Society Members' Bulletin

Rolls Royce backs Bloodhound SSC

Picture © Siemens

Has 'Star Wars' technology finally arrived at sea?

Date for the Diary:
HMS Antrim Association Reunion: 11th to 13th October 2013 at Queens Hotel, Chester

Current RNEBS.co.uk website UK ranking: 1,030,248th - last issue: 1,030,428th

September 2013
Issue 7

Royal Naval Engineers Benevolent Society
Founded in 1872

Society Members' Bulletin

Issue 7 - September 2013

Welcome to this seventh issue of the Bulletin and I hope you enjoy the articles and information included within.

You will also be receiving a 28-page special supplementary edition Bulletin (issue 8) about HMS Courageous. If any of you run a reunion club and would like to have your particular ship or class of ships given the "supplementary special" treatment then please contact me via email and we can discuss how we can help you publicise your interest to other society members. However please be prepared to submit a substantial amount of unpublished material and loads of photographs.

The society is proud to be sponsoring its second event in HMS Sultan, a presentation of the supersonic Bloodhound SSC, planned for early October, so please make every effort to attend as you will be glad you did. More details on page 18.

Congratulations to our many winners of the Captain Marrack and Chatham Memorial Fund prizes. It is important that we celebrate the success of our up and coming engineers and we will continue to fund these prizes despite the very low financial returns on our charity accounts.

Society finances are in good shape and the trustees together with the Managing Secretary review account details at regular intervals and aim to get the best interest rates wherever they can be obtained.

Regards

Mark Stevens

Editor, Society Members' Bulletin

Articles and correspondence submitted for publication and communications relating to advertising etc., should be addressed to:

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Rolls Royce Power for HMS Queen Elizabeth

HMS Queen Elizabeth's two 33-tonne Ni-Al propellers are almost complete. They are among the few components to be built overseas by Rolls Royce's Kristinehamn factory in Sweden. The global power systems company, has completed two significant milestones for the Royal Navy's new aircraft carriers, Queen Elizabeth and Prince of Wales, with completion of the first propeller and the successful testing of the vessels' first MT30 gas turbine.

The propeller, measuring almost seven metres in diameter and weighing 33 tonnes, has completed acceptance tests. The Rolls Royce 'Kamewa' Adjustable Bolted Propeller (ABP) is manufactured from nickel aluminium bronze and features five blades mounted on a central hub – there will be two on each of the aircraft carriers. Rolls Royce will also be supplying the shaft lines and the Michell line shaft bearings that will connect the MT30 gas turbines to the propellers each of which will develop 50,000 hp.

The adjustable bolted propeller allows the most efficient blade matching for optimum efficiency, while simplifying the installation process. The Kamewa range of ABP is based on a hollow hub with blades bolted to it from the inside. A unique feature is the method of bolting the blades to the hub using simple hand tools. In comparison to conventional monobloc fixed pitch propellers the ABP has higher quality blade machining and reduced overall weight, which give easier shipment, handling and mounting. The slotted holes on the hub allow the blade pitch angle to be conveniently adjusted at commissioning, or in service to compensate for long-term variations in hull resistance. Individual blades can be replaced without dry-docking, and only spare blades have to be stocked rather than a complete monobloc propeller (information courtesy of Rolls Royce, 2013).

General Secretary's Report

By Cliff Fiander

There has been some progress on the proposals outlined in the last news letter:

It has been agreed with CSO(E) that the Society will sponsor an annual award for engineering excellence under the provisional title of "Safety through Engineering". The award will take the form of a £500 prize awarded to the person or group who demonstrate the most significant contribution to safer operating through engineering. The intention is that judging of submissions will be carried out by Fleet Engineering staff to achieve a short list with the winner being selected in association with the Society.

It would be fitting for the award to be part of an annual event attended by the Society and Royal Navy guests and it had been suggested that a suitable event could be one of the professional institutions annual dinners. Attendance at such an event however would incur significant costs to the Society and might possibly overshadow the award itself and so the search for a suitable venue and event continues.

Mark Stevens and I met with Commander Tim Stoneman editor of The Naval Engineer (TNE) the official service publication for naval engineering and the successor to the Review of Naval Engineering and the Journal of Naval Engineering. We discussed what contribution the Society could make to that publication and agreed that articles of sufficient merit would be published with an acknowledgement of the Society and, of course, the author.

TNE is published quarterly and the Internet version of the current unrestricted issue is available on the RN website and can be accessed through the Naval Publications webpage at: http://www.royalnavy.mod.uk/News-and-Events/Reference-Library/Naval-Publications.

I found it a most interesting read and one that was made all the more enjoyable by the inclusion of an occasional Tugg cartoon. I am sure there are any number of members with the engineering knowledge and experience together with the writing skills needed to produce an interesting and erudite article for the Bulletin and TNE. An article that highlights the benefits to the RN of the engineering knowledge and capabilities of the traditionally trained artificer would be most welcome.

Elsewhere in the Bulletin the Annual RNEBS Presentation at HMS Sultan is advertised. May I ask anyone who wishes to attend the presentation to provide me with their name and address so that I can arrange for them to be placed on the access list for HMS Sultan.

And finally, a view of the Victorian Navy in which much is still recognisable; in particular the men. I was interested in the Royal Marine's duties mentioned in paragraph 7 and wondered if we may be missing something in the modern Navy.

Extracts from A Gun Room Ditty Box by G Stewart Bowles

(Short Stories and poems about the Royal Navy circa 1898)

Below There!

"Steam for full speed by 8 a.m."

- **Captain's Order Book**.

A BLUE steam-hot haze, through which the beams of a few staring electric bulbs struggle but dimly; the steady hiss of hot vapour from afar off ; the solid ticking of the clock over the log-desk ; the sound of shuffling boots on hollow plating; the occasional voices of men

muttering in the gloom; and the vast looming form of the monster engine in whose mighty den we stand.

It is 5 a.m., and very cold on deck. The Midshipman of the morning watch thoughtfully paces the upper-deck battery in overcoat and sea-boots, reflecting over his triumphs and the sorrows of the sea. Only three short hours ago the nicest girl in the world had asked him to take her in to supper, and had there requested mournfully and for the last time that he should not go away and leave her. And now, alas! here he is, about to leave for good. She had been dressed, he remembers it had been a fancy ball-to imitate a poppy, which she had done, he thought, with huge success ; and her long hair had streamed excellently and delightfully down her back. He walks up to the battery door, the champagne and chicken still tasting in his mouth, and stares sadly up at the great yellow funnels which stand abreast like huge monuments pointing to the sky ; and as he looks a lump of black and heavy smoke rolls suddenly from their tops as an omen of approaching departure. It widens, rises, and slowly disappears before his eyes. Turning sorrowfully away, he resumes his lonely march. Presently the officer of the watch appears, and they walk together, comparing dance notes in low voices under the lee of the big after-barbette.

A Quartermaster stands at the silent gangway, and two bare-footed signalmen keep their everlasting dogged watch above. The fore-bridge sentry is swinging his arms for warmth, leaning his rifle temporarily against the chart-house door ; but beyond this the ship is still as death. Seven hundred souls asleep, and the monster Fleet around all dozing on the dark water - no move, no sound. Our Quartermaster yawns and walks to the ship's side, rolling his quid. How strange is this great hush! The Fleet seems dead. But under this pleasant restfulness and silence there lurks a life far down and hidden in the iron depths below, but still a life - compared mechanically to which the life of man is but as the life of a slug to a racehorse - a tearing, thrilling, throbbing energy, which in its monster strength nearly spoils imagination. Slumbering in each of these steel leviathans lies the pent-up energy of all the cavalry in India, with mules and stores thrown in; and not disposed, like the rush of an army, loosely or in ragged parts, not spread in helpless units over hopeless miles, not open to panic or capable of fear, but certain, clean and absolute - vast, contained, applied. And even as we watch now in the chill morning, that force is rising in the long steel arteries and slowly trembling through the huge frames, and waking from its harbour sleep to drive the fourteen-thousand ton cities forth again to sea like the feathers that they are. For this morning at 8 a.m. the orders are to weigh.

