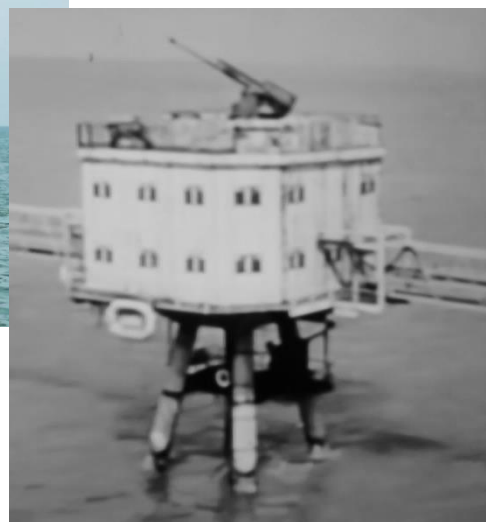




Newsletter No. 123

October 2018



Red Sands Forts
Above photo courtesy of Vernon Hawkes



Red Sands Forts – Photo Courtesy of Graham Whittington

Membership Details

Membership of the Ordnance Society runs from 1st July to 30th June.

Application Forms can be downloaded from the membership section of the Ordnance Society web-site.

Membership Rates – the current rate for individual members is £25. A limited number of student memberships will be available at a cost of £10. Please contact Ian McKenzie for corporate, lifetime and overseas rates.

Renewal Forms are sent out with the AGM papers.

Payment

Payment should be in £ sterling by personal cheque, banker's draft or International Money Order, payable to "The Ordnance Society". Overseas sterling cheques must be drawn on a London bank.

Payment via 'Paypal' may be possible – please e-mail The Ordnance Society for details. ordnance.society@btinternet.com.

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From the Editor – Graham Whittington

Thanks to everyone who sent in articles, photos, comments and queries for this edition of the newsletter and for inclusion in future editions. Please keep them coming. Articles from 'first-time' contributors are particularly welcome – book reviews, visit or interest reports, etc. Things you take for granted may not be known to other members but will be of interest to them.

The next edition will be published in January 2019 – copy needed by 30th November. Please send copy, electronically if possible as a WORD document, to graham.whittington@hotmail.co.uk – contact me for my address if you need to send your copy in paper form. The contributor should ensure that any copyrighted material has permission for use and that the original owner is attributed.

Congratulations to board member Neil Grant on his recent appointment as a trustee of the Royal Armouries. The trustees are responsible for setting the longer term direction for their collections and for expansion of the museum and its audience.

Visit to Tank Museum

I visited the tank museum at Bovington this August – several years after my first visit. The buildings and exhibits were excellent and well put together, and there was plenty to see over two days. **Five stars.**

Unfortunately, the same cannot be said for some of the facilities. The toilets were frankly a disgrace, even at 11.00am in the morning. The catering arrangements were chaotic – one queue for both 'grab and go' and hot food in the main café, tables were not cleared and staff were doing nothing except standing around talking to each other, even the managers. **No stars.**

If you haven't signed up already then you should 'Follow the Ordnance Society'.

Click on the "**Follow the Ordnance Society**" button under "**FOLLOW THE ORDNANCE SOCIETY BY E-MAIL**" in the right-hand column. This ensures that all "NEWS" items will be emailed to you as soon as they appear on the web-site and these will include brief notes about future visits as well as all the other "NEWS" items.

Query from Rodney Brooks - dockyardpirates@gmail.com

I am researching the process of refitting a Royal Navy '74 gun ship around 1800 in Portsmouth for a graphic novel.

I know all the ordnance was removed when the ship went onto Ordinary. I want a description of the removal, maintenance and replacement of the ship's weapons and life on the ordnance depot in Portsmouth.

Did the ship's gunner supervise the refitting? Can you get me started with research sources?

"he loaded a blunderbuss and three horse-pistols, double-charged and double-shotted" - a quote from Jack Aubrey, Patrick O'Brian ...but why don't the gunners double-charge the guns? In fact they are often under-charged when double-shotted.

1 - Saltpetre in China

Sjef Pijls has certainly taken a direct course in seeking early sources of saltpetre in China but there is an easier way.

From mid fifteenth century until recent times, China was largely closed to foreign research with one outstanding exception. Joseph Needham a biochemist was granted almost unlimited access which culminated in the inauguration of the Needham Institute and the publication of his monumental Science and Civilisation in China.

VOL. V. Chemistry and Chemical Technology and Pt. 7. of that volume, Military Technology: The Gunpowder Epic is particularly relevant. Joseph Needham, with the collaboration of Ho Ping-Yu [Ho Peng-Yoke], Lu Gwei-djen and Wang Ling (1987) Contains by far the most authoritative account of saltpetre in China and its many uses.

Fortunately the volume is published on the web and a search for 'Needham Saltpetre' will find it.

For several centuries, England obtained practically all its supplies of saltpetre from India, many thousand tonnes, and sources and extraction are thoroughly documented. A good place to start might be:

EPIC OF SALTPETRE TO GUNPOWDER Arun Kumar Biswas, Indian Journal of History of Science, 40.4 (2005) 539-57 1 also accessible on line.

Kay Smith's lecture to the Society of Antiquaries documents a recent visit to India and shows traditional saltpetre extraction still in use.

<https://www.sal.org.uk/events/2017/01/the-history-of-early-gunpowder/>

On the subject of sodium nitrate deposits; these are associated with sea bird deposits – not surprising as their diet is entirely of marine origin.

Land based animal and plant metabolisms have low sodium content and their decomposition yields the potassium salt.

2 - Cyanide Grenades

Having spent much of my career handling cyanides in significant quantities, I found Peter Mcallister's piece on Japanese grenades fascinating. Hydrogen cyanide was used in WW1 but was released as a gas from cylinders. It was rapidly discontinued as having limited use. In modern military circles, it is considered to disperse so quickly that a cyanide attack will be rapidly followed by troops whereas a persistent nerve agent could be used to effectively render an area sterile and require no further aggressive action.

