



*HMS Agincourt (1863). It was the breaking up of this ironclad at Sheerness in 1960 that may have started the campaign to preserve Britain's first ironclad (and now its last).*

technology, but was also the object of much suspicion among the officers and men of the wooden-hulled sail-driven navy. Wooden-hulled steam warships had been around for twenty years and they were bad enough; but iron hulls were a point of bitter debate within the naval "establishment" and in the letters columns of *The Times*.

Such folk would have been relieved by the Warrior's layout; a single traditional gun deck with weapons arranged on the broadside (a line of guns down each side of the ship) plus single "chaser" guns at bow and stern. Some guns had rifled barrels, the rest were smooth bores. All used the old muzzle-loading system which gave a very slow rate of fire.

Withdrawn from use as a warship in 1884, Warrior spent many years in the reserve before being converted to a floating power station in 1904. In 1927 she was converted into a mooring hulk for naval vessels and towed to Pembroke Dock in March 1929; eighty years ago this year. For the next fifty years this humble role would ensure

Warrior's survival; although the real reason may be quite different. Once every ten years she would be dry docked at Milford Haven for essential maintenance.

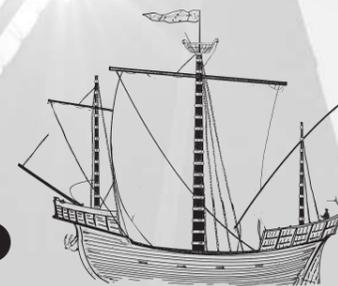
HMS Warrior, alias "C77" left Milford Haven for good on August 27<sup>th</sup> 1979. She was towed to Hartlepool for nearly ten years of restoration work to restore her condition to that of her first commission in the early 1860's. This task had never been attempted in Britain on such a large ship. The team that undertook the project faced many huge challenges, including working out aspects of the design for which written information was unavailable. (Example, the two funnels are telescopic; but how do you make them retract into the deck?)

Lastly, why was Warrior designed and built? Why was the ship so feared in the 1860's? And why did she pass into obscurity so quickly? Above all, why did Warrior survive for so long when most of her contemporaries, including her sister ship *HMS BLACK PRINCE*, (1862-1923) were sent to the breakers yards long before the 1970's

These are some of the questions I will be trying to answer at the St. Julian's pub in one of our evening talks this Autumn.

*Jeff Brooks.*

# S.O.S.



the Newsletter of the  
**Friends of the Newport Ship**



Jessica Morden M.P., with Mike Jones and Charles Ferris at a recent Ship Open Day.

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Spring 2009

**Free to Members**

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*The views given in this newsletter are those of the contributors and do not necessarily represent the views of the Friends as an organisation.*

# Modelling & Conservation

Toby Jones

Curator

Newport Ship Project

Six years have passed since the discovery and excavation of the Newport Ship. During that time, a team of archaeologists and conservators have been cleaning, recording and conserving the ship and associated artefacts. The entire hull of the ship has been digitally recorded, and these records are now being utilised to produce three dimensional physical and digital models of the ship.

The modelling project, dubbed 'ShipShape', is part funded by the Arts and Humanities Research Council, and will produce a 1:10 scale model of the ship. Project archaeologists are converting each FaroArm created wire frame drawing into a digital solid, using modelling software packages including Rhinoceros 4 and Solidworks. The model pieces are manufactured by a process called Selective Laser Sintering. The process uses laser beams to selectively melt successive layers of fine plastic dust. Wherever the lasers are directed, the plastic dust is melted. When the lasers are switched off, the powder remains unmelted, and creates a void. This will allow the archaeologist to accurately model all of the major fastener holes on the ship timbers. The process is extremely fast, with the lasers literally dancing about the work bed. A major advantage of using this technology is that the sintered pieces are flexible, allowing the archaeologists to gently reshape the hull. This research is being undertaken in an effort to determine the original hull form. The model will serve as a three dimensional blueprint on which to base the eventual reassembly and display of the vessel.

As part of the manufacturing process, batches of files are sent off to Cardiff University's Manufacturing and Engineering Centre, where the pieces are made and then posted back to the ship project. With a planned project duration of two and a half years, the public will be able to see the physical model take shape, as new pieces are created, manufactured, delivered and assembled every few weeks. When finished, the model will measure nearly 3.5 metres in length and nearly 0.8 metres in width. A specially designed exhibition table will allow the public to view the assembly work through clear polycarbonate panels.