And already the blackened smoke rolls quicker from the funnels, fed from the four great stokeholds below. In each of these are men, black from head to foot, hard at it with pick and hammer and shovel, waking up the fires. In one corner some are scratching coal out of the bunker doors and loading it on trollies, which others haul with a thundering roar across the plating to the furnace doors and tip up sprawling on the plates in front, ready for the specialists who work the fires. These have been lighted long ago, and now simply need caring for and feeding. There are sixteen fires in this one stoke-hold, and each must be kept clean and blazing for the next three days and nights of steaming, watched and tended with loving care hour by hour and day by day till the welcome gongs ring down again from the bridges, and the anchors rattle from the cat-heads in some new harbour across another sea.

The door of the farthest fire is thrown open, and a splendid glare sweeps the black iron walls, showing up the implements all slung overhead, the pitchy openings to the bunkers, and the grim, iron faces of the blackened men sweating in the dust and moil. And then the stoker of that fire, standing a little back, sends shovel after shovelful of coal flying cleanly through the little opening and landing in appointed places round and behind the fire. Nothing drops in the middle, nothing hits the side of the little oval door ; but with splendid straight

strokes from the shoulder he drives each helping clean into its place with absolute certainty and skill. Stopping an instant, he peers his black devil face into the flaming six-foot horror of the fire, then wraps a rag round hand and shovel, clears the blazing ashes from the mouth, and clangs the door again across the hole. The trollies rattle to and fro, and a man slides, boots first, from a bunker at the other end shining black all over, his hair glistening with tiny particles, literally soaked in coal-dust. He has been in there for half an hour. Steadying himself a minute, he walks to the air-trunk and breathes hard at the pumped-down air, spitting to clear his throat.

The needles of the gauges above the furnaces move slowly round as the heat pours in to the hissing water, and the twin monsters in the engine rooms behind are warming in the haze. All round their huge joints and limbs crawl, ant-like, men with oil-cans, feeling, tapping, oiling, easing, and sweating in the cruel heat, while on the platform by the log-desk is the Engineer of the Watch in shirt-sleeves, humming a little tune and rolling a cigarette. On deck the morning is cold enough, he knows, but there is no need for overcoats down here. Slowly finishing his cigarette, he climbs up to the little platform that runs round the tops of the cylinders to see that the indicators are ready. Here the heat is worst of all. It shimmers off the creature's huge back-bone and up through the grinning bars of the armoured hatches - which remind men that the engine-room is a death-trap in war, cut off from light and air for the safety of the rest - and so away to the light above. When the Victoria went down, those on deck at least saw the worst, but below her men stood silently at their posts by fire and can and lever, facing out with fierce anxiety the death they might not see.

Now the Engineer finishes his tour round the cylinder tops, and comes down again to the starting-platform, where he leans and watches in silence. Presently a marine brings him down a cup of cocoa, and he drinks it contentedly in long gulps with one eye on his gauges. The pressure is slowly rising, for our friends in the stoke-holds do not work in vain. Gradually the great engine-beast is coming into life and strength for its work of the next three days under their plying shovels. The smoke pours from twenty funnels now in solid, steady lines round the Fleet, and the Midshipman of the Watch, ankle-deep in sand and water above, curses softly in the rosy dawn, which, rising over the hills ashore, marks the sleeping-place of his lady of the dance.

Slowly, slowly breaks the day, and the hands are washing decks in the grey light; slowly and surely move the pressure needles round the dials below ; and ever round and round go the careful artificers, watching, feeling, noting. Steadily grows the life in each huge monster, until at last the engines stand warmed through and ready, waiting only for the breath of the roaring steam to start them into being.

At half-past seven the Chief comes down, a big man in every sense, stepping neatly down the spidery steel ladders. He meets the little Engineer at the bottom, and they stroll together round the vast kingdom of rods and links and pipes in earnest conversation for two minutes - after which the great man opens his coat, wipes his hands with a piece of waste cotton, steps back to the starting platform, and seems content.

Presently a sharp whistle calls from the clustered voice-tubes overhead, and immediately an ominous mighty hissing answers in one corner, filling the whole place. Then, before we understand why, with a sudden heave and roar the great beast moves-but only just-turns once round and once back, groans, hisses, and is still. This is the little Engineer of the Watch seeing all correct, cigarette in mouth. The other monster next door - for we have twin screws here - moves as well, and the whirring bells ring up " Ready " to the bridges high above. Then, indeed, he throws away his cigarette-stump, and, walking to the platform, stands ready by the telegraph for orders. Above his head is the row of glittering gauges, and

all around are wheels and rods and levers in bunches at his hand. The mist has gone now; the time has come, and the great engine stands out in all its triple strength ready to be played upon like an organ by the little man beneath it.

Verily, if man be but small, his works are sometimes nearly great.

For to ! the gongs behind the telegraph ring out, in answer to the order of the Master-Brain above; the little man on the platform swings a wheel and taps a lever, and with a great rocking heave which shakes the ship from stem to stern the mighty pistons thunder down their strokes in certain, perfect strength, the cranks turn cleanly in their dark pits beneath, the thrust in its gloomy passage home, right aft, takes up the fearsome strain, and the ship moves up to her place in the Fleet as if of her own free will and knowledge.

In five minutes more the Fleet is formed, and we are dancing out to sea in line ahead. The morning mists clear off the little capes and islands at the harbour mouth as we thunder past, the sun rises bright and clear in the blue sky above, and another day of health and vigour opens through the Fleet. Our little world is humming again with wonted life and strength.

Only a certain tired Midshipman at the starboard telegraphs on the fore-bridge looks gloomily at the flying shore, so soon to disappear for good, and, ringing down the quick orders for increased speed below, confides mournfully to the Captain's doggie* that all is over, for his heart is " on the beach"!

*Midshipman aide-de-camp.

RNEBS Memorabilia

(Items displayed on the following page)

The Society Note Book is now available to members for £6.10 to include postage and packaging. The note book is similar to the Moleskine Plain Pocket Notebook (equivalent cost £7.30 + P&P from Amazon) and, measuring 142mm x 93mm x 14mm, it will fit neatly into an overall or inside jacket pocket and, if kept secured with the elastic band, will probably protect the information it contains should it ever fall into the bilge.