The information on gas masks is interesting. Hydrogen cyanide is a small molecule and passes unhindered through a normal carbon filter. An additional filter (copper acetate if I remember) is required to remove cyanide. If troops in action were not expecting cyanide, standard masks might have been useless.

I agree that the toxicity of cyanide is generally over-rated but the prospect of carrying into battle glass containers which were actually designed to break easily might encourage me to add them to the list of weapons regularly reported as LIA – lost in action i.e. dumped at the first opportunity!

From Rob Morgan **Live Firing Devices**

My note on the WWI *Luftminenwerfer* of the Austro Hungarian army was something I 'bounced' off my colleague Lyle Hegstead of Olympia. It appears that such 'live-firing' devices are not unknown in the USA, and he sent me a photo of this, a pneumatic mortar used for firing lines (not unlike the old Coastguard devices, obviously).

It looks basic, is made from standard drainpipe, filled by a tyre-pressure system, you can see it at left. The 'one-shot' weapon is fired by turning the wrench on the barrel. Then it has to be closed and the 'tank', which in this case is the whole base, refilled. I understand a range of up to forty or fifty yards can be reached. Intriguing, and probably identical to the procedure used in the WWI mortars.



From Rob Morgan
Unidentified Artillery in Les Invalides Courtyard

If I had not just written a review of Volume 3 of 'Les Canons de la Victoire 1914-1918' edited by General Guy Francois, for this very Newsletter, then the request in the April issue and the suggestions on page 4 of the last issue, in July 2018, might have simply passed me by without a second thought. However, the latter part of this superb French language work, dealing with the astonishing ordnance of the Great War trenches, has a final section, almost an afterthought, which describes, albeit briefly, a handful of weapons which were 'Engins non adoptes', including a couple made originally in Belgium.

The museum example in question bears some significant resemblance to the 'Mortier de 120 T Doyen' shown on page 44 of the work, designed out of experience in the campaigns of 1916, and of which some 700 examples were ordered, but almost certainly not delivered; the order was cancelled due to difficulties with propellant and projectiles - an inference perhaps to gas shells? It isn't identical, but may well be of the same family of designs, another powerful weapon which wasn't adopted for technical reasons.



I think Iain's suggestion of it being another pneumatic device is very close to the mark indeed. A pity the original query didn't provide any specific dimensions; though the book doesn't either, beyond the calibre of '120'. It all goes to add more weight to the simple statement that as Ordnance researchers we simply haven't done much more than scratch the surface of the amazing number of weapons used in the Great War, their deployment, tactics and capabilities.

From Clive Woodley
Chinese supergun fires at 5400mph

A somewhat belated response to the article from Rob Morgan that appeared in the 121st issue of the OSNL - apologies, but as a new life member I decided to read each of the newsletters from the first issue to the current issue to get a good picture of the history of the OS, how it operates, and the key people. Having now completed those, my next task is to read the OSJs.

Rob asks whether it is feasible, is the velocity achievable and what sort of accuracy?

Certainly that velocity is easily achievable. It equates to ~2414m/s which is achievable with laboratory guns firing solid propellant charges, though not current in-service guns.

Such a railgun is feasible. Work has been taking place in both the USA and China for many years on such weapons. The UK used to work on railguns at Kirkcudbright but sadly the UK ceased funding several years ago. At the time the UK was one of the world leaders and collaborating closely with the USA.

Two key problems with railguns are erosion of the barrels and the pulsed power supply. The latter tends to be enormous! Hence the interest in using the weapons aboard ships which, compared with tanks, have much more room. Also navies like to get rid of "nasty" energetic materials such as those that are used in solid propellant charges which can blow up under certain conditions.

There have been several newspaper photographs on the Chinese gun such as those at the following link

<https://www.news.com.au/technology/innovation/china-in-worldfirst-deployment-of-experimental-electromagnetic-rail-supergun-aboard-a-warship/news-story/6aab73b4402e064d41e7b1af4639c5ed>

There is lots of information on the USA railgun such as at the following links

<https://www.popularmechanics.com/military/research/a14106941/us-navy-railgun-may-be-dead/>

<https://gizmodo.com/the-navys-horrifyingly-powerful-electromagnetic-railgun-1820991365>

<https://www.military.com/defensetech/2018/03/09/navy-fully-invested-futuristic-railgun-top-officer-says.html>

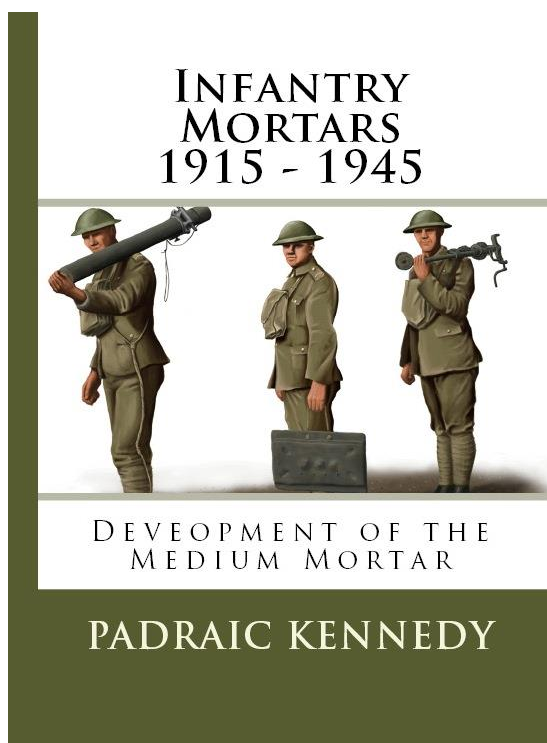
On the question of accuracy, published details are scarce and will almost certainly be classified. Data from about 2001 indicated railguns produced greater dispersion at the target than conventional guns. However, railgun technology has improved substantially since then. It is likely the accuracy for both railguns and conventional guns will be of a similar order. However, there has been work on the development of a hyper velocity projectile (HVP). The HVP is a guided projectile that is intended to be fired from railguns and also more conventional guns. See the article at the link below.