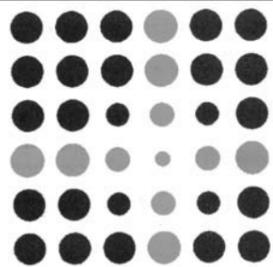
Funding has also been secured to update the display panels at the ship centre.

A thorough post excavation research report is being prepared which will map out the future research relating to the small finds and environmental samples. This report will identify areas of potential knowledge and help archaeologists prioritise the research goals of the project.

The Faro Arm laser scanner continues to be an important asset in the ongoing archaeological research programme. Several of the rigging elements have been laser scanned, along with barrel staves and some of the unique wooden small finds. The planned acquisition of a small freeze drier will allow these objects to be conserved and made available for display.

A series of Open Days have been planned for 2009, with numerous groups booking to see the ship or hear lectures and participate in activities led by members of the ship team.

Finally, conservation pre-treatment began in earnest in autumn 2008. Most of the hull timbers are currently being soaked in a 2% solution of ammonium citrate, in order to remove as many iron corrosion products as possible. The treatment regimen is scheduled to last for several more months. After thoroughly rinsing the timbers, they will be ready for PEG treatment, followed by freeze drying. Just one more step on the long path to getting the ship ready for reassembly and display!



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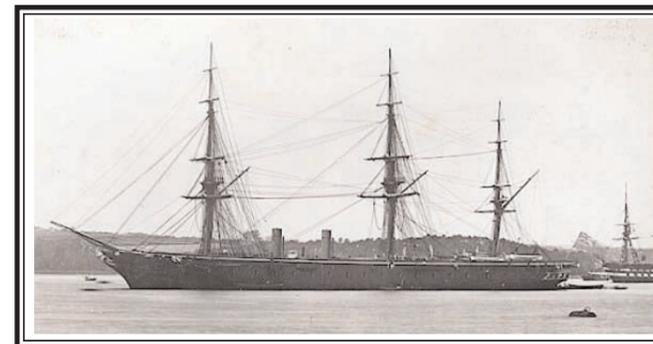
and Company Limited of London and renamed the HUNTSTRICK. She traded for a further three years, but met a tragic end on 8th June 1917. When she was 80 miles North West of Cape Spartel she was torpedoed by German submarine U39 and sunk losing fifteen members of the crew including the Master.

Alan Smith



Prisoners of war loading onto tugs and taken to Birkenhead, from the Paddle Steamer Jetty near Newport Bridge.

## “A Wolf Among The Rabbits”



HMS WARRIOR anchored at Plymouth in 1862.  
(Note the Red Ensign on the stern. Use of the White Ensign for all Royal Navy ships was not introduced until the 1870's).

I tend to hang on to nice presents and am not an habitual reader of the *Daily Telegraph*. These two facts came together when I read, in an occasional foray into the *Telegraph*, that HMS Warrior, the subject of a small fascinating drawing (for a small boy) in a Christmas present book, was still afloat in Milford Haven in Wales.

Due to its size, speed, construction and armament Warrior was described by a British admiral, when new in 1862, as “a wolf among the rabbits”. In 1929 the old ironclad had been reduced to the indignity of an oiling hulk and towed from Portsmouth to Milford Haven; her only identity being “C77”.

My discovery of Warrior's existence coincided with the first wave of interest in Industrial Archaeology. So two friends and I rapidly formed a very small (three members) society for the sole purpose of getting aboard the ship. This was quite difficult, but we finally tracked Warrior down to Llanion, on the east side of the Cleddau river and almost in the shadow of the new Cleddau Bridge. After weeks of letters and enquiries we were given the telephone number we needed and gained permission from the rather

puzzled senior naval officer at Pembroke Dock to visit the Warrior.

One Thursday morning in April 1974 we arrived at the now vanished Llanion naval fuel depot, walked down a tunnel cut through a cliff face and onto the concreted deck of C77.

