

Full & By



Crew newsletter
of the barque

James Craig

August - September 2002

Let's get our 'dings' right

General maritime time keeping - by Paul Harvey

Name of watch	Hours
Middle	0000 - 0400
Morning	0400 - 0800
Forenoon	0800 - 1200
Afternoon	1200 - 1600
First Dog Watch	1600 - 1800
Last Dog Watch	1800 - 2000 (never the second dog)
First	2000 - 2400

Back in Cook's days, the maritime day ran from midday to midday. The "day" began with the afternoon watch and ended with the forenoon watch. This explains the watch beginning at midnight being termed, the middle watch.

On the 20th century Craig, our day begins at 2400 with the middle watch.

Other than the standard four-hour watches, the purpose of dividing the period between 1600 and 2000 into the two dog watches is to provide an odd number of watches in the 24-hour day. This means crew will rotate and not end up serving the same watches day in, day out.

The ship's bell is our clock

The time on board a ship is indicated by striking the hours and half hours on the ship's bell throughout each watch, except in silent hours (e.g. at night) and during church services, in accordance with the table below. The time thus indicated is

called "one bell", "two bells" etc. according to the number of times the bell has been struck.

Cycle of striking bell -

At end of first half hour	1 bell
At end of first hour	2 bells
At end of first hour and half	3 bells, etc.
At end of fourth hour	8 bells

First dog watch

At end of first half hour	1 bell
At end of first hour	2 bells, etc.
At end of second hour	4 bells

Last watch (never the second dog) - same as above except that at end of second hour, eight bells are rung to indicate end of second dog watch and beginning of first ordinary four-hour watches.

Striking the bell

The bell striker should be moved in the same direction as the bell swings so as to produce a loud clear ring or paired rings separated by a second of time (count "one thousand").

One bell	-	ding
Two bells	-	ding, ding
Three bells	-	ding, ding ding
Four bells	-	ding, ding ding, ding
Five bells	-	ding, ding ding, ding ding

Except for marking time, the ship's bell is struck only when the ship is at anchor /or in fog or other bad visibility. The fog signal is the rapid ringing of the bell for about five seconds every minute.

Traditionally the bell is struck 16 times at the end of the year - eight times for the last year by the oldest person on board and eight times for the next by the youngest.

James Craig Crew News

Compiled by Peter Davey

Production by John Spiers

**Cover artwork by
Sean Douglas**

All crew members and others associated with the James Craig are very welcome to submit material for this newsletter

The opinions expressed in this newsletter may not necessarily be the viewpoint of the Sydney Maritime Museum, the Sydney Heritage Fleet or the crew of the James Craig or its officers.

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Seamanship

“Seamanship is an art like any other; it is not something which can be picked up in one’s spare time, indeed, it leaves no leisure for anything else.” (Pericles address to the Athenians (History of the War between Athens and Sparta)

Definitions

Becket 1. Rope handle. 2. The eye or hook of a block or block strop. #. A block strop is short rope with an eye at one end and a button at the other, used for securing spars, oars, etc (Batavia has beckets attached to the yardarm to hook arm through when working on yard)

Fast. “The halyard is fast.”

Fall. The hauling end of a tackle

Grommet. An endless wire or fibre rope made from one continuous strand.

A quoit is a grommet.

Irish Pennant. Cordage ends that are frayed or raveled due to neglect.

Long-jawed-rope. Old rope that has stretched and lost much of its twist.

Overhaul. 1 To separate the blocks of tackle preparatory to another haul.

2. To eliminate kinks in a line by recoiling, stretching, or flaking.

Pendant. A Standing rope or wire rope to which a tackle is hooked, seized, or shackled.

Purchase. A mechanical advantage gained with block and tackle.

Rope. Any cordage stouter than 1 inch in circumference.

Standing part. The inactive part, as opposed to the end, bight, or loop.

Throughfoot. A tangle in a tackle due to a block’s upsetting.

Cringles. Small loops attached to the on the bolt-rope of a sail, used to fasten different ropes. E.g. reef tackle, bowlines used to extend the leech of the sail.