<http://www.businessinsider.com/the-navy-plans-fire-rail-gun-hypervelocity-projectile-2017-7?IR=T>

Book Review – Neil Grant

Infantry Mortars 1915 – 1945; the development of the medium mortar

Padraic Kennedy. Self-published, 130 pages, £22.99



This is a relatively short book – I read it in an evening – and does exactly what it says on the cover, looking at medium mortars (81-82mm) to 1945. It therefore excludes both light mortars (such as the Italian Brixia, the British 2in and the Japanese “knee mortar”) and any of the heavier mortars.

Coverage of anything before the appearance of the Stokes is very brief; there is no mention of earlier British attempts such as the “Toffee Apple” etc, though the Brandt pneumatic mortars are mentioned and illustrated.

The British Stokes and French Brandt are covered in most detail, followed by Soviet and German mortars. Everything else is dismissed as essentially a Brandt clone, which is fair, but worth noting if your interest is (say) US mortars.

The focus is largely on technical aspects of the weapons, and it does this very well – I make no claim to be especially well informed about mortars, but the level of detail here is much higher than most comparable books – well above the equivalent Osprey book, for example.

The coverage of the ammunition for the Stokes and Brandt mortars during WW1 is also excellent; being mostly familiar with WW2 mortars, I hadn't realised that the Stokes was originally firing finless cylindrical bombs which tumbled in flight, and that the classic finned mortar bomb was actually developed by the French.

The focus is very clearly on the weapons, with little space on how mortar sections fit into larger units, or on ancillaries like ammunition packaging. At best, this is given for one nation, rather than all. For example, it tells us that each Soviet battalion included a mortar company with 9x82mm mortars, plus an additional heavy mortar company with 6x120mms at regimental level, but not whether this is typical of British or US practice or indeed whether British practice changed through time. Equally, ammunition packaging is mentioned for British mortars, but not for others, and not illustrated.

The book features a high number of illustrations. Most are either reproduced from original manuals (for sights, fuses etc) or computer drawn images of the weapons and their ammunition, rather than photographs. How you feel about these is very much a matter of taste – they are very well done, and very clear, but some people dislike them, and they lack any of the “context” a battlefield photo might give. As an aside, it seems a pity that the Soviet BM-41 and BM-43 are about the only weapons not illustrated. Given their unusual wheeled design, it would have been more useful to have illustrations of them than multiple images of the extremely conventional BM-37.

Production values are the best I've seen in a self-published book. The text is very widely spaced, and could occasionally be better expressed or organised. However, these are minor problems that don't significantly detract from the book.

ARTILLERY FEST 2018

Saturday 20 October, 1030-1500 - Royal School of Artillery, Larkhill, Wilts. SP4 8QT

A great opportunity to see a small selection of the RA Collection - exhibits include a variety of British Guns and equipment from 15th C to the present day: RA VC recipients display; The Queens Gun and Carriages; Newly acquired Field Marshal Alanbrooke's Collection; a selection of models, flags and pennants, uniforms and medals. Demonstration by the Garrison Artillery Volunteers.

Entry is Free. To add your name to the guest list please send details – attendees names and car registrations/ make/ model and colour to jt@RoyalArtilleryMuseum.com **Please note all guests will require photo ID, Passport or Driving License to enter the RA Barracks at Larkhill.**

From Rob Morgan
Guns of Victory 1914-1918

Or, to be more accurate, '*Les Canons de la Victoire 1914-1918. Tome 3...l'Artillerie de Cote et l'Artillerie de Tranchee.*' . A volume on the series, '*Les Matériels de l'Armée Française*' , edited by General Guy François, and published by 'Histoire & Collections, Paris, September 2010, ISBN; 978-2-35250-161-9. Price 16 €Euros.

I discovered this superb French language volume, which is roughly the size of an 'Osprey' book, and is some 66 pages long, quite by accident. I was trying to unearth a little more detail on the subject of the Austrian WWI pneumatic '*Luftminenwerfer*', used at the *Sasso di Stria* on the Dolomite Front in 1917, and my old friend Geoffrey Hall mentioned that he had recently acquired a book which provided a little information on the French versions. The work sits before me now, and to describe it as magnificent is an understatement.

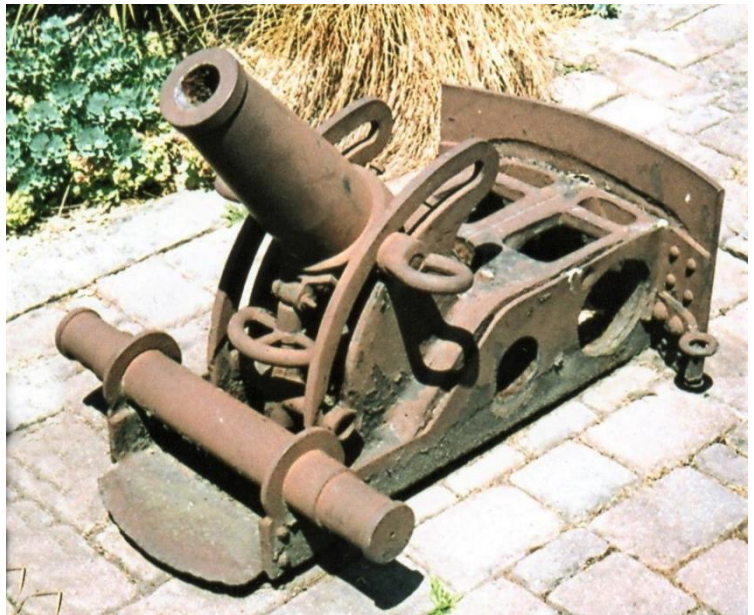
Whenever I'm in a bookshop in France or Brittany, I frequently come upon the splendid publications available in the French language; magazines and journals such as '*Champs de Bataille Thematique*' and '*Armes Militaria*', long-running titles which so often contain articles, photographs and extensive material of interest and use to the ordnance enthusiast. In the case of this particular title, it's one part of three, the others dealing with Field and Heavy artillery, and with Railway Guns. How on earth have these three valuable books escaped notice by the Society's members?

