rules of Sailing		



NEWSLETTER DEADLINE

The next *SASC News* will be the October 2016 edition. Contributions from members, which are always welcome, should reach the editor by Friday 30 September 2016. Contributions can be in hard copy or sent by email. Photographs are also very welcome.

FROM THE ARCHIVES



Thara, then owned by Arthur Prigge, entering Middle Harbour on the afternoon of 13 July 1985 during the first of four races in the first SASC Winter Series. This race ended with an overnight raft-up in Sugarloaf Bay. Thara is now owned and loved by Rob Landis



Yachts for those in the know!













See our website for full details.