Earrings. A rope attached to the cringle of the sail, by which it is bent, or reefed.

Trivia

Di’s job descriptions, in 1626, was “Yeoman of the Halyards, Sheets, Tacks and Jeers. (Jeers - heavy tackle used to hoist the yards.)

Our last sail on July 31 was at the other end of the scale from boistrous trip featured in the last newsletter.

This time we raced some fishing bouys - and they won. Still, it allowed time for a circuit in the rescue boat for some photos by John Spiers.



. . . a painted ship upon a painted ocean . . .



A visit to the Star of India

Story and photos by Peter Davey

On a recent visit to the San Diego I was invited to join the crew-training day on the Star of India.

The crew trains every second Sunday and I was fortunate that, not only did my visit coincide with their training day, but also they were swaying up the fore upper topsail yard. I gave the crew a brief history of the Craig, the restoration, and our sailing. They were impressed that we sail twice a month compared with their 3 times a year. I was impressed with their zeal and professionalism.

As you enter San Diego by road, rail or tram you cannot miss the STAR. Her

birth has favorable winds, so they can set a considerable number of sails when alongside. This exposure ensures that most visitors to this city inspect the Star. The running rig has had the chains removed from the halyards; all running rigging, blocks and sails are of the minimum size and weight, this enables the weekday crew to handle the sails with ease.

The Star is the oldest actively sailed square-rigger in the world. She began her life as the ship rigged Euterpe, named after the ancient god of Music, taking immigrants to New Zealand and ended her life as a factory ship for the Alaska Packers (salmon) in 1923. In 1926 a

group of ambitious San Diegans bought her to become a maritime museum. With the depression, war years her restoration was not complete until 1976. She is in the Guinness Book of Records as the oldest active sailing ship in the world.

She was built in 1867 at the Isle of Man and is even more massively built of iron than the Craig. At first glance she looks much the same as the Craig but she does not have our classic clipper lines. When you step onboard her she appears to be about 30% larger than the Craig. Length overall 212 ft, sparred length 280 ft beam 35 feet, maximum draft 21.5ft with a Gross Tonnage of 1318. A must to see if you are in San Diego.



*ABOVE: Swaying up the fore upper topsail yard on the Barque "Star of India"
BELOW: She has two Capstans, one of the forecastle and one just aft of the mainmast.*



A tonne is not a ton if it is GRT, NRT or DWT

By Stephen Smith

Most of you at one time or another try to compare one ship with another, and find it hard to get an accurate comparison.

Often the publicised tonnage has no relation to the publicised tonnage of another ship. Ships have records of all their tonnages, but only publicise the one relevant to their market. There are four tonnages in common use today. Gross, Nett, Deadweight and Displacement.

* **Gross Tonnage.** Formerly known as Gross Registered Tonnage or GRT. This is the measurement used to publicise the size of passenger ships. It also applies to other ships. It has nothing to do with weight. It is a measure of size, or more specifically the total enclosed volume of the vessel. 100 cubic feet of enclosed volume = 1 Gross ton.

Gross tonnage was created in 1347 by King Edward III as a means of taxing the wine shipping trade. Wine was transported in large casks called TUNS. The number of tuns a ship could carry determined the ships tunnage, and hence the amount of tax to be paid. In order to make it simpler, it was determined that 100 cubic feet of the enclosed volume equals 1 ton. This measurement has never been converted to metric.

* **Nett Tonnage.** Formerly known as Nett Registered Tonnage or NRT. This is a measurement of a ships total enclosed cargo carrying volume. Essentially it is the Gross tonnage minus the machinery, bunkers, ballast and accommodation spaces. It is generally of interest to those moving bulky cargos where volume is the main issue, rather than weight.

Nett and Gross tonnages are still used to determine how much tax a ship pays. The toll on the Panama canal is based on Nett tonnage.

To put a visual perspective on it, the inside of a standard 20 foot long shipping container would be equivalent to 11.7 gross or nett tons. Look at the num-

bers on the back of a container when you see one. This raises another issue.

