



# All Guns Blazing!

## Newsletter of the Naval Wargames Society

### No. 156 – April 2007

#### Editorial

Hi Everyone,

No battle reports received this month, but a rather interesting piece by Richard Wimpenny on fire control issues that relates back to one of Simon Stokes' earlier submissions. I'm sure it will get the gunnery experts amongst the society excited!

A reminder now that Simon and a stalwart team of old salts will be staging a participation game to publicise the society at Salute 2007. The date of the show is Saturday April 21<sup>st</sup>. If you are going along please drop in to see Simon and co to say "hi" – its always good to be able to put names to faces (or is that vice versa? ☺)

Today is of course April Fools Day (happy birthday to the RAF by the way). Your mission, should you choose to accept it, is to determine whether there is an April Fool's joke hidden within this issue. Of course, in keeping with the requirements of the date, this only applies if you receive this between the hours of 00:00 and 12:00 on April 1<sup>st</sup>. Otherwise you may treat this as a purely academic exercise!

Yours aye,

DM

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## **The Naval Wargames Society Annual General Meeting**

***Saturday 2<sup>nd</sup> June 2007***

***Ships Company Dining Hall, HMS Belfast  
Pool of London***

After an over-long hiatus the next Annual General Meeting of the Naval Wargames Society will be held at 5pm on Saturday 2nd June 2007. The venue will be the Ships Company Dining Room on board HMS BELFAST, in the Pool of London. The AGM will coincide with the NWS summer event on board the ship. The AGM is an important event which guides the course of the NWS. This is your chance to make your feelings known and, if you wish, to stand for election to one of the committee posts and get involved in the day to day running of the society. As usual all committee posts and associated "jobs" will be up for election, so if you'd like to try your hand at running the NWS please feel free to contact the current post holder or any of the other committee members to find out what the post entails. If you want to stand for election you can either let us know beforehand, or just turn up on the day and let the chairman know at the meeting.

Current Committee members are:

Chairman – Stuart Barnes Watson

Treasurer – Simon Stokes

Membership Secretary – Peter Colbeck

Editorial Staff are:

Battlefleet Editor – Chris White

All Guns Blazing Editor – David Manley

Contact details are on the back cover of Battlefleet. If you are thinking of coming could you let us know so that we can get an idea of numbers attending (we may also need to give a list to Ships Staff on the day since the AGM will be after normal closing hours for the ship).

# **The Naval Wargames Society Summer Bash**

***Saturday 2<sup>nd</sup> June 2007***  
***to***  
***Sunday 3<sup>rd</sup> June***  
***Ships Company Dining Hall, HMS Belfast***  
***Pool of London***



The NWS has been invited by the Imperial War Museum to hold a Summer event on board HMS Belfast. The dates for the event are the weekend of 2nd and 3rd June. The centrepiece of the event will be a participation game based on an aerial attack on Ark Royal and Hood in the Med in 1940. Participants will take command of a squadron of aircraft rather than the ships themselves. All to be done in 1/600th scale. The game will run on both Saturday 2nd June and Sunday 3rd June. As well as this game there will be plenty of space to run other games, both participation and demonstration. If you would like to put on a game please contact either myself or Simon Stokes.

The event will be held in the Ships Company Dining Hall and overnight accommodation will be available on board the ship. This of course means that there will be further opportunity for games and other naval wargaming events on the evening of the 2<sup>nd</sup> after the Annual General Meeting.

For more information on HMS Belfast, including travel advice, please visit the ship's website:

<http://hmsbelfast.iwm.org.uk/>

## FIRE CONTROL OR DIRECTOR CONTROL?

*By Richard Wimpenny*

I'm sure that I am not the only one who thoroughly enjoyed Simon Stokes' thrilling battle report, 'The First Battle of the River Plate that never was' in the December issue of *AGB*. However as mentioned in Simon's conclusion, there was some controversy over whether the *Scharnhorst* and *Gneisenau* should have been classed as having director control, as when they were, hitting seemed just too easy for von Spee. Fire control in the dreadnought and pre-dreadnought era has always been a favourite subject of mine, and one I have wrestled with on many an occasion. I think it was Lord Palmerston who said that he was one of only three men who had ever really understood the Schleswig-Holstein problem, but that he'd forgotten it, another of them was dead and the third had gone mad thinking about it! This has always reminded me of fire control! One of the main problems, I believe, and one highlighted in Simon's game, is one of nomenclature. All director control is by definition a form of fire control; but not all fire control is *director* control.