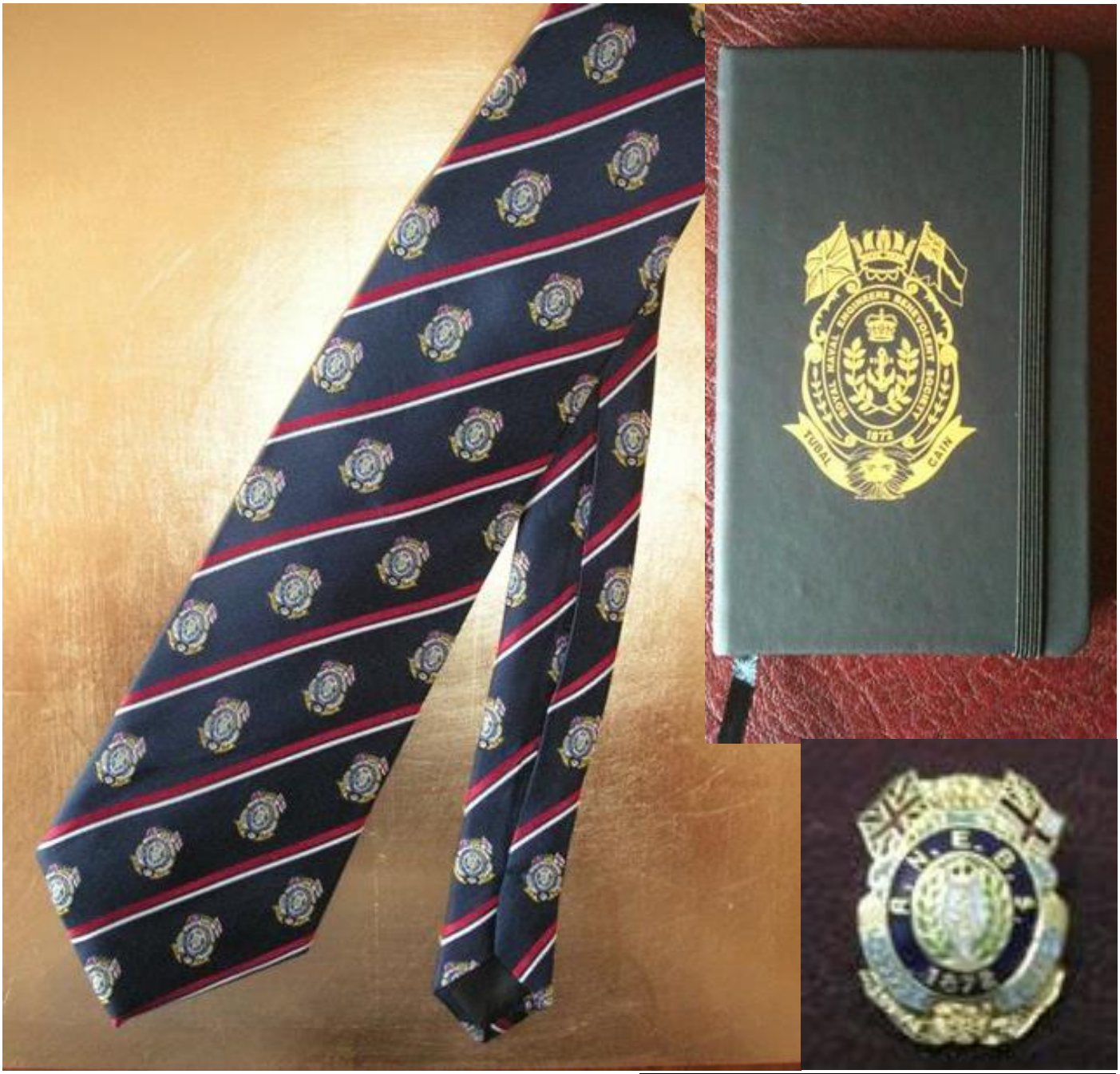
The Society Tie, in woven silk, is also available to members for £15.50 to include postage and packaging. This is a unique opportunity to own a classically elegant tie that may be worn on any occasion by fewer than 2000 making it more exclusive than almost all service, branch and regimental ties.

Also available are **Society Lapel Pinnets**, these allow those who know to be aware of your membership, and can be purchased at a cost of £2.50 to include postage and packaging or, one will be provided free when both a note book and tie are purchased together.

To obtain any of the foregoing please send a cheque made out to the Royal Naval Engineers' Benevolent Society together with your name and address to:

The General Secretary
Royal Naval Engineers' Benevolent Society
33 Goldfinch Road
Melksham
Wiltshire SN12 7FL

NB: Please allow 28 days for delivery



Advance Notification of Events

From time to time it would be good to advertise certain events to Society members but as I can only produce two Bulletins per year, most people only get to know of these events once the publication hits the doormat or if they look on the website http://www.rnebs.co.uk/ .

However, if we had more email addresses, then we could dispatch messages on an occasional basis to advertise or remind you of events that we think you would be interested in attending.

So this is a plea for more of you to send us your email addresses to allow us to communicate with you more easily and for you to notify us of any changes to your postal or email addresses.

Subscriptions

Just a quick reminder chaps to inform you all that benefits are paid according to your subscription rates. If you are only paying £10, £5 or even only £3, your beneficiary will get no more that a fraction of the full benefits available.

To get the highest benefit you should update your bankers orders to the current rate of £20 per annum.

Please let the Managing Secretary know if you changing your payment details using the postal address or email address on page 2 of this Bulletin.

The Annual Accounts

ROYAL NAVAL ENGINEERS' BENEVOLENT SOCIETY

Receipts and Payments Accounts for the Year Ended 31/03/2013

RECEIPTS.		2012	2013
Contributions, less refunds to members accounts:-		15,779	16,301
Rents 113 North Hill, Plymouth:- (incl Agency Fees)		17,100	15,816
Savings a/c interest:-	Term Investment Bonds / Building Society:-	20,874	21,994
	Barclays Bank, Business a/c & Bond:-	526	1,258
	Coventry / Poppy Bond 2013	0	1,120
Insurance Premium Recovery:-		410	424
Donations:-		200	0
	Total Income:-	54,890	56,914
PAYMENTS.			
Review Account:-		500	0
NER and Newsletters Production, Printing and Postage		4,878	5,372
Managing Secretary's Expenses:-		701	619
Managing Secretary's Salary:-		4,800	4,800
Assistant Man Sec's Expenses:-		0	178
Assistant Man Sec's Salary:-		0	650
Executive Council Expenses:-		1,655	1,797
General Secretary's Honorarium & Expenses:-		1,138	2,425
Property Repair, Maintain & Furnish:- 113 North Hill Plymouth:-		5,813	13,023
Agents Fees, New Lets & Inspections:- (Incl VAT).		1,152	1,563
Insurance Premiums:-		1,025	1,199
Rates: Business & Water (& Elec):-		904	956
Death / Invaliding Benefits / Retiring Bonus:-		3,670	6,530
Accountants / Auditors:-		844	964
Income Tax:-		128	572
Recruiting Expenses (140 year Anniversary Dinner):-		609	1,029
Capital Expenditure		0	350
Office Eqpt, Hardware / Software / Maintenance:		528	861
Donations (& Prizes):-		100	300
Bank Charges:-		0	0
Solicitors Fees:- (lease renewal, land search, member services, etc.)		0	0
Outstanding Debit / Credit:-		0	0
	Total Expenditure: -	28,444	43,187
	Income brought down: -	54,890	56,914
	Profit / Loss: -	**26,446**	**13,727**
Principality B.Soc. Bond, 5yrs @ 3.75% (to Nov 2016)		199,809	199,809
Principality B.Soc. Bond, 5yrs @ 5.00% (to Jan 2015)		400,000	400,000
Coventry B.Soc. Poppy Bond (bought 2011):-		40,000	40,000
9th Issue Index Linked National Savings Certificate:-		10,000	10,000
Barclays Treasury Deposit (Short Term Bond):-		75,000	0
Barclays Bank, Business Saver Account:-		25,697	116,500
Barclays Bank, Current Account (Subs):-		1,683	377
Barclays Bank, Current Account (Rent):-		1,091	372
Cash In Hand:-		4	3
	Total Accumulated Funds: -	753,283	767,060
	Creditor/Debitor	0	50
	Profit / Loss: -	**26,446**	**13,727**
Property: 113 North Hill (as Valued Dec 03):-		240,000	240,000

Accountant: Sheppards, Plymouth. Auditors: Mr T Worsfold & Mr R Lampen

President: Mr D Woollard, Plymouth Section. Managing Secretary: Mr C C Heaver.

The RNEBS Executive Council 2013

The members of the RNEBS Executive Council for 2013 are from left to right, standing and seated:

Derek Fletcher - Managing Secretary, Steve Woodford - Portsmouth Rep, Rod Lampen - Society Trustee / Auditor, Tony Worsfold - Society Trustee / Auditor

George Else - Website and Database Manager, Mark Stevens - President, Society Trustee and Bulletin Editor, Chris Heaver - Vice President and Assistant Managing Secretary, Cliff Fiander - General Secretary

Professional recognition?

Does it really matter and do you get value for money just to have letters after your name?

For those of you who are about to join an institution such as the Instutute of Engineering and Technology (IET), the Instutution of Mechanical Engineers (IMechE), the Nuclear Instutute (NI), the Association of Project managers (APM) or similar, you need to consider the benefits you will get from membership.