The gross and net tonnages on the container are land based figures, even though it a shipping container. They have nothing to do with the gross and nett previously mentioned. Gross is the maximum allowable fully laden weight. Net is the maximum allowable weight of the cargo in the container. Look at the packages in your pantry at home. The TARE of the container is the empty weight of the container.

* **Deadweight Tonnage.** Yes the tons does refer to weight. This is the weight of cargo a ship can carry. It is the dead weight. The weight that does nothing except pay the bills. You will mostly see this measurement used to advertise the size of large cargo ships such as oil tankers or bulk carriers.

* **Displacement Tonnage.** This is the weight of the ship. No tricks or funny calculations. The most visible place where this is used, is to advertise the size of a navy ship. The displacement tonnage of all vessels is needed for many purposes. It's just that you don't see it publicised that often. The two figures you will most commonly see are the "full load displacement" and the "light ship displacement". Full load displacement is pretty self explanatory. Light ship displacement is with no cargo and minimal stores and fuel. Only enough for the vessel to function.

Displacement tonnage dates back to the days of ARCHIMEDES, a few thousand years ago. The concept of displacement though, is a fundamental law of physics from the dawn of time. "An object placed in water will be buoyed up by a force equal to the weight of the quantity of water it displaces." Confused? Read on! Weight and volume are directly related. Density is the major factor. A ship will sink in air because it is heavier than the equivalent volume of air. Air is not very dense. A ship will be float in water because it is lighter than the equivalent

volume of water. It will sink into the water until it has moved aside (displaced) a weight of water equivalent to its own weight. That's the part of the ship we don't normally see. Water is about 800 times denser than air. The salinity (salt content) and temperature of the water will determine the exact density. Ocean salt water is about 2.5% denser than fresh water, so a ship passing through the Panama Canal (fresh water) will have a bigger draft than it does in the ocean. The Displacement Tonnage of a ship is calculated not by weighing the ship. It is done by calculating the volume of the ship below the water level, taking into account the water density.

1 cubic meter of fresh water @ 20 deg Celsius = 1 tonne (1000kg) and also equals 1000 litres

Earlier I said that GRT and NRT were "formerly known as". This is because of a technical change of grammar format a few years ago. The unit designations were removed.

For example: a ship previously stated as "Gross Registered Tonnage:- 70,000 tons"

The new wording would be "Gross Tonnage 70,000"

Even though this is the official new way of doing things, it has been slow being adopted. You still largely see the old format being used.

I have done some comparisons to illustrate some points. I have used the QE2 as a base line because it is a ship most people identify with.

Some data from the QE2 12 years ago - QE2's Gross tonnage has since been increased to 70,300. This was done by converting an outdoor pool area into an indoor lounge.

·	Gross Tonnage	66,450
·	Nett Tonnage	39,881
·	Deadweight	11,776 tonnes
·	Displacement	49,708 tonnes

How the QE2 compares to some other notables.

The USS Constellation, a well known visitor to Sydney, is rated at 81,000 tons full load displacement. It doesn't sound much bigger than QE2's current "70,300



Deadweight tonnage would be handy to know. It is often asked.

To get some idea of the former Deadweight tonnage of the James Craig I have to find its empty weight. I have taken the current light ship displacement and subtracted the ballast weight. I also subtracted the weight of the 20th century accessories. This includes the weight of the machinery, the steel making up the 20th century zone, the windlass, the tween deck planking and the aft deckhouse. A ball park estimate would be 55 tons / tonnes.

This would make the James Craig approximately 400 tons empty.

Deduct the 400 tons from the 1600 tons full load displacement. And then allow for crew and provisions. You then come up with a figure of nearly 1,100 tons Deadweight.

The current James Craig does not have a current tonnage certificate as it is not needed under the current survey class for it. However some stats are available.

Full load displacement is 973.95 tonnes. Light ship displacement is 937.75 tonnes. This includes the machinery and ballast that is now a permanent fixture. The ballast carried is 415 tonnes of concrete in 136 blocks. 50 tonnes of lead in the engine room and 18.8 tonnes of lead in the tween deck boxes. Deadweight is 36.208 tonnes. The Gross tonnage is now approximately 674 because of the new deck house.