The development on fire control systems around the turn of the nineteenth and twentieth centuries was a great step forward in the quest for long-range gunnery. However, it was a gradual process involving many different instruments, from watches and voice-pipes, to optical rangefinders and mechanical computers, and it was rare for two ships to have identical systems in place. This vital point is something that is missing in just about all rule-sets for the period. There is a general acceptance that one of the defining elements of what made a dreadnought a dreadnought was 'Director Control' for its main guns. Comfortable as this may appear at first and easy as it is to apply in a game situation, it just isn't true. What is true is that all pre-dreadnoughts and dreadnoughts had *varying degrees of fire control* and that most dreadnoughts were equipped to fire by Director *eventually*, but it took time; it didn't just happen overnight. To illustrate this point, when the ground-breaking HMS *Dreadnought* and *Invincible* were being planned by the Committee on Designs in 1905, the only fire control equipment available was a Mk 1 Dumaresq for determining deflection (of which more below) and a 4½ ft Barr and Stroud optical rangefinder; in other words the same as on the latest pre-dreadnoughts. Firing by Director Control meant that the actual firing of the guns as well as all aiming and observation was *done outside of the gun turrets themselves*; all the guns' crews had to do (and I don't mean this in a demeaning sense) was abide by training and elevation instructions sent to them by the fire control team. None of the vessels in Simon's game should have been firing by Director. (Indeed, good though it was, German fire control throughout WW1 was never Director Controlled, not even on capital ships.) So, if they weren't equipped with director firing, what fire control did they have and should the Germans have enjoyed a significant advantage in this respect?

In truth there is no detailed proof on exactly what fire control systems were in place on the British or German cruisers, because, as mentioned above, vary rarely did two ships have exactly the same equipment, or use it in precisely the same way if they did. (This was mostly to do with the various forms of plotting, which I won't go into here.) It is probable that the British cruisers in Simon's scenario were fitted with a 9-foot Barr and Stroud FQ2 coincidence rangefinder, a Dumaresq, a plotting board, a Vickers clock and Macnamara time-of-flight watch. All this would have been in the foretop, while the gun turrets may have had the Vickers follow-the-pointer (FTP) system installed. Now, what on earth is all that?!

- Barr and Stroud had begun designing rangefinders in the 1880s, and the principle of 'coincidence' was like the split-image focusing to be found in many cameras today (Or should that be yesterday?). The FQ2 model was (theoretically at least!) accurate to 14,000 yards. A Chetwynd liquid compass could be mounted on the rangefinder for taking target bearings simultaneously with the range.
- Lieutenant (later Rear-Admiral) John Dumaresq (pronounced Du-MAR-ek) devised an instrument to measure range- and bearing-rates and speed across (deflection) as early as 1902. Readings from the rangefinder were used along with estimates of the enemy's speed and bearing to give a solution for how fast the range to the target was changing (the 'rate of change of range' or 'range-rate' for short), and from this an angle of deflection could be deduced to set on the gun sights.
- The Dumaresq required enemy speed and course, and while these could be estimated, they could also be ascertained from plotting the range and bearing by marking rangefinder readings on a paper time and range plot. To begin with, the various readings would be erratic, but gradually (too gradually in manual systems) a trend would appear. Once this 'mean line' had been established, readings that proved to be wild could be given less weight or discounted altogether.
- The Vickers Clock kept a track of the range-rate. If the target was at 10,000 yards but closing at 200 yards a minute, a 'rate' of minus 200 would be set on the clock. As time went by so did the range; therefore, with the above example, after ninety seconds the Vickers Clock would be showing a range of 9,700 yards.
- The Macnamara time-of-flight watch was set when the guns were fired and it enabled a more accurate spotting to be maintained, as it was known when each salvo could be expected to 'splash'. Despite the

introduction of more advanced fire control instruments, spotting was still a vital element in controlling gunnery, as it was visible proof of how reliable the fire solution was.