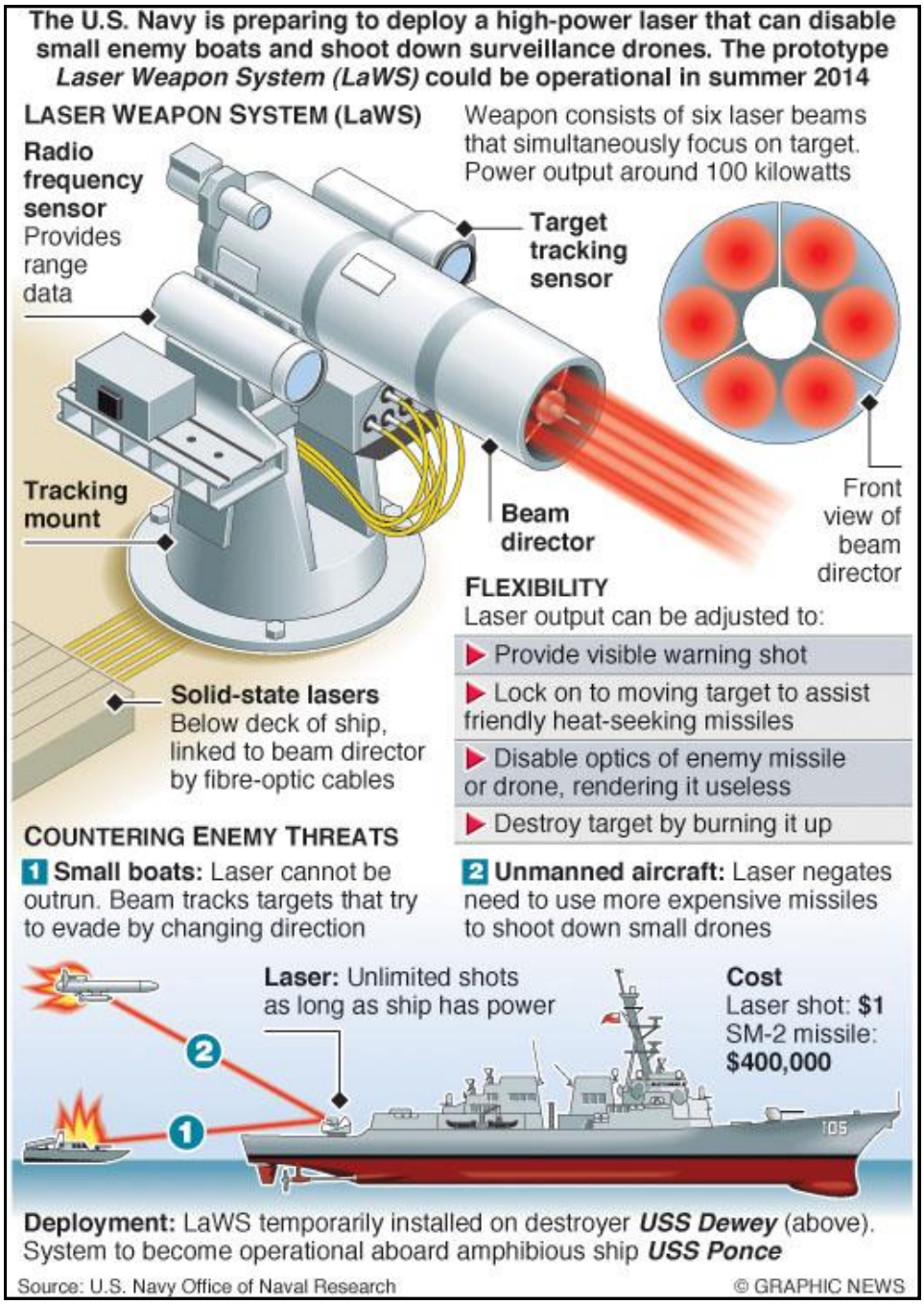
I would be interested to hear from members about where they think it is beneficial and where it has made no difference at all. Does your job require you to be a member of an institute? Did it affect your chances of getting the job and does it affect your ability to do the job? Answers to the usual address please.

US Navy to deploy Laser Weapons

The U.S. Navy has announced that it will deploy a solid-state laser weapon for the first time on one of its ships, the USS Ponce. The laser could be capable of shooting down drones and disabling vessels. Clearly excited at the prospect, Peter Morrison at the Office of Naval Research's Solid-State Laser Technology Maturation Program, is reported as saying, "The future is here".

Since the laser runs on electricity, it can fire as long as there is power. With parallel advances in solar panel technology, a boat out at sea might conceivably never run out of laser-firing power. Although it cost approx. $40m to develop, it is estimated that its operation cost is less than $1 dollar per shot of directed energy.

'Although improvements to high-power laser combining, system efficiency and beam propagation through the atmosphere at large stand-off distances are still required before laser weapons achieve true military utility, the technology is advancing rapidly, and is expected to yield a variety of options not previously enjoyed: from non-lethal disabling and deterrence all the way through to target destruction'. (source: optics.org)



Advantages:

- Travels at speed of light
- Not affected by gravity
- Very small active area
- Limitless ammunition
- No recoil
- Long range
- Unaffected by wind
- Produce no sound
- Can be used discreetly
- Cheap to operate
- Solid state technology
- Can be used in lethal or non-lethal modes
- Ultra precise targeting
- Sea and land based

Disadvantages:

- Requires power source
- Subject to 'blooming'
- Absorbed by rain, snow, fog, dust
- Line-of-sight only
- Costly to build
- Difficult to maintain
- Not air based

THE ROYAL NAVAL ENGINEERS' BENEVOLENT SOCIETY
IT'S ORIGINS, AIMS AND THE WAY AHEAD

(Extracted from a pamphlet written some years ago— i.e. not current values)

In 1868 Engine Room Artificers were introduced into the Royal Navy and, at that time, were the only naval Artificers. Shipwrights were not then classed as Artificers. Although ERA's entered directly as CPO's they found their living conditions primitive and inferior to that provided for other senior rates. Other naval personnel were hostile towards them and endeavored to demean their engineering status. There was no provision for the widows of those who died in service or any assistance for those who became invalided from the service. There was no prospect of advancement beyond the rating of ERA.

In 1872 this Society was formed and set itself the task of improving the conditions and prospects of its members and establishing a system of contributions and benefits to aid those who became the victims of misfortune. It aimed to build up esprit by an exchange of experience and an interchange of ideas, to encourage all of its members to maintain the highest possible standards of craftsmanship and technical knowledge. This would form the Artificers into a body who, by proving their worth, would become respected and valued as a loyal and highly important integral part of the Royal Navy. This, it was assumed, would lead them to improved conditions, treatment and prospects within the service.

The Society was instrumental, using various means, including the national and engineering press, associated Trades Unions, MP's and other influential persons, in obtaining considerable improvements in the conditions of service. These included separate messes for ERA's, with mess men provided, and the introduction of Chief ERA's who were able to take charge of the entire machinery of smaller ships. By the end of the 19th century, the Warrant rank was opened to the Branch by examination, which led to Commissioned rank for some senior WO's or Artificer Engineers as they were first called. This was followed by the Mate (E) Scheme, which really opened the way for Artificers to enter the wardroom, though it was not until after the Second World War that any great volume of Engineer Officers emanated from the lower deck.

In 1951 the Society started the campaign for the re-introduction of the Warrant Officer into the R.N. and led that campaign for 20 years.

The Society has always been at the forefront of progress in the R.N. It provided much of the leadership for the Jerram Committee at the end of World War I which set the pay and conditions within the Royal Navy for the ensuing two decades.

The achievements of the RNEBS over its 117 years of existence are now taken for granted, but most were gained only after years of campaigning. That it is now possible for an ex-apprentice to reach the rank of Rear Admiral, and several have already attained this rank, is due in large measure to the persistent effort of the Society. Very many have reached Captain and Commander rank because of that effort.

As other types of Artificers were introduced into the Navy they took over the same privileges and conditions which had been achieved for ERA's and have continued to share in every benefit which the Society has been able to win. Since its inception in 1872 the Society had restricted its membership to ERA's and those promoted therefrom. In July 1900 it was decided to open the membership to all Artificers and those promoted therefrom in the belief that as all Artificers were, by then, sharing a similar training, largely messing together and encountering similar problems, there was little which could be done on behalf of the ERA's which did not similarly affect all other Artificers. It was only fair, therefore, that Artificers of other branches should have a voice in the Society's affairs. Furthermore, in representing only the Engine Room side, the

Society could no longer claim to represent the majority of Artificers as it had done in the past. It was considered better that all Artificers should rally under one common banner that of the RNEBS with many years of experience behind it, than the various small groups should seek their own individual interests. To preserve these interests we implore all members to take every technical course offered and whilst in the Service, to join one of the Institutions recognized by the Engineering Council. If unable to qualify for Chartered Engineer, to join the Institute of Plant Engineers or other Institutes.

