PLAYING WITH FLETCHER PRATT by Ian Drury

Airfix's 'Sink the Bismarck' set of 1/1200th scale waterline ships looked very tempting in Modelzone after Christmas; especially having seen Tim Gow's photos of his miniature shipyard in Sheffield where he was converting models of Hood into other battlecruisers. Given all the other stuff in preparation on my painting table, could I really justify adding this set to the queue? I thought for a bit – and bought two. By the time you read this, a 1/1200th scale Arctic convoy will have fought its way across a big wooden floor in Holborn. Or not, if my spiffy Revell Scharnhorst outperforms her historical namesake.

The Airfix set represents fabulous value for money, providing Hood, Ark Royal, Suffolk and two Tribal class destroyers for the Royal Navy; Bismarck and Prinz Eugen for the Kriegsmarine. What helped make up my mind on the day was the presence nearby of the Revell 1/1200th scale King George V. I've supplemented it with some EBay purchases and a big bag of destroyers from Mick Yarrow's useful and inexpensive range of metal castings. However, there are some difficulties with this scale. Eaglewall made an extensive range of plastic kits, but they have been out of production for 50 years and command high prices; I'd like a Nelson class and a Queen Elizabeth, but the only modern sources are metal costing more than £20 a ship.

1/1200th scale is also the preserve of collectors who, like the villain in Toy Story 2, want to put into glass cases toys actually made for adventurous little chaps to play with. Thus the nice pocket battleship I saw last week went for £65. Collectors prefer the pristine of course. I'm currently undertaking substantial repairs to a much played with Tremo model of HMS York: she was 99p.

John Curry's publication of the Fletcher Pratt naval wargame sheds valuable light on a game that many people have heard of, but I suspect few have played any time recently. John has helpfully placed some Excel spreadsheets on his website that saves everyone else from reinventing the wheel. So the creation of ship cards etc. is quick and easy. However, playing the actual game involves multiple hits worth, for example, 1150 points (8-in guns) or 8550 points (15-inch guns). Mastering your 8550 times table, you deduct the damage from battleships worth about 200,000 points. Hmmm. I have enough trouble keeping score in darts.

Given that I'm interested in big ship actions rather than messing about in PT boats, the smallest gun I care about is the famous German 88mm shipped as a heavy AA weapon on many German ships, but obviously good at making holes in other, unarmoured things. If an '88' is worth 1 point, you can divide all numbers (gun hit values and ship points values) by 100 and then round off. For example, the 11-in gun scores 2600 points damage in the rules as published. Dealing with multiples of 25 is obviously easier than 26, so in my game the 'pocket battleships' will dish out 25 damage points; and with their harder-hitting SKC/34 guns Scharnhorst and Gneisenau will score 30.

I'd be interested if anyone knows the mathematical formula Fletcher Pratt used for his shell damage values. They are roughly in proportion to shell weight, ranging from about 5 times at the smaller calibres to 4 times at the heavy end, but reconstructing his formula depends on discovering the data he used. In reality, shell weights and performance could vary widely between the same calibre munitions. German and Japanese shells were often lighter than their British or US counterparts of the same notional calibre. It can't have helped the original rules writers that the navies of the Axis powers consistently lied about the technical specifications of their warships, as they sought to get around various international treaties. Similarly, John

Curry's book suggests Fletcher Pratt knew about the dismal performance of American torpedoes in 1942–3, but did not publicize it.

Fletcher Pratt's ship formulas are a period piece too. Extra points, albeit not many, are awarded for the underwater torpedo tubes removed from many battleships as a safety hazard. Similarly with onboard aircraft: the lethal oil and petrol tinderboxes that proved so fatal to the American cruisers off Savo Island increase a ship's value.

John's edition of the rules reveals that Fletcher Pratt had the unique experience of witnessing his rules validated with the author himself under hostile fire. He was aboard one of the US escort carriers attacked by a Japanese surface action group in 1944. He concluded that the intense pressure the Japanese were under to score quick results – before the air groups of the big US carriers intervened – led them to miss easy targets. Just like in his game. Fred Jane thought the same was true of his firing system with the little pointers, albeit without having had someone lobbing 8-in shells at him.

Despite the focus on the Second World War, I suspect most of the data available to Fletcher Pratt came from interwar studies of Jutland. Lessons from Jutland formed the basis of the US Navy's tactical thought before 1941. But instead of gunnery duels at even longer ranges than those prevailing in the North Sea in 1916, the surface navy found itself in nocturnal knife fights off Guadalcanal. By late 1942, radar directed fire control had the potential to transform things forever: the Washington consistently landed tight groups of 16-in shells in the wake of the Atlanta during live fire exercises – at 35,000 yards. Far more accurate than any visually based system: no 'ladder firing' for the US Navy any more. (And no firing at all from the South Dakota when she lost all electrical power just as she went into action: there was a downside to relying on immature technology.) The computer- and radar-directed destruction of the Scharnhorst by HMS Duke of York and the revenge of the American battleships at Surigao Strait were both achieved against targets only visible (together with the shell splashes) on the radar display. Hence the suspicious insistence of that old school admiral Bruce Fraser in demanding visual proof his enemy had sunk. The radar team knew: they'd watch the echo diminish then vanish. This is closer in feel to Larry Bond's Harpoon modern naval rules.

Data from Second World War actions suggests that the rules linear increase in damage proportional to shell calibre is not really justified. The British were delighted with the performance of their new 14-in gun which penetrated armour better than 15-in rounds, the larger (longer) shells often bending as they passed through armour at an angle. Bending and not exploding properly. It seems that the performance of British 14-, 15- and 16-inch guns as well their German equivalents – all weighing 1400–2200lbs – were actually very similar. The significant difference among the large calibre weapons appears with the Washington class, whose 16-inch guns fired gigantic 2700lb shells over such stupendous ranges. USS Washington joined the RN home fleet in 1942 to help escort some Arctic convoys which might have been very grim news for the Tirpitz had she managed to intercept one. And I see Revell make a 1/1200th Iowa class which can probably be converted. . .

- It's really a WW1 game that works for early WW2 but by late '42 with radar-directed gunnery (cf USS Washington or Duke of York v Scharnhorst) things have changed. Not to mention aircraft.

- The 80s and 90s, golden age of naval reference books – Lonnie Gill's comment that most of his reference books postdated GQII