- With 'follow-the-pointer technology' (an important stepping-stone on the way to full Director Control), the gunnery officer could issue training and elevation orders from his station aloft to the turrets without the use of voice pipes.

As soon as an enemy was sighted, the rangefinder and Dumaresq in the top were trained on the target and the gun-layers would begin to follow their pointers. At this point a 'rate-keeper', also stationed in the top, would estimate target course and speed, while the rangefinder or estimation was used to give an initial range; all this data was set on the Dumaresq, which would give the first values of range-rate and speed-across and enable the Vickers Clock to be started. The guns could now, if required, open fire. Should the enemy bearing change, the range-rate and speed-across could be read off the Dumaresq and the rate on the Vickers Clock be adjusted, while the changes in deflection were transmitted to the turrets via the follow-the-pointer equipment. After around five minutes, enough rangefinder readings could have been entered on the time-and-range plot to establish a 'mean range' and the clock could be re-set if needed.

Now, this *may* all seem easy. It wasn't. The description given above is of a fairly basic manual fire control system. Eventually more automation was added, with data being transferred, for instance, directly from later marks of Dumaresq to the Vickers Clock, and all this culminated in the Dreyer Fire Control Table that integrated everything into a plot. (There was a rival system by the civilian inventor A. H. Pollen, which the Navy rejected. Although Pollen's table is more often than not reported as being far superior to Dreyer's, this assertion is challenged by John Brooks in his excellent book on fire control and its effect at Jutland. See 'Sources'.) However, advanced though it was, the introduction of Dreyer's mechanical computer did not mean 'firing by director'. The first trial Director was fitted by Vickers on HMS *Neptune* in 1910, and as there was some opposition to the whole idea, there were only eight ships in the Grand Fleet so equipped in August 1914. Indeed, while discussing fire control and its effects on wargames involving von Spee, it should be pointed out that neither *Invincible* nor *Inflexible* ('dreadnoughts' though they were) had Director Control at the Falklands. In fact they had left Britain to pursue von Spee with men from Vickers aboard installing them, but they were not ready in time.

Now although the above—I hope!—has gone some way to explaining the fire control on the British cruisers in Simon's game, what about von Spee's? Basically it seems the system in place on his armoured cruisers was much the same as his British counterparts. True, the 3m Karl Zeiss rangefinder (stereoscopic rather than coincidence based) was on the whole more accurate than the contemporary Barr & Stroud models on British ships, especially when dealing with targets in poor light or when obscured by smoke. The Germans also had their own form of Dumaresq for working out the range-rate, the *EU-Anzeiger*, but unlike the Dumaresq a separate instrument was needed for working out deflection. Plotting was not used to obtain a mean range, but a clock, the *Aw-Geber C.12*, was used to keep the range-rate and follow-the-pointer gun-sights were used. What made von Spee's gunnery so deadly at Coronel was the simple fact that his guns' crews were excellent. After von Spee had waited for ideal lighting conditions, *Scharnhorst* and *Gneisenau* opened fire on Cradock at 12,000 yards with three-gun salvos that were beautifully controlled and devastatingly effective. Good discipline and a high level of training were what counted on this occasion, not a vast superiority in fire control equipment.

Issues of fire control are where the American rule-set 'Seekrieg 5' *really* come into their own, and they work extremely well in representing the many and varied systems in use between 1880 and 1945. I am writing a full review of these rules for 'Battlefleet', which I hope to send in shortly, so I won't go into too much detail here; however, I will show how 'Seekrieg 5' would have dealt with Simon's fire control quandaries.