This specific volume deals with just two aspects of French ordnance during the Great War. There are well over a hundred and fifty black and white photographs and several colour plates. The first part, 33 pages, deals with Coastal Defence Artillery. A six page introduction is followed by a description and technical evaluation of over twenty five weapons used actively in the war. From the little 47mm Hotchkiss Mle 1885, to the 30cm 1893 Mortars and the 32cm Canons of 1870-84. A brief historical note, and often some anecdote is provided, along with the characteristics, ranges and limitations of the various forms of ammunition used. A rich source of information.

But for me, part two of this work dealing with artillery, ordnance and oddities which saw action in the warfare of the trenches is a goldmine of material, and on weapons which are rarely considered in British publications! The same format applies, there are no fewer than 37 individual weapons and devices in all are described, each with a photograph or two, most with a fine technical specification chart. It covers, more than adequately, all of those weapons used in the trenches during the war. I can honestly say that I don't think I have ever encountered any of the good quality photographs which litter the text, and not one mortar, gun or

device is without its black and white print of it in action. From the ancient, almost Napoleonic, *Mortier de 15cm Mle 1838*, which proved prone to accidents with improvised projectiles, to the massive *Mortier de 340 T* which was introduced in 1917, but in small numbers.

One mortar in particular interested me, the *Mortier de 58 T No 2*. It featured in a note of mine in this Newsletter several years ago, when I encountered a number of them at War Memorials in Western Brittany, but sadly my query brought no response.



However, the below photos are of another example, a little less complete, as it's missing the heavy back plate, and side 'lug' plates.



This one sits under the Medieval clock tower in the Breton walled city of Dinan (the photo was taken by my friend Ken David) and though the mortar looks small, it threw a truly massive 45kg bomb, one of seven rather varied projectiles. Over 3,300 of them were manufactured from February 1915 on, and interestingly, the *Mortier de 58 T No 2*, served, the text informs us, with the Serb, Greek, and American armies during the course of the war.

The pneumatic weapons, which originally provoked this discovery, are another fascinating aspect of twentieth century ordnance. Manufactured in significant numbers, and popular for their lack of a firing 'signature', the four or five pages the text provides on them is fascinating, and they seem to have been very widely used.

The book ends with a short account of a dozen French and two Belgian weapons which were far rarer than the mass-produced mortars and guns, but which did in fact see service. A pneumatic howitzer of 86mm, of which only 100 were produced, two mortars from the 1830's, and several heavy grenade throwers and a flame thrower are covered. One device, the remarkable *Mortier de 120 T Doyen* is shown with its horse drawn limber, and though it was adopted in 1917 and 700 examples ordered, there's no technical information about what looks like an immersion heater on wheels!

This small book is one of the most useful and interesting ordnance publications dealing with the Great War that I have ever encountered - a must for any OS member with an interest in the Western Front.

From Rob Morgan

Odd Matters

Many thanks to Alastair Fyfe for bringing to my attention the existence of 'The Redan', what appears to be a very useful and valuable journal! It just goes to show the value of reviewing and recording journals and publications of other linked societies which are not common knowledge.

The appearance of a list of 'Technical Publications' with Newsletter No.121 intrigued me. Several titles in the lengthy list seemed familiar to me, though not the 'catalogue' numbers. No length of document is given, so I wondered, are these by any chance the same publications which appeared under the old 'PALLAS ARMATA' banner almost twenty years ago?

Or are these far more substantial publications, perhaps drawing on additional material?

From Rob Morgan
LuftMinenWerfer

I've just reviewed some model figures of the Austro-Hungarian Army of the Great War for a US journal. The pack contains four 'pneumatic' weapons, called collectively 'LuftMinenWerfer', and since I had no idea of what they were I went hunting. These are it seems examples of short lived pneumatic trench mortars, and there were quite a few developed. In 8cm, 10.5cm, 12cm, 15cm and 20cm calibres. Some were made in quite large numbers, of the 12cm M16 for instance, there were almost a thousand, but the 20cm M16 was produced in much smaller numbers, and little more than a score of the 10.5cm saw service it seems. Information on the 8cm version seems very sparse.

Though Wikipedia provided a photograph of a 12cm M16 LuftMinenWerfer still extant at a military museum in Kecel, Hungary. The model in the pack of figures is of a 20cm M16 weapon, if the design is accurate.

The definitive work on these guns is, apparently, M.C.Ortner's 'The Austro-Hungary Artillery from 1867 to 1918. Technology, Organisation and Tactics.' Published by Verlag, 2007; selling at a hefty 99 Euros which is probably why I haven't seen it around. But that English language book is certainly something which would benefit from a review in these august pages!

My questions relate to the performance of the guns. One or two comments suggest that the 10.5cm mortar could fire 500metres, the 12cm around 800metres. One suggestion is that the rate of fire was ridiculously slow. What was the performance of these devices? Given that the terrain was difficult, and ideal for high angle weapons, were they used on the Mountainous Italian Front?