The original motivation for this item came from my frustration at reading some media reports about ships. Often the authors make comparisons that are totally wrong. Obviously they don't know their Gross tons from their Displacement tons. So don't believe everything you read. Except this.

In the 2003 to 2005 period, cruise ship tonnage will be in the Sydney media. Beginning in November 2003, Sydney will play host to P&O's new **STAR PRINCESS**. At 109,000 Gross tons it will be 43% bigger than any previous passenger ship to visit Sydney and the second biggest ship after Iron Pacific. In 2005, all these records will be shattered by the Queen Mary 2 when it comes to Sydney. It is currently under construction in France. At more than 150,000 Gross tons it will be more than double the Gross tonnage of QE2. QM2's maiden voyage is scheduled for January 12th 2004.

Now the muddy water of tonnage should be a lot clearer.

tons". You should use QE2's displacement tonnage. Now the difference is a lot bigger.

The biggest ship ever to enter Sydney Harbour is the BHP bulk carrier **IRON PACIFIC**. It had a deadweight tonnage of 232,000 tonnes. She could carry the weight of 4.75 QE2's. But not while in Sydney.

The biggest ship ever built is the JAHRE VIKING. (ex Seawise Giant, ex Happy Giant.) Her deadweight is 564,763 tonnes. She can carry the weight of 11.5 QE2's as oil. Now add her light ship displacement, and you have something around 600,000 tonnes full load

displacement. Her Gross Tonnage is 260,851. Some 3.7 times bigger than QE2. It is 1.56 times the length of QE2 and 2.1 times the beam of QE2.

So much for the smoke makers.

What about the JAMES CRAIG?

We must note that there is the former and the current JAMES CRAIG.

The former James Craig had a Nett tonnage of 646 tons. Look on the coaming under the main hatch. The full load displacement was around 1,600 tons. The Gross tonnage was 670.92 tons. Look at the old survey certificate posted in the sail locker.

James Craig was a cargo ship, its

Women at Sea.

Jeanne Baret was the first woman thought to have circumnavigated the world. She completed most of it on board the Etoile, the French explorer Bougainville's second ship and therefore was sailing ahead of Cook. However, she stopped off at Isle de France (now called Mauritius) and it was several years before she made it back to France.

Her journey was more remarkable for spending the first year disguised as a man and acting as valet to Philibert Commerson (the expedition naturalist). Supposedly she was only spotted as a woman by the Tahitian men!

Patrick O'Brien's Far Side of the Sea

The replica of HMS Rose is currently employed in the making of a new film by Peter Weir and the new owners of Rose, 20th Century Fox, called Far Side of the World, based on the novels of Patrick O'Brien. The film is being shot on the Pacific coast of Mexico and not on the "Far side of the world" with Russell Crowe in the lead.

<http://www.tallshiprose.org/office/letter.html>

Sybil's stuff

Our Cub and Scout sleepovers have really taken off! Have had 3 sleepovers, and we have 4 more booked over the next couple of months.