There are many mergers of the various Institutions taking place. Already the Bureau of Engineer Surveyors have merged with the Plant Engineers, and the Institute of Electrical Engineers and the Institute of Electronic and Radio Engineers have brought about their planned merger in April 1988.

Sir Francis Tombs, Chairman of the Engineering Council, stated, "The Engineering Council welcomes mergers with bodies where there is a common field of interest. We wish every success to these amalgamations because they can only lead to greater benefit for their membership and to the Engineering profession as a whole."

The RNEBS did this in 1900 when it opened its membership to all Artificers of all Branches in the Navy and those promoted therefrom.

We would warn our members against falling into the trap of complacency, hoping that their naval background is sufficient to sustain them in civilian life thereafter. Get your qualifications whilst in the Service. Don't wait until you leave, it may then be too late. Read DCl (GEN) 110/87 referring to the registration of Engineers whilst in the service.

In the past when Artificers had their own mess, a lot of ideas and expertise were passed on and assimilated by close association with each other, the more junior ones gaining much from their elders. Now that different messing arrangements exist, it is even more important that we share our ideas by active association in a society such as the RNEBS.

The underlying theme of the Society's record is one of keeping together, as members of one body, all of whom share a common task, outlook and method of expression. Much of the Society's strength and influence derives from the fact that many of our members have retained their membership when promoted to high service rank.

The RNEBS, through its membership, Committees, and by the efforts of its General Secretary and Section Secretaries, keep in touch with events and trends which may have influence upon the well-being of Artificers and those promoted therefrom and, by representations in Parliament or to the MOD (N), seek to foster that which will be to our advantage and to the advantage of the Service, and to redress any injustice or anomaly. Because of the responsible manner in which the Society has been conducted, it has for many years enjoyed the approbation of those in authority.

It did not then aim, nor does it now aim at attending to petty grievances and complaints. Petty grievances will not be supported by the Society, but if you have a genuine reason for complaint, let us know with the relevant facts. It will be investigated further and followed up by the RNEBS if substantiated.

A watching brief is continually held on training syllabuses and conditions of Apprentices and junior Artificers at sea. Many of the innovations and improvements in training methods introduced in recent years were first .suggested by the Society. Periodic visits are made by the members of the RNEBS Executive Council to the training establishments with the co- operation of the MOD (N) and it is to be hoped that such visits may continue in the future.

In order to keep such a society alive we need to have a sufficient number of ACTIVE MEMBERS, who take every opportunity of attending Section Meetings when possible. The RNEBS has continued to exist since 1872 because there were those who were prepared to do this. It is also important that as many Serving members as possible attend meetings when they are in port at the appropriate time and place. Dates and

places of meetings are published in advance in the Half Yearly Reports sent to every member by the Managing Secretary. Twice yearly, the Society publishes its own journal on technical matters of interest to all Artificers and a report of the Society's affairs is dispatched with it. The promulgation of knowledge by the "Naval Engineering Review" now covers every aspect of engineering associated with the Royal Navy.

The Society does not rest only on past achievement. Its success can only survive on the actions fermented by you, the present members. The activities of the past were all achieved, to the benefit of the class as a whole by constant approach to the Admiralty at source, by Parliamentary Questions and in speeches during Navy Estimates Debates and at other times.

One example of this is the long campaign, started in February 1951, carried out by our former General Secretary Bob Crick, for the reintroduction of the Warrant Rank into the Royal Navy. He never flagged in his efforts on this behalf, bringing the matter forward on every possible occasion over a period of 20 years. For much of this time he was able to call on the assistance of an MP, Mr. E. G. Willis (who was an ex. ERA) in keeping the matter before Parliament. When "success" finally came in 1971, and the "Fleet Chief" was introduced, Bob wrote that because it did not upgrade ALL (Charge) Chiefs to Warrant Officers, which is what he had campaigned for, he would rather that it had not been introduced at all. He forecasted that it would cause more problems than it solved. Because it seemed that the MOD(N) was fearful of creating too many Warrant Officers, he produced official figures (obtained by Parliamentary Questions) showing, inter alia, that in the British Army there were more Warrant Officers than Staff Sergeants. The majority of these were in the Technical Branches, naturally, as would be the case with Charge Chiefs. This logical analogy was not accepted by a Board largely dedicated to preserving the status of non-technical Chiefs.

THE WAY AHEAD

The foregoing must surely indicate the purpose which the Society serves, though it would take a book to tell of its 117 years of endeavor and achievement. Times and conditions change, but throughout all change there are certain underlying purposes which remain to be served. Each generation gives a fresh expression to the purpose and finds a slightly changed method of serving it within the old and well-tried scheme. For men of a common duty and interest, a common background of schooling and training, it is natural to form into some sort of Society or Association. It is a characteristic of the British way of life which finds expression amongst all sections of the community. For an Artificer the Society offers itself as the natural and ready provided body for him to join. By doing so he will be conscious that he has qualified himself to share in the benefits which he inherits from the Society's work of the past. More important still, he will be conscious that he is taking a proper and responsible part in determining the future for himself and others who will follow him and be grateful that he has carried on a very useful and successful work.

The Society has a solid financial backing which is immediately available to new members. Death and invaliding benefits arc paid according to total membership, at present 2,050, and based upon a scale considering length of membership. We do not consider that we can compete financially with other schemes operating in the Service, or with Assurance Societies. The present maximum Death Benefit of £210 may seem small, but it would automatically increase with increased membership. Furthermore it is promptly paid (usually within 24 hours of notification) at a time when ready cash is often most acceptable.

The Society owns "Holland House" at 46 Clarence Parade, Southsea, which houses the RNEBS Memorial Club. This Artificers Club is independent of the Society but RNEBS Members are associate members of the Club and are urged to apply for full membership and participate in the administration of this venture. Make it a place of call whenever you are in Portsmouth. You will receive a warm welcome. Facilities include Bars, and a function

room which is available for hire for weddings, reunions and all social occasions.

In addition, the Society owns the building at 113, North Hill, Plymouth. Only one room of these premises is now used as a venue for the Devonport Section's meetings, the remainder of the building is let as offices and flats to gain a source of income for the Society. Investigations are currently taking place to ascertain the feasibility of selling this building and relocating the Devonport Section at a dedicated room or chalet at the China Fleet (UK) Country Club when this venture has been completed. The profits from the sale of 113 North Hill would then be invested to give an income somewhat higher than that which the building now earns from its letting.

While the Society endeavors to represent the interest of all its members it is especially concerned, at present, with the numerous complaints that have been received from Charge Chief Artificers. If the MOD(N) want Charge Chiefs then they have the power to change the structure and give the incentive for Artificers to consider advancement more seriously. They should discontinue perpetuating the myth that the difference in Job entailment is sufficient reward.

Before the re-introduction of the WO rank into the RN, those now known as Charge Chief Artificers received the same rate of pay as Warrant Officers in the other services and carried out duties and responsibilities in their technical fields comparable with those WO's. The only real difference was that they did not receive WO pensions or allowances. This was, of course, the reason behind the original request in 1951 for WO status for all "Charge" Chiefs. If the MOD is not prepared to extend the WO rank to all Charge Chief Artificers, with pay and pension to match, it is considered that the time has come to introduce the rank of WO2 for Charge Chief Artificers, with appropriate pensions and allowances to match those of other services. The present reluctance of many to accept the additional responsibility of Charge Chief is evidence of the dissatisfaction with the status and rewards at present being offered.

Many consider the pay differential of less than £2 above other CPO Artificers to be inadequate when considered as a fraction of total salary with £5 representing a more realistic amount.

In the WE Branch there have been complaints that the examination for Charge Chief should be restored. They consider the system of selection could be biased since it may involve a personality clash at local level. The examination does provide an opportunity to demonstrate ability and forms part of the selection process which they prefer as being a fairer assessment.