Until this little problem cropped up, I don't think I've ever encountered a photograph of a pneumatic weapon before; yet it seems that the French used 50mm, 60mm, 86mm, and 120mm versions of a pneumatic mortar, and that two examples are to be found in the Royal Museum of Artillery in Brussels, and another at Les Invalides. The Belgians presumably used them too, but did the Americans? They acquired almost everything they had from the French Arsenals, did they use these guns too?

Editor's Note: *There is a mention of the OS Minenwerfer in the AGM minutes – page 20.*

From Graham Whittington

Thames Forts

A recent trip into the Thames Estuary took me close to the remaining two groups of WWII Thames Forts designed by Guy Maunsell – Red Sands and Shimmering Sands. The Red Sands Forts had featured over the summer in two television programmes – Hidden Britain by Drones and Flying over Britain so I had seen drone shots of them from above but although rusting and the worse for wear, these structures were still impressive.



The Maunsell Forts were armed anti-aircraft towers built in the Thames and Mersey estuaries during WWII to be operated as army and navy forts. Three forts were built in the Thames estuary, between May and December 1943 - the Nore, Red Sands and Shivering Sands.



Each fort had seven towers linked by tubular steel catwalks and each tower was built on a reinforced concrete base. Four hollow reinforced concrete legs supported the steel house of two floors, with the military equipment installed on the top deck. Each fort accommodated up to 265 men. They were equipped with MKII 3.7" AA guns with 'Sperry' predictors, searchlights and radar. One of the seven towers was equipped with two Bofors guns. The Thames forts claimed to have shot

down 22 aircraft and 30 V1 flying bombs, and were instrumental in the loss of one U-boat.

After the war the forts were placed on 'care and maintenance'. The guns were removed in 1956 and the forts were later abandoned. Since then they have been used for other activities, including a pirate radio station and a private home, and currently Project Redsand is working towards the restoration of Fort Red Sands to its as-built condition and the installation of a museum.

From Neil Grant

Ordnance Society Fort Nelson Tour



Fort Nelson is one of the chain of “Palmerston Forts” built in the 1860s to defend the vital naval base at Portsmouth against attack from the landward side. The forts were built within artillery range of each other, creating interlocking fields of fire which would prevent troops moving between them. Each fort had a small garrison of regular artillerymen and artillery volunteers, which would have been augmented in wartime by men of the rifle volunteers to provide defence against direct infantry assault.

Fort Nelson was heavily modified to serve as an anti-aircraft ammunition depot during World War 2. It was abandoned in the 1950s, but brought back into use in the 1990s to house the artillery collection of the Royal Armouries.

The special tour for the Ordnance Society started in the education centre, with handling of a variety of small arms and an original Congreve rocket. We then moved on to the conservation centre, looking at how several guns recovered from the sea were being conserved to prevent corrosion after being raised. Two were bronze guns recovered from the wreck of the London, which sank in 1665. The third was an unusual Dutch East India Company “composite” gun, with an iron hooped barrel encased in a bronze outer.

One of the group then got to fire the WW2 era 25 Pdr used as the fort's one o'clock gun – sadly only a black powder blank charge, and without the fun of actually laying it on target – as part of a demonstration. The other weapons demonstrated were reproductions of a medieval iron hoop breech loader and a Roman ballista. Lunch was served in the Victorian officer's quarters, before a walk around the artillery hall, looking at the more modern weapons in the collection; these were complemented by the older black powder weapons in the galleries.

We then had a guided walk around the ramparts – which featured a variety of mounts including Moncrieff disappearing mounts and Haxo casemates – before going down into the tunnels cut into the chalk beneath the fort.

This allowed us to visit the caponiers where 32 pdr smoothbores would have fired canister to sweep the fort's ditches clear of attacking Frenchmen. It also showed how Victorian powder magazines were organised, with "shifting rooms" for workers to change from outdoor clothes to magazine overalls and slippers to prevent any chance of sparks, and lanterns sealed behind glass and serviced from behind via separate "Lamp passages".

Finally, the galleries not only held older artillery pieces, but also displays about Victorian garrison life. Overall, it was an excellent day, and would have been hard to fit much more in.

Note from Nick Hall

The armament was cast iron converted 32 pr smoothbore breechloaders [SBML] firing only case shot. Three motion screw breech, Elswick cup obturation. Introduced c1880. AC Carpenter made missing breeches for us.

As installed on original mountings by me and my team at Fort Nelson. The latest use of these guns was as saluting guns - these examples might have been those at Plymouth. The drill manual was developed using guns issued to Crown Hill Fort, Plymouth and I was glad to arrange the loan of two to the Landmark Trust there many years ago.

From Geoff Smith

Most Secret War, R.V. Jones

During the 1930s the Royal Aircraft Establishment developed an improved method of packing bombs for transport. A crate duly arrived at Farnborough bearing the legend.

Caution. The bombs in this crate are packed in a different manner from that formerly used. Compared with the old method the bombs are now packed upside down and the crate must therefore be opened from the bottom.

To prevent confusion, the bottom has been labelled "Top".

From Rob Morgan

Wonder Weapons of World War I?

This small cutting appeared in 'The Times' lately.