Our wonderful Sally has developed a short entertainment program for the

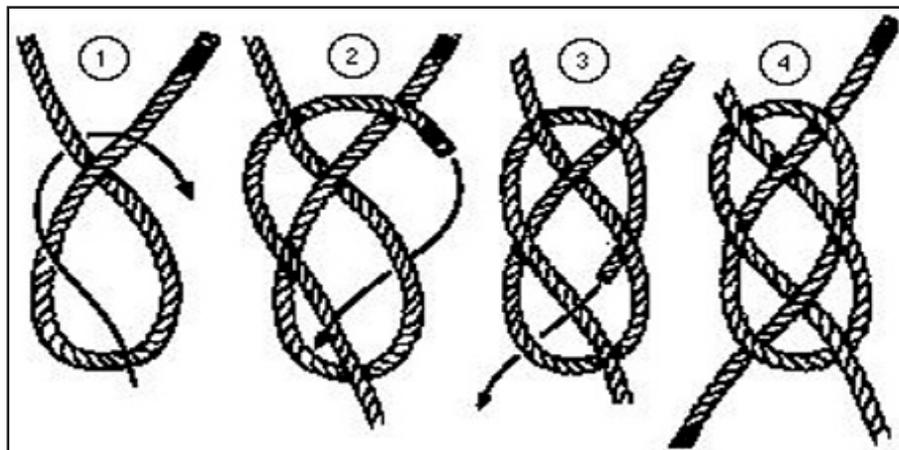
Cubs/scouts. Involving an orientation of the ship and a sing-a-long with Rusty as a special guest artist. I heard through the grapevine though, that last Saturday's s/o Rusty was a little too familiar with a few of the guests legs....??

Marine reserves

By Glenys Davey.

While National Parks on land protect species and ecosystems on land, marine national parks provide a similar protection for the marine life for present and future generations.

A series of marine parks are being established along the NSW coast. Marine parks provide a great opportunity to improve public appreciation, understanding, and enjoyment of our unique marine en-



Knot of the month Carrick Bend - according to Ashley it is as close as we can come to a perfect bend. It is symmetrical, it is easy to tie, and it does not slip easily in wet material. It is among the strongest of knots, it cannot jam and readily unties. It is the bend commonly tied in hawsers and cables. The knot must start and finish on opposite sides.



vironment.

Marine Parks are good for activities that depend on a healthy fish population - such as fishing, scuba diving and snorkeling. Each park will be divided into four zones: Sanctuary or "no take" zone, habitat protection zone, general use zone and a special purpose zone.

Why do we need sanctuary or 'no take' zones?

In 2001 the world's leading marine scientists concluded that sanctuary (no fishing) areas have significant benefits

resulting in long-lasting and often rapid increases in the abundance, diversity and productivity of marine organisms.

Also, the size and abundance of species increases with the "spillover effect" on surrounding areas. This means that fishing can get a lot better with sensibly placed sanctuary areas. In NSW marine parks, only one part of the park would ever be declared as a sanctuary or "no take" area. It is imperative that such a zone be sufficiently large to include critical habitat areas.

Why I am a guide

By Dave Hollingsworth

Many moons ago, when I was just a strip-ling kid, I was allowed to ride my bike up to the local library, every Friday night, as an 'end of week' treat. It was an escape from school work and home chores that this 10-year old could look forward to in the tough years just after WW2.

One night, while browsing through the 'adventure books' section, I found a magnificently large volume, all leatherette and gold lettering – all about a great sailing ship called the 'Cape Pilar' and its voyage around the world.

Well, that set my imagination racing and it was not long before I was rigging a look-a-like (if that is the word for it) on our 12' dinghy that Dad had built. (Where we lived in Auckland we were lucky enough to have, down at the end of our road, a crooked, muddy, tide-less arm of Auckland Harbour. Some years before, Dad had found an old abandoned dinghy, half buried in the sand on a local beach, and, with a lot of skill, had used the old sea-bleached planks as patterns to make a replica in the best tradition of old Joshua Slocum).

With my 'Cape Pilar' rigged and sails filled (square sails made from Mum's sheets; masts and yards from the neighbourhood bamboo forest) and with an oar over the stern as a rudder, I sailed before the southerly winds down our creek, reading the wind ripples on the water, listening to the chatter of the water against the clinker planking and dreaming of Cape Horn and the Doldrums. The row back home was a reality check.

The teen years came and I would spend whatever time I could in the dinghy down the creek, sailing the Cape Pilar, spearing eels, charting the channels, building landings, getting covered in rich black ooze and checking out the ripeness of the fruit in waterside backyards.

Then a holiday invitation opened to the door to the experience of a proper yacht – a 50' A-Class classic racing yacht. They were rich and I was not but by the time that coastal passage holiday to the Bay of Islands was over I was hooked. I had to have my own cruising boat, sometime, somewhere.