These statements broadly represent the current policy of the RNEBS. The aims of the RNEBS may be summarized as to maintain, enhance and promote the standing and status of the Artificer; to promote technical and professional excellence; to enhance the military rank held by Artificers by the development of personal, moral and military standards; and to disseminate knowledge through its "Naval Engineering Review".

Any member who wishes to contribute further matters of policy, or modify existing ones, would be most welcome in presenting their ideas, preferably at any monthly Section Meeting, or if they are unable to attend one of these meetings, in correspondence with the Managing Secretary.

Any Artificer or Officer promoted therefrom who wishes to join the Society or obtain any further information on the RNEBS should write to:

W. J. ROBINS

113 North Hill, Plymouth PL4 8JY

Editors Note: How things have changed over the years.

Rolls Royce Backs Bloodhound SSC Project

Rolls-Royce PLC has announced support for The Bloodhound Project, an international education initiative focused on a 1,000 mph World Land Speed Record attempt. A Rolls-Royce EJ200 jet engine normally found in a Eurofighter Typhoon, will be used in conjunction with a custom designed hybrid rocket to propel the car past Mach 1.4 where engine and rocket each provide half the thrust.

Rolls-Royce has a long and distinguished association with speed record breaking on land, sea and in the air. In the 1930's its 'Type R' engine powered Sir Malcolm Campbell's Bluebird cars and boats, Capt. George Eyston's Thunderbolt car, Sir Henry Segrave's Miss England II boat and the Supermarine S6B sea plane of Flt Lt John Boothman, outright winner of the Schnieder Trophy in 1931. Experience gained on the 'R' in the use of improved materials, supercharger technology and enhanced fuels was later used to great effect in the Merlin which saw action in the Spitfire, Hurricane, Lancaster and Mustang aircraft of World War II.

In 1983, Richard Noble, used a Rolls-Royce Avon 302 1983 in Thrust 2 to set a record of 633.047 mph. In 1987, Wing Cdr Andy Green used two Spey 202 turbofan engines from an F4 Phantom, to become the first, and so far only, person to break the sound barrier on land in Thrust SSC, setting the current record of 763.035 mph. The company did not officially sanction or endorse any of these activities.

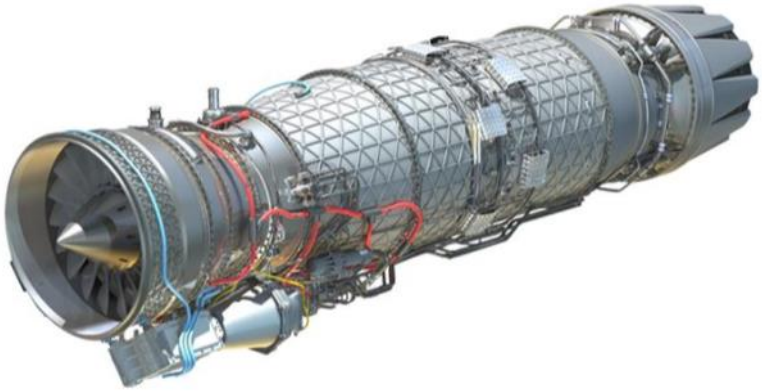
Rolls-Royce became an early adopter of the project in 2008 , formally deciding to provide the programme with essential engine support which in turn enabled the MoD to loan three redundant early development EJ200 jet engines, once the Eurofighter Typhoon flight development programme had been completed. They also lent their expertise to the complex aerodynamics programme, the installation of the EJ200 and the optimisation of its air intake; a major challenge in its own right given the cars unique performance and its vast speed range.

At the front of the engine the LP compressor increases the air pressure by a factor of about 4:1, then feeding it either to the engine core, or around the bypass duct. The bypass air misses out the HP compressor and combustor, and re-joins the core flow at the jet pipe, where some of it is diverted to pressurise the bearing chambers and cool various engine components.

Next the HP compressor raises the air pressure a further 6 times, but again some of this air is bled off for cooling various hot end components, though the term cooling is relative as now the air temperature is over 500ºC. Fuel is now pumped into the combustor through a ring of sprayers which, after starting with an igniter plug, is self sustaining until the fuel supply is cut off. The flame temperature is over 2000ºC – well above the melting point of the casing alloys, so bleed air is used to provide a cooling flow, and to prevent the flame from touching the casing.

Combustor flow is now fed through two turbines to extract energy from the exhaust gasses and drive the LP and HP compressors. For a typical jet engine producing around 60kN of thrust, something in the order of 35,000hp is needed to drive the HP compressor. Almost half the power of the jet is being used to drive its own compressor, with the remainder

coming out of the nozzle as thrust. The exhaust gasses now exiting the turbine, pass through the jet pipe to the nozzle, which controls the flow out of the back of the engine. The EJ200's nozzle can adjust its area to match the engine requirements, both to increase the thrust of the engine, but also to help control engine surge. This engine is reheat enabled and can provide a significant extra push increasing the maximum wet (reheated) thrust to 90kN.



There are three main issues with integrating the EJ200 into the Bloodhound SSC. Probably the most significant issue is with the electronic control of the engine. The EJ200 is a fully integrated component of the Eurofighter Typhoon, and has a highly sophisticated engine control and health monitoring system that is in constant conversation with the aircraft. If it is unhappy with the answer it gets to some of its questions then it sets the engine into 'safe mode' with greatly reduced thrust. The challenge will be to convince the engine that it is happily sat in a Typhoon engine bay, and that going at Mach 1.4 at an altitude of 130mm is a sensible thing to do. The electronic control of the engine and ensuring it is getting the correct data, is a major part of the integration into Bloodhound SSC.

Secondly, and linked to the engine control issue, is the design of the intake. This has to be able to deliver the correct "quality" of air to the compressor face to avoid any chance of the engine experiencing a surge. Surge is when the compressor stage of the engine stalls, resulting in a reversal of flow through the engine, an extremely violent and damaging event. Jet engines have a defined surge margin, this ensures they are never run in regions of their operational envelope where surge could be an issue.

This margin includes allowances for many parameters such as intake icing, bird ingestion and unsteady flows brought about by rapid manoeuvring. Hopefully most of these won't be relevant to the installation of the EJ200 in the car, so the designers have cashed in some of this margin for increased performance. However, this all depends upon their confidence of the intake performing as it should, hence the extensive Computational Fluid Dynamics analysis, as the project team don't have the opportunity for a lengthy development programme.

And finally, access. Due to what the team are trying to achieve with Bloodhound SSC the niceties of packaging the EJ200 in a maintenance friendly environment cannot be achieved within the vehicle constraints. What they can do, is ensure all vital engine systems are accessible for safety checks prior to a run, and certain additional tasks can be achieved within the car confines, such as oil and hydraulic level check and replenishment. However most tasks normally considered possible and routine within the engine bay of a Typhoon may require them to remove the engine. The hope is that by using the on-board engine health monitoring the team is able to predict and plan such maintenance requirements.

General characteristics

Type: Turbofan

Length: 157 inches (4.0 m)

Diameter: 29 inches (0.737 m)

Dry weight: 2,180 lbs (989 kg)

Compressor: 3-stage LP, 5-stage HP

Combustors: annular

Turbine: 1-stage LP, 1-stage HP

Maximum thrust: 13,500 lbf (60 kN) dry thrust / 20,000 lbf (89 kN) with reheat

Bypass ratio: 0.4:1

Overall pressure ratio: 26:1

Turbine inlet temperature: 1,800K

Specific fuel consumption: 21–23 g/kNs dry thrust / 47–49 g/kNs with reheat

Thrust-to-weight ratio: 9.175:1 (with reheat)

Source text supplied by Bloodhound Project and Rolls Royce. Pictures by Siemens.

Engineering in Action

By kind permission of the Captain , HMS Sultan

The Bloodhound Project

Building the world's first 1000mph car

Presented by Ian Glover BSc

Sponsored by

The Royal Naval Engineers' Benevolent Society

To be held in HMS Sultan

On 8th October 2013 at 1600 for 1630 hrs.