1914
**THE FIRST
WORLD WAR**
1918

ON THIS DAY JUNE 30, 1918

**NOVEL
WAR
DEVICES**

The Inventions Department of the Ministry of Munitions receive almost every day ideas of the most novel kind. All are carefully considered. Some are useful, but almost nine-tenths are wholly impracticable. In an article on the subject, published in the *Ministry of Munitions Journal*, it is said that the following suggestions for dealing with hostile aircraft have been received: the clouds are to be frozen artificially

and guns mounted on them; heavy guns are to be suspended from captive balloons; the moon is to be covered with a big black balloon; aeroplanes are to be armed with scissors or scythes, like Boadicea's chariot; heat rays are to be projected for the purpose of setting Zeppelins on fire. One of the most popular suggestions is to attach a searchlight to an anti-aircraft gun, get the light on the object, and shoot along the beam: but unfortunately the path of a shell is quite different from that of a ray of light. Most elaborate "decoy" schemes are sometimes worked out for the confusion of the enemy, comprising in at least one case sham factories with chimneys and hooters complete. To prevent the polished lines of a railway showing at night the last carriage of the last train, according to another correspondent, was to camouflage them by dribbling blacking as it went along. Other proposals were: a balloon carrying magnets hung on strings to attract the rifles out of men's hands; a shell to contain fleas or other vermin inoculated with disease; a shell with

a man inside it to steer it at the target; the squirting of cement over soldiers so as to petrify them; the sending of snakes into enemy trenches by pneumatic propulsion; the throwing of live-wire cables among advancing infantry by means of rockets. Germany should be attacked in one case by making a "tube" all the way, and in another by employing trained cormorants to fly to Essen and pick out the mortar from Krupp's chimneys.

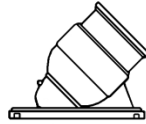
One correspondent sent quite a number of original methods of repelling attacks, including a series of nets spread in front of our lines which could be drawn so as to enmesh the Germans, and a lawnmower as large as a Tank to make mincemeat of them. The purpose of the article is to warn off inventors of this sort, and frequently they are genially argued with.

SIGN UP FOR A WEEKLY EMAIL
WITH EXTRACTS FROM
THE TIMES HISTORY OF THE WAR
WWI.THETIMES.CO.UK

On reading it there appears to be a good deal of humour and nonsense in the ideas sent to the 'Inventions Department' of the Ministry of Munitions by the inventive members of the population. The note focusses on the faintly ludicrous, as is to be expected given the stage of the war in June 1918, and the requirements of security and morale. Freezing clouds, aerial scythes, heat rays and magnetic balloons, yes and trained cormorants, all fall into this category, and I presume that whoever suggested shells with disease carrying fleas hadn't actually served in the trenches!

Some projects mentioned - the decoy factories and synchronizing searchlights and guns crop up in the next war, and one or two are resurrected medieval ideas, like the catapulted snakes! However, the proposal for shells with a man inside to 'guide' them to the target has an unfortunately prophetic hint of the 'Kamikaze' about it. The patriotic fervour causing inventors and the inspired to send in designs or suggestions for weapons continued in the Second World War, and in that case is the subject of several books, Pawle's 'The Secret War' for example is one of the best known. I don't however know of any book dealing with the inventiveness and imagination of WWI's secret engineers, nor have I been able to unearth the article referred to as having been published in the 'Ministry of Munitions Journal'. If only 90% of the ideas were useless, some must have been valuable, and a few even adopted. That's how the tank arrived. Anyone know more?

THE ORDNANCE SOCIETY



Minutes of the AGM

Held on Sunday 23 September 2018 at 'Explosion!'

The Museum of Naval Firepower, Priddy's Hard, Heritage Way, Gosport PO12 4LE,
commencing at 1100 am.

1. Apologies for absence

Board members: Peta Knott [at archaeological conference in USA, will promote OS], Peter Norris, Andrew Tzavaras.

Members: M Gallagher, R Morgan, Terry Young, Roger Emmerson.

2. Minutes of the AGM held in May 2017

3. Matters arising

None. The Minutes were duly approved. Proposed: Graham Whittington;
seconded: Neil Grant.

4. Chairman's Report

Trevor Parker's report:

'Welcome to the Ordnance Society AGM at the Museum of Naval Gunner, 'Explosion', and thank-you for coming along today. I know that there are some members here today who were at our first visit to the then 'Naval Ordnance Museum' in 1991. I'll be going briefly through various events, activities and highlights involving the Society over the past year and let the individual board members expand on their particular areas.

The board has undergone more changes this year with the resignation of the then Journal Editor and Secretary, Douglas McElvogue, and the recent sad passing of our Newsletter printer Bryan Martin. Bryan would often query OS board ideas as well as coming up with some excellent ideas and suggestions of his own. He will be missed. A number of board members were active in looking for a new Journal Editor and earlier this year Nick Hall and I travelled to Oxford to meet up with an American PhD student, Andrew Tzavaras. Andrew is researching early Italian Galley Fleets and has the skills and interests to take over the challenging role and has been co-opted the OS board.

Graham Whittington and I have been talking to our local printing

companies and managed to find a couple of organisations who can, and have, printed the most recent edition of the Newsletter. We are looking at the possibility of obtaining the stock of Bryan's ordnance related publications with a view to disseminating the various books and booklets. Nick Hall has taken over the role of Secretary and Geoff Smith has taken over Nick's previous role as treasurer – both deserve our thanks and appreciation.

The visits that Neil Grant has organised this year have been numerous, very varied in content and well attended; he has also found the time to create quite a number of posts on the Ordnance Society's Facebook page which is greatly increasing our 'likes' and on-line visibility. The Society would like to congratulate Neil on his recent appointment as a Trustee to the Royal Armouries.

Peta Knott has been liaising with the Nautical Archaeology Society and we are discussing with them the possibility of a joint conference on 16/17 Nov 2019 in Portsmouth and have been invited to attend this year's conference on 17/18 Nov in Newport, Wales. She is also looking at laminated Ordnance Society business card for distribution at various events and meetings that individuals might be attending.

The OS will contribute to the English Heritage 'SAVE OUR CANNONS' fund for the preservation of a number of artillery pieces, old and new, in their care at various locations in the UK.

After a considerable time discussing the possibility of making electronic versions of earlier volumes of our Journal available on the web-site, they are finally beginning to be scanned and made available for download. Sincere thanks to Steve Walton in the USA for doing the scanning and conversion to searchable PDF files.