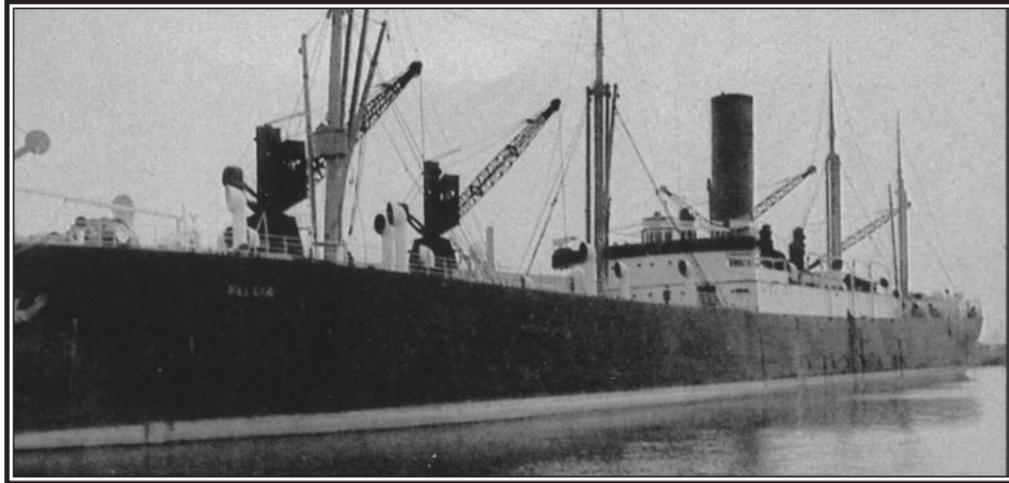
Stripped of engines, furnaces, boilers, guns, funnels, masts and yards, there was only the bare structure left. But this could not disguise the graceful lines of the hull and the immense unbroken space of the still armoured gun deck of what was once the world's most powerful and fastest warship.

Warrior was the world's first steam-driven ocean going warship to be built entirely of iron. Her gun deck was protected by an armoured box structure of 4.5 inches (115mm) of wrought iron armour backed by 18 inches (457mm) of teak. This exotic hardwood was necessary after tests showed that explosive shells fired against iron plate would cause thousands of splinters to shower off the inward face, with potentially horrific consequences for crew members. In addition to armour plate, coal bunkers, cork filled compartments and watertight bulkheads and doors provided additional protection. On the sides of the ship, the wrought iron armour extended below the waterline to protect Warrior from plunging shots to the outside of the hull. This also gave some protection (along with the coal bunkers), to the ammunition magazines, furnaces, boilers and the Penn single-expansion trunk engines in the machinery spaces. These engines were fairly reliable, but were inefficient and used up huge amounts of coal. This limited the ship's steaming range to just 1,000 miles.

In 1861 all this would have seemed the cutting edge of

# The Belgia Incident

With tension between Britain and Germany increasing and war between the two countries inevitable, Britain began to make arrangements, that in the event of war, Customs and Excise would issue an order that all enemy ships in British ports would be arrested and become a prize of war. A concern for the port of Newport was that in the event of a bombing raid and a direct hit on the Transporter Bridge, Newport's old town dock



*The Belgia unloading at Alexandra Dock*

could have been put out of action for several months. But in the event this never happened and German pilots appeared to use the bridge as a landmark.

On the 1 August 1914 Germany declared war on France and so started the countdown to a remarkable and daring episode on the Bristol Channel. A German steamer the BELGIA, flying the flag of the German Mercantile Navy, sailed at a steady eight knots down the English Channel, the time was late afternoon. The Belgia 8,132 gross tons and far larger than normal for a Cargo liner of that time was carrying a quarter of a million pounds worth of food stuff including exotic animals for the Hamburg Zoo. Built in 1902 by Workman, Clark and Co. Ltd. at Belfast she had twin screws and was originally named the Arak for the Arak Steamship Company Liverpool. In 1911 she passed to Brocklebank Ltd. of Liverpool and renamed The Mandasor. In 1913 she passed to the Hamburg-Amerika Packet Co who renamed her the Belgia. Belgia carried no radio communication (as was normal for this time) she did however, have a wireless which gave her access to national radio broadcasts and was aware that war had broken out between France and Germany. She hugged the English side of the Channel; the master hoping to clear Lands End by late evening was heading for the Bristol Channel and safe water. The night was clear and calm, the helmsman was told to keep a sharp lookout for the Hartland Point light. As dawn broke a sighting made the Master come onto the bridge; on the port side was the stark outline of Lundy Island, he kept a wary eye as he remembered that in the early part of the century a heavy British Man of War - the Montagu ran aground on this inhospitable shore and became a total loss. Quite oblivious to the dangers that he and his ship were in he made his first entry in the ships log. August 4 1914 "all's well." Slowly crossing to the Welsh side of the Channel near Breaksea Point he steamed steadily toward Barry Roads. The time was now past midday and hoping to enter Barry Dock showing the customary blue

