

# Whatever Happened to the Type 45

Informing discussion and debate on the future of the Royal Navy

## Whatever Happened to the Type 45?

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Author: Alexander Clarke

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Figure 1: HMS *Daring*

### Abstract

This text is examining the appearance of the Type 45 Destroyers in the printed media, how various experts feel the program has been portrayed, and what could be done to improve the situation. It has discovered that there has been so small an amount of real coverage of the program that it is almost a joke. It has found that a nation which used to pride itself on its navy, and where practically every journalist could name off the top of their heads every major vessel in the Royal Navy. Now, they cannot even get the number of missiles carried in the navy's brand new class of destroyers. It has concluded that the programme of procurement for Type 45 destroyer has included the MoD pursuing a media agenda which was actually counterproductive (whether willingly or not) to the Royal Navy getting what it asked for. Its findings reflect the fact that the UKNDA has been handicapped in its attempts to correct this and many other programs. Primarily this could be said to be because the UKNDA pursues an exclusive top down approach to lobbying rather than inclusive ground swell political campaign; simply put it is concentrating on influencing ministers and rallying former senior military personal to its standard, when the former have no wider body of 'voters' interested in the issue, and the latter are already prepared to pledge support; but are very bad at presenting either a united front or actively mounting a political front to effect the government. However, more than anything it is the current government forcing down the level of debate which has crippled both their actions and their attempt to build a wider base of support. In order to overcome this in the long-term a suggestion might be for them to try a populist approach to build up a wider foundation of support for complete defence procurement reform; as well as to enable to starting of an ongoing vibrant debate on the future operational requirements, strategy, shape and what is necessary for it.

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Figure 2: Artists impression of a T45 firing an Aster missile in profile

## 1.0 Introduction

"I have not followed the programme closely, and to me there has been very little coverage of note in the press, and no significant discussion at Westminster."  
CG(2009)

The Type 45 class of destroyers [1] is arguably the Royal Navy's most important vessel procurement program for 30 years[2]. These 6 destroyers, of which the Royal Navy originally asked for 14, will be the core protection, presence, and support of all future naval operations; whether they are in the Mediterranean (Freedman, et al., 1994), the South Atlantic (Woodward & Robison, 1992, paperback edition 2003), or East of Suez (Clapp & Southerby-Tailour, Amphibious Assault Falklands, The Battle of San Carlos Water, 1997).

These vessels, whose primary role is that of 'monkey-goatkeeper'; moving around the seas and the carrier (Fig 3) or amphibious task groups that they will be attached to with the roles of fielding cruise missile strikes and air attacks; whilst also providing fire support with their 155mm main gun[3]. They nevertheless have only the fittings for but are not fitted with anti-ship missiles, they are fitted with a Vertical launch System (VLS)[4], which even those who recommended it, advertise it may have to be upgrade to another; which was cheaper to buy in the first place. To this are added a litany of further compromises on the original requested specifications. Even with these issues, and costing about £600million for each, there has been limited, or no involvement by the media; this report asks two questions; what have the media reported on the Type 45, and why have they reported so little. Simply put, both these questions ask what the quote at beginning stated; why has there been no debate on something so important.



Figure 3: Artists impression of a Queen Elizabeth class carrier under way

## 2.0 Background

During the 1982 Falkland's War and the 1991 Gulf War I the importance of area air defence was consistently reinforced (Clapp & Southerby-Tailour, 1997; Jones, 2008); unfortunately all the Royal Navy had was the Type 42 class destroyers (Figure 4). They were, and are still, armed with the arm launched ramjet based Sea Dart surface to air missile (Janes, 2006).



Figure 4: Type 42 class destroyer firing a Sea Dart missile

A replacement though was sought; originally this was to be a collaborative effort with France and Italy; in order to spread the cost, this was the Horizon Frigate project. Unfortunately, it was doomed from the very first due to the nations wanting different things from the vessels, and unlike with Euro-fighter project[5]; the navies were building enough the compromising was an option; thus FREMM (still sometimes called the Horizon Frigate, Fig 5) and the T45 destroyer were born. Italy and France had similar enough requirements to continue working together; whereas prior to 2004 the RN desperately needed at least 12 (it had by then been forced to accept the cuts already) Area Air Defence Destroyers or AAD's as the North Atlantic Treaty Organisation (NATO) calls them, in July of 2004 it was cut to 8 (SPG Media Limited, 2009). The T45 design was thus entrusted to British Aerospace Engineering (BAE), Britain's largest, in fact one of the world's largest, full spectrum arms companies. Through the borrowing of a lot of influences from both the Type 23 Duke class of ASW Frigates of the RN (Fig 6) and the Horizon project, a design was cobbled together with an initial order of eight being placed; after a strategic defence review had made further cuts.