The presentation will last approximately one hour, after which there will be an opportunity to meet some of the Bloodhound SSC Project Team and view the static displays and buy items of project memorabilia.

This is a must see presentation for anyone who is interested in cutting edge engineering design, technology, and the ultimate in fast cars.

Please note: Personnel without Naval or MOD identity cards who may wish to attend this presentation are to provide the General Secretary with their name and address, so that they can be placed on the HMS Sultan access list.

Lack of Capability in Type 45's?

Having reduced the numbers of Type 42 destroyer replacements from the original 12 to 8 and now to 6, at an estimated cost of £6.5 billion, are we getting ship with capability much better that in existing ships and getting the cost to value ration correct?

Spiralling costs has whittled away many of the planned key features that most other modern navy frigates and destroyers already have. Sounds familiar doesn't it?

The Type 45's do not have any anti-ship missiles and would have to rely on their embarked Lynx helicopters with Sea Skua missiles but due to be replaced in 2015 with the Lynx Wildcat and the Future Anti-Surface Guided Weapon—heavy (FASGW-H) that should have double the range and allow the operator to select what part of the target to hit. This of course assumes you can launch the helicopters at the time you need to kill an enemy ship.

It was stated in the press last year that four of the Type 45's would be selectively fitted with Harpoon missiles taken from the retiring Batch-3 Type 42's.

Considering the ship is being touted as an advanced anti-submarine platform, it does not have any ship borne torpedoes, and again has to rely on the poor old Lynx that is still out hunting ships, or rely on ships fitted with Harpoon. I guess that the contingent plan would be to have 'Helicopter 1' fitted out with Sea Skua's and 'Helicopter 2' with Sting Ray torpedoes just in case. The ship's vertical launch cells are not capable to holding rocket launched torpedoes such as the US ASROC-VL. The other limitation is than the vertical launch (VL) cells are only 5m deep and cannot accommodate ship launched land-attack cruise missiles or other naval anti-ballistic missiles such as the 6.55m long US RIM-161 Standard Missile 3.

Another American system on the planning board was the relatively inexpensive communication system Co-operative Engagement Capability (CEC), which would enable other similarly fitted ships to see what they see and to engage targets that the launching ship's radars cannot see. This reduces the Type 45's effectiveness in central air defence.

The UK could have bought in the modified US Arliegh Burke class destroyers, being of a similar size, much cheaper, slightly faster, and carrying twice the number of vertical launch weapons, a 5" gun with over four times the range, cruise and antiballistic missiles and torpedo tubes. The argument about which is better and more capable will no doubt go on for many years to come.

A New Rank?

The Command Engineer Warrant Officer. Have you ever heard of this role or come across it in your naval career? Is this the Warrant Officer of Warrant Officers, in the same way as a Commodore is really a Captain of Captains?

Are we trying to copy the Americans with their notion of a Command Master Chief and Command Chief Warrant Officer or even the British Army with their Regimental Sergeant Majors?

Carrier Update

The latest news on the progress of the Royal Navy's new aircraft carriers is not good with costs continuing to spiral out of control and set to rise from £3.65Bn to £5.5Bn and now there is some doubt that the ship will be fully ready for operational duty until 2020.

HMS Queen Elizabeth (RO8), being built in Rosyth Dockyard, is nearing completion and is due to be launched in 2014. HMS Prince of Wales (RO9) will be ready in 2018 and both will be based in Portsmouth.

It does seen unfortunate that politicians of all parties are incapable of making up their minds when it comes to defence procurement and providing our comrades with the wherewithal to fight the good fight and to protect themselves. The only people who are winning are the defence contractors.

All change at the top, generally speaking!

By Derek Fletcher

The job of the Managing Secretary is to conduct the day to day running of the Society, this includes conducting correspondence, paying all bills, remuneration and death benefits, receiving rents and subscriptions, managing the property at North Hill (built in the late 19th century) and maintaining membership records and accounts. Also, to manage the Society finances and investments as directed by the Trustees.

Simple, you might think, especially as there is an Assistant Managing Secretary and Data Base Manager to share the workload.

Before the Executive Council meeting of 2012 Chris Heaver announced his wish to stand down from the post after 14 years. I was asked to consider taking the job and, although I was under no illusion that it would be a "stroll in the park", I agreed. When Chris took over in 1998 on the death of "Robbie" Robins he had to hit the ground running and learn the duties as he went along (from personal experience, this is a similar process to the way mice learn about mousetraps). As he had no wish to inflict that on me, he agreed to continue for a year while I learned as Assistant Managing Secretary.

As the year progressed and I came to understand just how much work was involved, I was amazed that Chris had been doing this job so well for so long while also holding down a full time job. The fact that the Society's finances and assets have continued to increase even with the poor recent economic climate and stagnating membership totals points to the first-class stewardship of the Society by Chris and the Trustees. He will be a hard act to follow.

Fortunately, Chris has now taken the post of Assistant Managing Secretary and will hopefully be there to help me out of whatever holes I dig myself into in my first year as Managing Secretary.

I will start my tenure as Managing Secretary of the RNEBS by asking for money; if you do not already pay the £20 subscription rate please increase it now otherwise your nominee will not receive the full Benefit when you depart this vale of tears. On the same theme, the death benefit multiplier (the number of active members used to calculate the benefit) is reducing.

If you know of anyone whose membership has lapsed or we have lost contact with, you can help reverse this decline by encouraging them to contact me.

Finally, we need new members to keep the Society flourishing both financially and intellectually. We require input and information and opinions from serving members.