flashing light, the semaphore from this port was short and brief "No Entry". To his even greater surprise he received the same answer from Cardiff Pier Head "No Entry." Newport, the last Welsh Port had been keeping a sharp watch on the Belgia and it was suggested that he could dock at the recently opened Alexandra Dock which at the time was the largest deep water Dock in the world. Belgia lay at anchor in the Bristol Channel waiting a pilot to guide her in, meanwhile at Newport the Chief Constable with Mr Edrupt the Customs Officer had commandeered the tug Wolfhound and with twelve policemen armed with rifles borrowed from the Territorial Army set sail towards the Belgia. The policemen concealed themselves below deck and pulling alongside all appeared normal to the Belgia. The customary greeting to the Master was made and he and his First Officer were invited to board the Wolfhound. It was at this moment that the Master's greatest fear became real. The Master was advised that he and his ship would be arrested as Britain and Germany were at war. With twelve armed police officers the Master could do nothing other than to surrender. The police officers then boarded the Belgia and the crew and seventy reservists were put under close arrest. The Belgia then headed into the Alexandra Dock and the prisoners of war were taken to the Temperance Hall in Dock Street (The Old Capitol Cinema). On Tuesday the 11th of August 1914 the prisoners were put on two tugs the Horace and Lady Tredegar under guard of the Welsh Regiment and taken to Birkenhead for detention. Another ship the S.S. Horst Martina, already in the Alexandra Dock was also arrested, as were all of the German ships in British ports, and the crews transferred to Birkenhead. The Belgia incident was remarkable in that no military were available to assist had things gone wrong and was the only ship to be arrested on the high seas. All this happened within two hours of war being declared and what was even more remarkable was the fact that the borrowed rifles were without ammunition!!

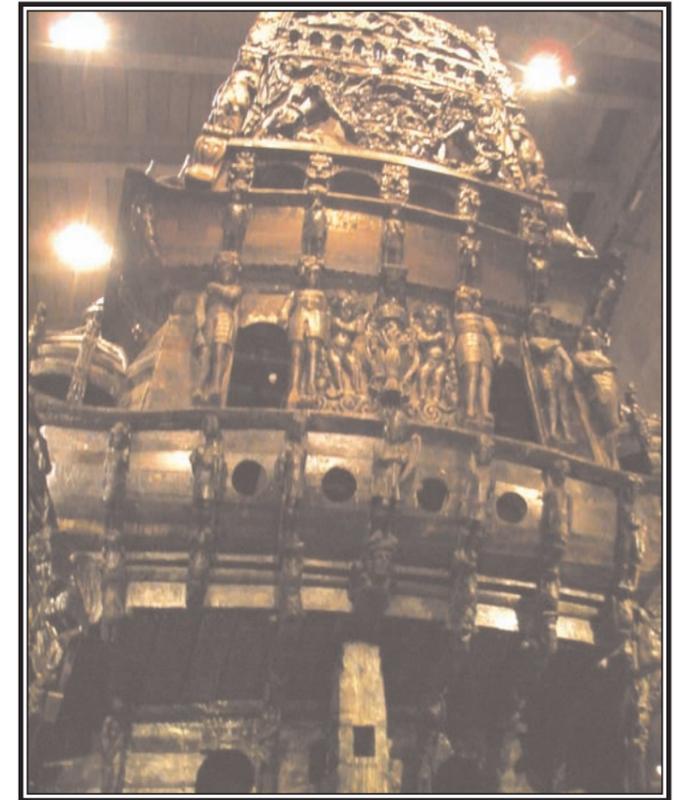
Belgia, as a prize of war, was sold at auction to F.C. Strick

# The Vasa

Of all the salvaged ships on public display, the Vasa in Stockholm must be the most stunning. Indeed, it is Sweden's number 1 tourist attraction and a visit to The Vasa is enough to make a visit to Stockholm well worth while. It also shows what a well presented ship can do for the tourist industry. We were warned the museum could become very crowded, so we made sure we were at the door before opening time, but tourists in Stockholm get moving before 10.00 and an enthusiastic queue had already formed. We were told a visit would take a couple of hours but we spent nearly 5 hours there.