Each fire control system is given a letter code, from 'A', which is the most advanced, to 'Z' that basically represents firing over open sights. Although there is little hard evidence for fire control in cruisers of the period in question (most of what is written on the subject tends to concentrate on battleships and battlecruisers), what I have found in John Brooks' superb book tends to be mirrored accurately in 'Seekrieg 5', and all the armoured cruisers' primary batteries in Simon's scenario, British and German, would be classified as having 'Q' fire control systems. To wit:

'Telescopic gun-sights, basic fire control instruments, optical rangefinders, *no director control* [my italics], early FTP control system, manual stabilization.'

The light cruisers of both sides (and the armoured cruisers' secondary guns) are slightly less well off, being rated as 'S', which is the same as 'Q' but lacking any FTP. As I mentioned above, Sturdee's battlecruisers at the Falklands didn't have Directors, and SK5 has them also equipped with 'Q'-class fire control. (By 1915, however, they were updated, and this is also the case in SK5. They are rated 'J' from this date, the initial fire control system that includes Director Control.) Crew quality is very important in SK5, and the undoubted ability of von Spee's men would have given them an advantage over Admiral Stoddart in Simon's game, despite having the same form of fire control system. The old adage about 'Men not machines, blah, blah,' could have some bearing here!

I wish I had been able to get along to Simon's game, as although somewhat 'over the horizon' I don't live that far away. Perhaps it could be run once more but with SK5? Or maybe I should run a Society game at a show using them? Hmm... where did I leave my Dumaresq?

Richard Wimpenny ([wimpenny@talktalk.net](mailto:wimpenny@talktalk.net))

## SOURCES.

Brooks, John, *Dreadnought Gunnery and the Battle of Jutland: The Question of Fire Control*. (Routledge, 2005).

Padfield, Peter, *Aim Straight: A Biography of Sir Percy Scott the Father of Modern Naval Gunnery*. (Hodder and Stoughton, 1966).

Also worth a look is [www.dreadnoughtproject.org](http://www.dreadnoughtproject.org) which has excellent 'models' of fire control equipment.

## **NWS Events and Regional Contacts, 2007**

### **NWS Northern Fleet – Falkirk East Central Scotland**

Kenny Thomson, 1 Excise Lane, Kincardine, Fife, FK10 4LW, Tel: 01259 731091  
e-mail: [kenny.thomson@homecall.co.uk](mailto:kenny.thomson@homecall.co.uk) - Website: [WWW.falkirkwargamesclub.co.uk](http://WWW.falkirkwargamesclub.co.uk)

Falkirk Wargames Club meets each Monday night at 7pm with a variety of games running each evening. Naval games are popular with 2 or 3 run each month. Campaign games sometimes feature in our monthly weekend sessions. Games tend to be organised week to week making a 3-month forecast here a waste of time. Please get in touch if you'd like to come along.

- Popular periods – Modern (Shipwreck), WW1 and 2 (GQ), WW2 Coastal (Action Stations), and Pre-dreadnought (P Dunn's rules)

### **NWS North Hants [Every 3<sup>rd</sup> Sunday]**

Jeff Crane 31 Park Gardens, Black Dam, Basingstoke, Hants, 01256 427906  
e-mail: [gf.crane@ntlworld.com](mailto:gf.crane@ntlworld.com)

Next game on 4th March. Contact Jeff for details.

### **NWS Wessex [Bi-Monthly Meetings]**

The Wessex Group has gone into (hopefully) temporary abeyance for the moment. If anyone living in the bath / Bristol / Gloucester area (or further afield) would like to take on managing the group please contact myself or any of the other NWS officials.

## **Other Events**

### **“Carronade” Wargames Show**

The Falkirk Wargames Club has started a new show in Scotland called Carronade. The show next year will take place on Saturday the 12th of May 2007 at the Forth Valley College Falkirk. If any member of the society would like to put on a game please contact Kenny Thompson on 01259 731091. At this time the club web site is being renewed