Another 20 years slipped by (University, work overseas, marriage and kids)

From Hugh Lander -

Our magnificent band of guides continue to offer sterling service, both on the alongside inspections and on the Saturday Cruises.

Since guided tours began in December guides have brought in well over \$180,000 in ticket sales through the Australian National Maritime Museum. The average monthly ticket sales, since sales began, is \$9605.

Thousands of dollars more have come to the ship via the Donations Box. This is a very valuable source of income for the ship and Sydney Heritage Fleet acknowledges the contribution.

We are always looking for new guides however so as to ensure that existing guides are not overworked and to cover for times when guides are away on holidays, sick or otherwise unavailable. Don't forget your incentive scheme which not only allows guides to come on board, as a guest and with a guest after every 100 hours service. More importantly, and with regard to our ongoing search for new guides, please don't forget that, for each new guide that you introduce who themselves have completed 20 hours of service, you get a 20 hour credit towards your 100 hour target.

At the suggestion of guides at a recent meeting we have now placed on board translations of some, or all, of the brochures which are in French, German and Chinese/Japanese. I hope that you find this a useful addition to your 'kit'

before the opportunity came. And by then I knew that I could never find the dosh to pay for a boat outright – I would have to make it myself.

In time I came across another book – this one written by a Canadian bloke called Sampson who showed how you could make one in your backyard and

then sail across the oceans in it. His designs were made from something called 'ferro-cement' - I had never heard of it. But friends had heard of several being built nearby and, after talking to the star-struck owners, I became a true believer, with even greater dreams.

In 1972, when we built our first home in Canberra, we left room beside the house for a 13.5m ferro yacht. In 1974 we started with pipe frames and chicken wire. Eight years later we launched in Botany Bay and she was magnificent. We learnt to sail.

But cruising dreams, work, building houses and the realities of maintenance are poor bedfellows so, after 10 very happy and fulfilling years cruising Sydney Harbour, we sold her. It was a miserable day.

But I had never lost the boy-hood interest in sailing ships, particularly the square rig ships of the 19th century. In later years my own library grew well stocked with the cruising classics – Griffith, Hiscock, Villiers, Roth, and Moitissier, backed up with the enduring reference books of Chapelle, Lubbock and Bowditch. I read them all.

Dreams persisted. Trips overseas took me to the 'Star of India' in Hawaii, the 'Cutty Sark' in London, the 'Balclutha' in San Francisco, and, more recently, the wonderous 'Vasa' in Sweden and the sleek Viking ships in Norway, and then the sadly neglected 'Peking' in New York.

Sue says "Oh no, not another old ship!" but I must see it, experience it, and let the imagination run.

So when the 'Batavia' hit town recently and I had time on my hands, fate played its hand and, one day, my good wife said "Why not see if they need anyone down at the museum?"

So that's why I am here most Fridays making my rather late contribution to our most precious, and absolutely wonderful, 'old/young lady' of the seas, our 'James Craig'.

Long may she live, this phoenix from the past. And if you happen to come across a dreamer on board sometime, just give him a pinch and wake him up. Thanks.

PS: Cabo Pilar is the western entrance to the Strait of Magellan.



Hugh Lander was asked for a summary of timbers used on the ship -

Main Deck & Cabin Deck	Solomon Islands Beech
Tween Deck	Oregon and Celery Top Pine
Carrick Bitts (immediately aft of forehatch)	Ironbark (recycled from an old Sydney Warehouse)
Pawl Bitts (either side of windlass)	Ironbark
Wooden Spars (masts and yards)	Douglas Fir (Oregon)
Main and T'gallants rail	Blackbutt
Coaming on Deckhouse	Teak
Dark vertical timbers on deckhouse	Kwila (sic)
Painted deckhouse timbers	Jarrah
Quarter deck furniture	Teak
Cabin Deck	Around doors and between panels Mahogany
Pale panel timbers	Bird's eye maple
Companionway leading to the saloon	Jarrah
Bunkboards and cabin bulkheads	Jarrah
Navigation Station chart table	Mahogany