King Gustav II Adolphus's great warship, Vasa, has been magnificently preserved and now rests in a purpose built museum, appropriately by the water. She was built some 180 years later than the Newport Ship, and is considerably larger, being about 69m in length compared to the 35m of the Newport Ship. Vasa was not intended as a trading ship as the Newport Ship appears to have been. Indeed, she was commissioned by the king himself and was designed to be the foremost of Sweden's warships. She carried 64 large guns, had masts over 50ft high and was richly decorated with gilded and brightly painted sculptures. In short, Vasa was meant as a show of power, to impress and to intimidate. The plans survive and even the shipwright is known. No mysteries to be solved there. However, she never had the chance to sail as many miles as the Newport Ship. Her total travelling distance was 1,300 metres before she was caught by a gust of wind, which caused her to capsize and sink on her maiden voyage in 1628. Unlike the Mary Rose disaster, the king was not watching! However, questions had to be asked as to the causes –enquiries into disasters are not a modern bureaucratic bugbear!

Vasa was heading off to war, so she was fully manned and all her guns were in place. Salvage operations, for which an early diving bell was used, were instigated almost immediately in the hopes of recovering the guns. The sailors were on board with the tools of their trades neatly stowed in chests ready for archaeologists to find. Swedish



harbour mud looks just as cloying and dirty as Newport mud. Difficulties in raising the ship were rather different from those besetting the Newport Ship. Vasa had to be raised from the seabed rather than the middle of a riverside building site. The modern Swedish Navy and salvage teams were on hand to help. Conservation techniques were less developed although it was realised that she must not be allowed to dry out and the hull was sprayed with a mixture of water and polyethylene glycol. Only the sculptures and small wooden items could be submerged in vats, equivalent to our tanks.

The result now is a purpose built museum with Vasa taking centre stage with a vengeance – the wow factor has to be experienced. The camera simply cannot capture it. There are displays of artefacts with explanations in English, films, set pieces and computer activities. One of the computer activities requires you to gauge the amount of stores and ballast needed to balance the ship against the weight of the gun decks. A course has to be plotted and the ship then has to be sailed. If you get it wrong, your ship sinks. The shipwright would have appreciated this piece of technology. He clearly had concerns that the Vasa would prove to be top heavy but his only means of testing stability was to have men running from side to side across the deck to see how much the ship would roll. Despite his findings, the shipwright was unable to argue with the King and, as we now know, the ship was indeed top heavy with the result that she sank while still in pristine condition, complete with many artefacts and subsequently providing the 20th century with the opportunity for learning and developing conservation skills benefiting the discoveries of the Mary Rose and of our own Newport Ship.

# LEARNING With the Ship

I'm really pleased to announce that the 'Learning with the Ship' section of the newsletter will now be presented in a slightly different format to normal. From now on it will include sections of news written by the groups and individuals who have been getting involved with the ship project. This may include work by school children and teachers, work placement students and volunteers, or groups working on specific projects. I hope you will enjoy finding out about all of the exciting work currently taking place.

Since Christmas we have been working alongside a huge number of work placement students and volunteers. Their achievements certainly enrich the project and the staff love working alongside them, sharing their skills and knowledge. I am delighted to inform you that Eric Channing, our longest serving volunteer, recently received a letter from the Houses of Parliament congratulating him on his efforts and dedication to the ship project. For those of you who know Eric I am sure you would agree this compliment is richly deserved.

## Work Placement Students

During the last week of February we were joined by four Yr10 students from Hartridge High School. Here is a summary of their time spent at the ship.