The project continued, eventually leading to events of 2005, when HMS Daring's keel was laid, the lead ship in class which due to budget cuts brought about by 'unforeseen drains on the MOD finances' (Afghanistan & Gulf War II), had been further cut to the figure it now currently resides at 6. They had also grown dramatically in price and austerity.



Figure 5: Horizon class Frigate of the French Navy



Figure 6: HMS Norfolk, a Type 23 class frigate

### 3.0 What has been reported?

"It has focussed on the gee whiz statistics and largely ignored the need for AAD and the question of why 6 is the right number."

AL (2009)

The report of the type 45 has been heavily orientated within the direction of firepower and the equivalence to the Type 42s (Evans, 2006), which were considered inadequately armed even when launched 30 years previous (Ministry of Defence (National). C, 2009). The most obvious example of this focus is the quote Lord Drayson[6] in the Times "the most modern and powerful air defence destroyers anywhere in the world" (Scotland Correspondent, 2005); this is a very bold statement considering the world also contains the Arleigh Burke class of the United States (Janes, 2006). However, this is where the reporting comes in, the Arleigh Burk class are General Purpose Missile Destroyers; which thanks to the SM-3 missile[7] and their Aegis command and control system (and the SPY-2 radars) (Janes, 2006) mean they can hit ballistic missiles or aircraft the size of cricket ball's, if ever that is necessary, but can also carry Tomahawk cruise missiles which can hit land targets with pin-point accuracy at a range of 1000nm's (WGBH educational foundation, 2009), or can launch ASROC torpedoes at targets found by their own sensors or either of the two helicopters (compared to the Type 45's 1) or the UAV's(which the T45 does not have) that they carry's sensors (Janes, 2006). Despite the comparison with the Arleigh Burke class the claim is based in some fact.

### 3.1 PAAMs

The reports point to the Principle Anti-Air Missile System (PAAMs) [8], talking about it as "the most sophisticated of its kind" (Leppard, 2009), as an ace in the Royal Navy's arsenal; after all only one type 45 is required to defend London (Leppard, 2009) for the 2012 games. There have been considerations for installing the SM-3 on Type 45s (Pike, 2008), however as was stated in the introduction the Type 45 with the wrong VLS, it is fitted with Sylver A-50, not the Type 41 VLS, or even the Sylver A-70. The problem therefore is one of size of launcher, whilst the A-70 might have been upgradeable[9], the A-50 which was selected over the Type 41[10] for political reasons (and the Type 45s might still have to be retrofitted) is too small and too limited to be able to take the SM-3, or tomahawks, or even the less capable Tactical Land Attack Missile being developed by the French for the A-70 VLS[11].

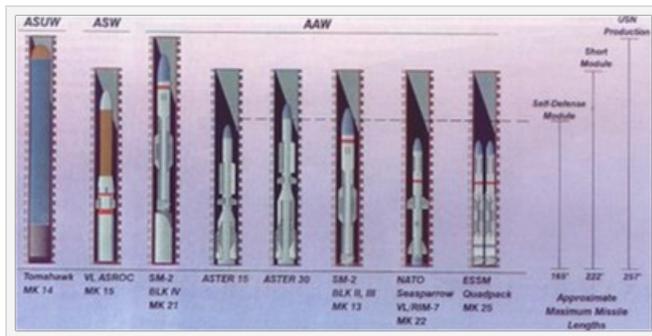


Figure 7: Type 41 VLS missile range [12]

### 3.2 The way the Type 45's design is presented

The comparative qualitative lacking of the Type 45 has been further clouded by the eye catching statistics such as each Type 45 has the firepower equivalent of over eight Type 42s (Evans, 2006); "weaponry capable of hitting an object the size of a cricket ball travelling at twice[13] the speed of sound" (Reid, 2007; Ministry of Defence (National). E, 2006); And that a Type 45 "generates enough electricity to power the Shetland Islands" (Reid, 2007). The fact remains that none of these statements really matter, it does not matter in a warzone whether or not a Type 45 could power the Shetland Islands, whilst being able to hit a cricket ball suggests a very accurate system – any missile or aircraft will be dodging and manoeuvring not travelling in a straight line, and the firepower of eight Type 42s does not matter as the Type 45 is not fitted with the technology to be in eight places at once[14]. These originated with the MOD's own press releases such as is featured in Appendix F (Ministry of Defence (National). E, 2006).