Regards

Derek Fletcher

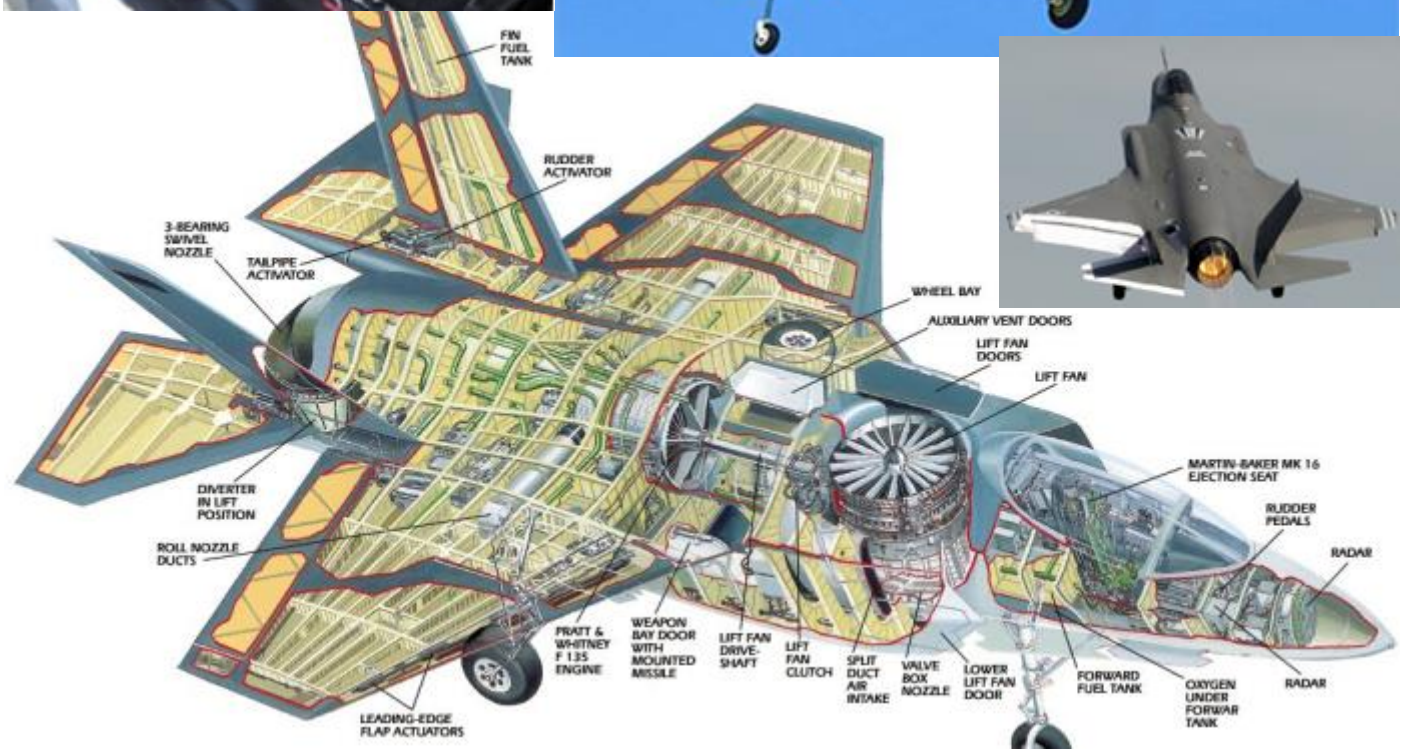
Managing Secretary RNEBS

The F35 Lightning II

The Lockheed Martin F35 Lightning II is a single seat ground attack and air defence aircraft with a stealth capability, designated as the primary strike aircraft on the new aircraft carrier, HMS Queen Elizabeth. The F-35 was designed to be the most flexible and technologically sophisticated multirole fighter ever with the entire battle space in mind. With an estimated purchase of 2,457 jets for the US it has been dubbed the most expensive weapon ever built.

It started in 1996 when the US government's Joint Strike Fighter programme selected two companies, Boeing and Lockheed Martin, to participate in developing prototypes capable of conventional take off and landing (F35A), short take off and vertical landing (F35B) and carrier landing (F35C). Lockheed Martin won the competition in October 2001 (mainly because the Boeing X-32 had inherent problems with weakened thrust and engine overheating) and was awarded the system development and demonstration contract. They also teamed up with Northrop Grumman, Pratt & Whitney and BEA Systems. The first test fight was completed in 2006 and by 2012, some 30 aircraft had been delivered to the various test programmes being carried out to testing and evaluations of weapons, refuelling, mission systems, angle of attack, sensors, tactical data exchange and ship suitability.

The F35 has a maximum speed of Mach 1.6 and a maximum take off weight, including fuel and weapons, of 60,000 lbs. (approximately 27 tons). To counter this excessive weight the engine develops 60% more thrust than a comparable aircraft making the thrust to weight ratio and wing loading similar to an F16. However there are a number of performance and safety concerns that are being worked on currently, so it will be interesting to see how the aircraft behaves when it eventually arrives in the UK.



Our Visit to the Brooklands Museum

By Mark Stevens

The Managing Secretary and I visited the Brooklands Museum in May to spend an evening with Don Wales (grandson of Malcolm Campbell and nephew of Donald Campbell) and hear about his family's world record breaking exploits on land and on water We also had a short presentation by Ian Glover from the Bloodhound SSC project that was, from an engineering perspective, quite fascinating. We had a wander around the museum beforehand and found two electric 'Bluebirds', many racing cars, bikes and motorcycles, and one of Lewis Hamilton's McLaren Grand Prix cars that has been reconfigured and set up as a racing simulator. Well I just had to have a go! Outside there is an old Concorde that is open to visitors, a Harrier Jump Jet and a number of other planes in various states of completeness. The bottom left picture shows Chris Heaver congratulating Don Wales on his excellent presentation. Where do you read your Bulletin?

Chatham Memorial Fund SUY Prize Winner—Lt David Howe

David received his prize back in the Spring of 2012 after he completed his SEMC DWEO Course at HMS Collingwood.

David Howe was born in Portsmouth in 1979 and lived his first 16 years in Waterlooville. He joined the Royal Navy as an Artificer apprentice in January 1996 (961 Series) and subsequently passed out as a Weapon Engineer Artificer Apprentice in April that year.

During his 3-year apprenticeship he served in HMS CHATHAM before being promoted to LWEA and joining HMS NORFOLK. The time in NORFOLK included the integration of the first 4.5" MOD 1 gun in a seagoing unit and being promoted to POWEA. After this sea draft he returned to HMS COLLINGWOOD for professional courses and resulted in an instructor billet of the 4.5" Gun. During this shore service he studied for his CPOWEA PQE and was subsequently promoted to CPOWEA in 2003, before joining HMS MARLBOROUGH.

After MARLBOROUGH was sold to Chile he embarked on his first broader experience outside the world of Ordnance and Control spending 2 years at PJHQ working at the Cruise Missile Support Activity as a computer network maintainer in an extremely fulfilling role.

His final sea appointment as a rating was in HMS IRON DUKE and included two APT(N) and one APT(S) deployment. This time also included HRH The Duke of Cambridge completing his introduction to Naval life at sea. On the back of this sea draft he was on the 2010 WO2 promotion signal before being extracted to join BRNC DARTMOUTH, in the Summer of 2011 , whilst serving at NCHQ. He assumed his current appointment as DWEO of HMS ST ALBANS in June 2012. When his time is up at the end of the year he is likely to go to MOD Main Building or to Abbeywood.

David is married to Jennifer and has four children: Jordan (12), Aidan (10), Jasmine (9), and Joe (7). In his free time he enjoys playing cricket for Waterlooville Cricket Club (for the last 22 years) and playing as many rounds of golf as his wife will allow. He also enjoys commuting by bicycle and playing football for as long as his knees and back will hold out. He currently lives with his family in Farlington.

For 20 Years Service

RNEBS Vice President and Assistant Managing Secretary, Chris Heaver, presented Steve Woodford with an engraved tankard and gold pen, in recognition for his 20 years of service as the editor of the Naval Engineering Review.

RNEBS Affiliated Charities

The recipients of the **2013 RNAESS Captain Marrack prizes** were POAET(AV) Melton and POAET(M) Rollason. Petty Officer Melton is currently serving at 829 Naval Air Squadron, RNAS Culdrose undertaking servicing and fault rectification on the Royal Navy Merlin helicopters. Petty Officer Rollason has been recently selected to undertake Initial Officer Training at Britannia Royal Naval College, Dartmouth and is currently completing final studies for her Engineering BSc at Portsmouth University. Prizes were presented by RNEBS Vice President, Mark Stevens, during ceremonial divisions at HMS Sultan on 24th May. The VIP guest and inspecting officer was Rear Admiral Russ Harding OBE, Assistant Chief of Naval Staff (Carriers and Aviation).



Chatham Memorial Fund SUY Prize

The RNEBS is proud to announce HMS Collingwood's winner of this award for their Summer Term 2012—Lt. Andy Marrison R.N.

Lt. Marrison received this award on completion of the Engineering Administration and Management Phase of SEMC.

He joined the Royal Navy in January 1992 and completed Weapon Engineer Mechanic training in November that year. An initial sea draft to HMS Sheffield followed which included deployments to the Mediterranean in support of operations for former Yugoslavia and to the Arabian Gulf. Leading Hands qualifying and Leadership courses followed in 1996 before returning to sea on HMS Cumberland with operational deployments to the Arabian Gulf and Africa.

An 18 month draft to Gibraltar followed, during which time he was promoted to Petty Officer. In 2002 he commenced artificer training (interrupted by 6 months spent on OP FRESCO covering the fire-fighters' strike). Completing artificer training in 2005 he was drafted to HMS Albion as the SCOT and EW maintainer and was subsequently promoted to CPOWEA in 2007. He joined the Defence Centre of Training Support in 2008 as an instructor trainer. Drafted to HMS Quorn in 2009 as DWEO he joined during a busy NATO deployment as part of SNMCMG1, followed by 10 months as WEO during a busy docking and ship regeneration period.

He was selected for officer training in 2010 and a move to HMS Brocklesby as the WEO and a further SNMCMG1 deployment followed. Activated as part of OP ELLAMY and OP UNIFIED PROTECTOR he was on-board for operations off Libya including the live ordnance disposal off Misratah port. He joined BRNC from October to December 2011 and then undertook SEMC from January until October 2012. He is serving currently as the Weapon Section Officer in HMS Daring on the first Global deployment for a Type 45 Destroyer. In his spare time he enjoys scuba diving and most outdoor pursuits. At home he enjoys DIY, gardening and has recently become involved in photography.