The Ordnance Society's 7.58 cm *Minenwerfer* [German light trench mortar] is now on display at the WWI Remembrance Centre in Portsmouth and secure for the short term.

We didn't make progress with any gun/artillery surveys last year and I hope that we can start this off soon – there are still many guns in many locations that are unrecorded and often unloved. I believe that unless these items are recorded and the information made freely available, then there is a risk that they may be lost.'

Discussions then took place on several topics:

Bryan Martin's reprint stock was remarkable and still listed on his website [DP&G Publishing].

It was agreed that the OS should maintain an interest in the stock-in-hand with a view to selling the reprint material online. Geoff Smith has registered an interest on behalf of OS.

Neil Grant having becoming a Trustee of the Royal Armouries mentioned that he would take a particular interest in Fort Nelson, the Royal Armouries' museum of artillery near Portsmouth.

Trevor Parker observed that more ammunition should be on display there. In preparation for joining with the NAS for its 2019 Conference in Portsmouth, it was hoped that a few members of the OS Board would attend this year's NAS conference in Newport and discuss practicalities with the NAS Cttee there. N Hall intended to be there.

It was agreed that back nos of the OSJ online should offer the free download of 3 articles per person, then they pay or join the Soc. Payment by bank transfer but PayPal being looked into.

Trevor Parker was keen to revive the WWI gun survey – he will have more time soon as his book is nearly finished. This would be a good way of piloting the wider survey of all surviving ordnance in UK.

It was suggested that condition should be included in the record, so that any specimen examples be identified.

5. Treasurer's Report

Geoff Smith introduced his accounts. The finances are healthy at present.

6. Secretary's Report

NH observed that he had tried to fulfil the role helping with running of the Board and dealing with correspondence and any relevant matters. He had spent considerable time in trying to find a suitable new Editor.

7. Membership Secretary's Report

Ian McKenzie reported that we have 166 members, about a third of them Life Members, one Student. Ten new members this year, one in China.

NG asked about getting new members – would members volunteer to attend fairs etc? NH volunteered a day, eg Arms Fair, Soc of Battlefield Guides. Put on agenda for next Board meeting.

8. Journal Editor's Report

Andrew Tzavaras was working on his PhD in Italy, hence his apologies but he had written to TP. NH referred to his letter, summarised below:

The editorial team hoped to have completed the Guns from the Sea volume by now. My sincerest apologies that this has not happened yet.

The delay was partially due to a miscommunication between Steve Walton and myself regarding specific format conventions, citing sources; etc. I didn't realize that there was some confusion here until I reviewed the articles he kindly helped me with. This added extra work before I submitted these edited versions to the authors for approval. Additionally, since I last wrote you, I had a conference in July to prepare for and a research trip to Italy to plan – where I am currently writing this letter. In addition to my usual PhD work and quite frankly, my own mismanagement of time, I have not prioritized the journal the way I should have. I am very sorry, and I will be prioritizing the journal as soon as I return from Italy.

I will be back in the UK for school on October 1st. Kay Smith [a former Editor] has assured me that if I can get the articles edited and "author-approved" by mid-October, we should have a finished Journal before the end of this year. Since these articles have already been "mothballed" for a few years, I plan on essentially giving the authors a 2-week period to respond with their concerns. I will stress to them that changes should only be made if they feel the edits present the information in an inaccurate way. Otherwise, we will proceed with typesetting, printing, etc. I know that this has been a tedious process, and I cannot thank everyone enough for their patience.

A few notes from the editing standpoint:

As is apparent at this point, progress on the journal has been slow, and it will only get worse as my work continues. I recommend that we find two or more volunteers to help Steve and me with the editing.

With that in mind, I do think that our initial idea of establishing a style sheet for the editors and authors is a good idea. This would provide a "checklist" of sorts that would help the volunteer editors know what to look for. Furthermore, it would help the authors know what our expectations are, and hopefully, alleviate any surprises when they are sent edited articles for their approval. I would greatly appreciate Board Members help in establishing what conventions you'd like the journal to use as far as terminology and measurements go. I deal with a bit of artillery studies in my research, but I would defer to your expertise. I'm looking forward to getting a completed journal published before the end of this year. Please feel free to contact me in the meantime with any questions or concerns.'

9. Newsletter Editor's Report

Graham Whittington was glad to receive a variety of interesting articles and notes for the Newsletter. But he would insist now that submissions must be in Word and that all correspondence be by email please. Contributions/feedback were always welcome. Cost of the printed version has been reduced.

10. Publicity Officer's Report

No formal report, since Peta Knott was presently working in Australia. But she had kindly booked the venue for AGM and has been working hard over the year on promoting the Society.

11. Visits' Secretary's Report

To get enough people attending visits, Neil Grant runs joint visits with the Friends of the Tank Museum, Bovington. Only one visit had been cancelled; some popular ones will be repeated next year. Ideas of unusual venues sought. Waltham Abbey was suggested. GW commented that he had much enjoyed the visits he had attended.

12. Election of Members of the Board of Management

All carried *nem con*.

13. Constitutional change (Procedure for Removal of Board Member)

TP introduced an amendment to the Constitution, concerning the event that a Board member be deemed to have behaved in a manner contrary to the aims and objectives of the OS. No replies received against the proposal, but various detailed comments had been made. The amendment was carried *nem con*. GW observed that the constitution needs modernising in any case. He agreed to suggestions that he prepare a draft, consulting his lawyers, for submission to the OSB. Welcomed by all.

15. There was no further business

The Chairman thanked the Board members for their help during the year and the National Museum of the Royal Navy for the use of the venue and concluded the AGM at 12.25 pm.

Notes on talks following OS AGM

OS members were pleased to welcome four guests to the talks.

Rick Hatton, Membership Secretary of the Society of Friends of the Royal Artillery Collection

A brief history of the Royal Artillery Collection and the Royal Artillery Museums of the past.