We are four work placement students from Hartridge High School. We are in year 10. We all share an interest in archaeology and the varied history of Newport. As well as doing work experience at the ship centre, some of us have also spent time at Tredegar House and Newport Museum and Art Gallery. We have done many exciting and interesting things at the ship, including filming a new information film which will be shown in Newport Museum and at the ship centre. We also interviewed members of staff such as Neil the Education Officer to find out more about the work they do on the ship.

In addition to this we worked on a project with the Friends of the Newport Ship. We were recording their memories and hopes for the future of the Ship by interviewing them. We interviewed Jeff Brooks who is a trustee for the friends. He works very closely with the project. He told us that in the future he would like to see the ship in a purpose built museum. He would like it to be the centre piece and the star attraction. He told us that the ship could be used to bring more tourism to Newport.

We also worked alongside conservation students from Cardiff University. We interviewed one of them. Her name was Deborah Manogler who is from Northern Italy. These are a few of the things she told us about.

What is your name?

Deborah

Where are you from?

North East Italy

What university did you go to?

Cardiff University studying conservation

How did you hear about the Newport ship?

I heard about it as part of my course. I had to go on a summer placement and wanted to work in a museum. I was told about the ship and given the name and address.

What work have you done on the ship?

I'm a conservator which means I help clean the ship timbers by hand. The iron needs to be removed from the wood and there is no other way to do it. It's been a great opportunity and I've learned lots of new things.

Do you enjoy it?

Yes, I very much enjoy it.

Would you recommend other people volunteer with the ship project?

Yes definitely because it is a very good experience, the staff are amazing, very caring people who look after you really well.

What do you think should happen to the ship in the future?

It should be preserved for the future generations to see. It is rare to find so much of the ship preserved. As many people as possible should come and see it.

We have enjoyed a lot of things during our time here, including using and understanding the laser scanner, meeting new people and doing new things. It has been great for us to learn new skills that we could use in our future careers. After our time here we are going to volunteer at the ship project helping out on the open days and any events they need us for.

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## Medieval Garden Project 2009

One of the new projects we are working on is a garden and film project based with a group of young people between the ages of 12-16 at the Helyg Centre in Ringland, Newport. The project began in January and will run until the end of June. Here is a short article written by a member of the group detailing his experiences of the project so far. As he says watch this space for regular updates!

I am part of a group that is working with the Newport Ship Team. We meet every Tuesday afternoon either at their base or at our centre in Ringland.

Before we started we had a meeting to discuss what we could do and came up with the following:-

- We would help with the restoration of the ship
- Produce a graffiti board
- Transform the outdoor area at the Helyg centre into a medieval garden.

At various stages throughout the project we will film our work.

On our first session we visited the ship and were amazed how big it actually is, some of our pupils have worked on cleaning parts of it.

During following sessions we visited the ship and made numerous clay tiles, decorated them with medieval patterns and left them to be fired. These will be put in our garden at a later date.

Once the snow and cold weather disappeared, we started work on the garden. It was back breaking preparing the 4 beds but they immediately looked better. We decided to have one for roses, one for herbs, one for vegetables and one for fruit bushes. So far we have planted the herb bed, put some plants to propagate and planted an apple tree; a

pupil's parent has also donated some fruit trees.

The garden is already taking shape and we continue to work hard, only to be rewarded with Medieval Gingerbread which wasn't very nice at all.

This project, partly funded by 14-19 Learning Pathways and The Splash Art Project is giving us an insight into medieval life and it is exciting to work with 'real-life history'. Watch this space for updates of our work.

## School Service

Demand for our school workshops and resources continue to grow on a monthly basis. To meet demand and to keep interest up we will be launching two new workshops and two new resource boxes. New for the summer term will be a workshop on the Vikings and one on the Tudors. To go with each workshop will be a resource box full of goodies which can be used in the classroom. Although these periods do not fit into that of the ship, there are many similarities and overlapping elements and we hope that by introducing these two new themes, we can enhance children's learning and understanding of the Newport Medieval Ship.

As always, please do contact me if you want any information on the 'Learning with the Ship' service. We really do have something to offer you regardless of ability, knowledge or age. Contact me for information on talks, lectures, visit to the ship or if you would like me to attend a community event.

Many Thanks

Neil Stevenson  
Learning and Access Officer  
01633 215708