Rick began with a brief but fascinating history of how the RA collection came into being. He then gave us valuable insights into the present governance, locations and availability of the RA Collection, Library and Archive. While the present situation was not altogether good, the Friends were acting as a valuable lobbying organization and an outline of the plans for a future Royal Artillery Museum at the RA HQ, Larkhill, Wiltshire, were given.

Geoff Smith, OS Treasurer and professional chemist

Saltpetre – The Soul of Gunpowder

The propellant was obviously a vital component of any artillery weapons system. But more study has been devoted to early guns than to their propellant, although that is changing.

Geoff explained the chemistry of early gunpowder and trenchantly dealt with the poor science and misunderstandings that had led to the idea that calcium nitrate could have been used in place of potassium nitrate [saltpetre]. Geoff set out the progressive development of methods and the difficulties of producing sufficiently pure saltpetre in sufficient quantities as demand increased. The full paper will be published eventually in the OSJ.

Nick Hall, OS Secretary. Curator Emeritus Royal Armouries [worked at Fort Nelson for many years]

Deer Shooting with a Difference

The research firing trial of an early nature of breech-loading gun but using modern gunpowder was discussed. This was at the request of a postgraduate student and her tutor at Bournemouth University, her subject being battlefield injuries in early warfare. The use of freshly killed deer carcasses was considered to be an acceptable approximation to the human body. The gun selected was the replica of a circa 1500 wrought iron breech loading gun known as a fowler.

Unusually, this trial was conducted at Fort Nelson – usually an offsite range was used – and presented several difficulties, including obtaining suitably sized iron shot and indeed, hitting the target. Reference was made to an earlier trial with the same gun at Bosworth for the Time Team program on the battle. The deer trial was successful and Bournemouth Hospital scanned the deer carcass to reveal the skeletal damage as well as the very obvious flesh injuries. The student obtained a distinction.

Trevor Parker, OS Chairman and expert on fuzes, his book covering the subject (An Illustrated Technical Guide to British WW1 Fuzes) is forthcoming.

Artillery Fuzes for Trench Warfare in WWI

Trevor gave a brief account of trench warfare and how the difficulties of attacking and defending trenches gave rise to a range of new weapons, some of which were developed at the Front.

Mortars became the weapon of choice but initially there were very crude weapons. The design of fuzes was particularly difficult. Existing designs for artillery relied on the high acceleration and spin of the projectiles used in guns and howitzers; neither characteristics present in mortars with their low velocity and usually no spin. Many fuzes were modifications, with varying success, of existing patterns. New designs were produced but many were quickly superseded and have left us with very little information. Trevor set out this complicated story with great clarity.



NAS Conference - 17th - 18th November 2018

Featuring presentations from a range of professional and amateur archaeologists, the NAS Annual Conference provides an opportunity to discuss research, review the archaeological activities of members, exchange ideas on encouraging access to our shared heritage, and network with friends and colleagues from the UK and abroad.

The NAS Conference

An important international event in the world of nautical archaeology, the NAS always secures a range of internationally renowned speakers who focus their talks on maritime and nautical archaeology around the world.

There is also a large exhibitors' area full of a number of organisations that come along as exhibitors during the conference. For the last few years, the NAS has held a poster session which has exhibited a range of projects and research from shipbuilding to intertidal archaeology, from as far as Yemen and as close as the River Thames. The conference also normally sees the presentation of the annual Adopt-A-Wreck Award. There is also an annual raffle with the prizes drawn at the end of the event. Finally we like to arrange a special excursion held as part of the conference.

2018 NAS Conference will be held in Newport, Wales in partnership with the Friends of the Newport Ship on the 17th-18th November 2018.

The Nautical Archaeology Society and the Friends of the Newport Ship are excited to present a range of papers for their joint conference taking place in November 2018. The conference will present research in nautical and maritime archaeology, specifically exploring the theme of how current projects exploring our maritime past are helping to secure it for the future. The 2018 conference will also host the first MSDS Marine Awards being presented on the Saturday.



Naval Dockyards Society

CALL FOR PAPERS

**Conference: Saturday 30 March 2019 National Maritime Museum,
Greenwich**

'We stand on guard for thee.'*

Dockyards and Naval Bases in North America, the Atlantic and the Caribbean

This one-day conference will examine the role of naval bases in North America, the Atlantic and the Caribbean. Some suggested themes follow but applications are invited on new research or a new interpretation of any related topic.

Were bases built to defend colonies, to control colonies, or to act as springboards for attacking the enemy? How useful were bases in the 17th–20th centuries? Some bases expanded in the world wars. How much was this for local defence and how much to defend convoys?

Naval bases developed over time: Havana Cuba, Port Royal Jamaica, Bermuda, English Harbour Antigua, Anguilla Leeward Islands, Fort St Louis Martinique, Guadeloupe, Caracas Venezuela, Curaçao Lesser Antilles, Louisbourg, Quebec, Esquimalt, Annapolis, Halifax, Brooklyn, Newport Rhode Island, Washington, Philadelphia.

How did national bases differ? How developed were they? How were they organised? What was the financial burden to the home country? How dependent upon their hinterland were they? To what extent did they develop their own operating practices? How have their heritage opportunities been developed?

*Chorus of 'O Canada', Canadian national anthem, written 1880. Its sentiment could represent that of any naval base for its territory.

If your proposal is accepted, the NDS will pay standard UK travel expenses (not international flights), your conference fee and lunch, publish it in our *Transactions* and give you a complimentary copy. Your talk will be 20-40 minutes. The published paper will be 6–10K words long, required three months after the Conference for editing. **Please send your title and 300-word synopsis (and any queries) by 30 October 2018 to: Dr Ann Coats, avcoatsndschair@gmail.com**

Web: <https://navaldockyards.org/>

Facebook: Naval Dockyards Society