### 3.3 The way the Type 45's role is presented

"These ships will form one of the essential pillars of the Royal Navy in the 21st Century." (Ministry of Defence (National). A, 2009)

Bob Ainsworth the Minister for the Armed Forces has been quoted by the Ministry of Defence as describing the "Type 45 is an immensely powerful state of the art destroyer that will provide a vital layer of protection from missile attack for the fleet" (Ministry of Defence (National). B, 2007); Whilst Quentin Davies the Minister for Defence Equipment and Security "These ships will form one of the essential pillars of the Royal Navy in the 21st Century". The Type 45's are consistently presented as important and necessary for the future capability and operation of the Royal Navy in waters near or far from Britain's own territorial

waters; however only 6 are being procured.



Figure 8: HMS Albion and HMS Bulwark, the LPDs which are the core of the RN's Amphibious Task Group



Figure 9: HMS Ocean the LPH which is so important to the RN's Littoral capability

#### 4.0 Analysis of Interviews

'To me there has been very little coverage of note in the press'  
CG (2009)

AL (2009) classified the press coverage as simplistically positive and taken straight from the press release; the quote of CG is very much a reinforcement of this; but it is JM's analysis of the press which is really interesting.

The emotive and highly expressive vocabulary that JM uses to describe the way the media interacts with their audience and the information available to them on topic of the Type 45 would suggest that he believes it is a more widespread problem than just the Type 45 program of procurement. It also points to a source of the trouble, targeting the MoD/Government's 'spin' doctors as being responsible for giving cover to the undermining of the Royal Navy's required number of destroyers. It is therefore an analysis which puts forward the view that rather than the press coverage just being non-existent in the most part and vacant in the rest, the press coverage was in places wilfully uninformed and in others was in a frame not suiting the seriousness of the topic.

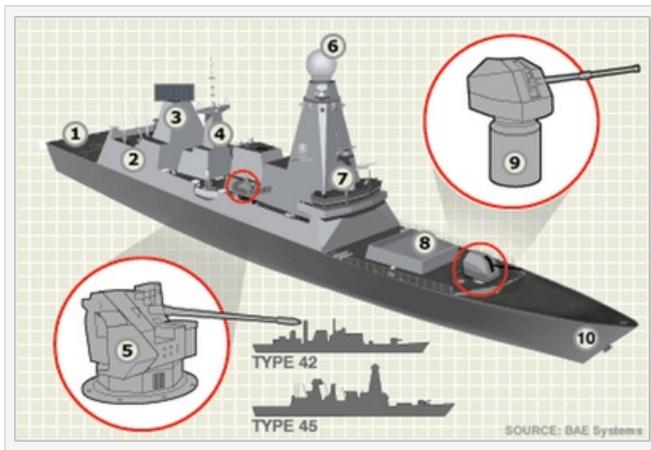


Figure 10: 3D drawing of a Type 45

The seriousness of the topic though is something which comes up again and again in AL's (2009) testimony, for example he states that "there is a glaring need to show the public that behind the statistics...is a vital mission upon which the safety, prosperity and food supply of this country depend". AL doesn't finish there though, making the statement that "No navy = No food, and no fuel", a point which is probably the most salient to make in support of a stronger Royal Navy, in fact it is the most salient point to make in favour of a viable debate on defence, on what is desired for, on what is needed from the defence establishment and what is required for the forces to accomplish that.

This is different again from the way that JM develops it; he suggests that the RN did get the type and style of ship it wanted; although he is careful to avoid mentioning the words quality or quantity. The Royal Navy wanted an AAD[15], it wanted 14 of them, probably with a better VLS than the Sylver A-50; however it's got just 6 of them, and according to JM (2009) it is due to the huge cost which was caused by MoD/government imposed cuts to the defence budget. This is an interesting point to put across and it's probably more a product of the lack of media or public debate, in fact interest, in the defence procurement and planning process.



Figure 11: Selected point Picture HMS Daring

## 5.0 Conclusion

The programme of procurement for Type 45 destroyer has become mired in its own MoD media releases. They have focused on fun rather than serious, they give anecdotes about football pitches, cricket balls and one being enough to cover the whole of London, rather than have a radar system which can pick out sea skimmers at over a 100 miles, armed with Aster 30 missiles which can pluck said sea skimmers or in fact almost any aircraft out of the sky at a range of over 40 miles. Therefore instead of focusing on the Type 45 as a war fighting vessel with an actual role in modern conflict they have been putting forward a media program like they are advertising a kid's toy or a book of 1001 interesting facts no one else knows. This is why the Type 45's press has failed; this is why defence procurement gets so little mention of quality, because the MoD's own press releases have pulled it down to a level below the lowest level of newspaper readers. The reason there is no debate is because defensive is a complex issue, defence procurement even more, and it keeps being driven down below the level at which it can take place.

## 6.0 Findings & Recommendations

The groups such as the UKNDA need to develop the capability of lobbying the court of public opinion as the only viable method of affecting government action. They are currently focused on lobbying a government which does not want to listen in the first and in the second would prefer to not have to pay anything for the forces it deploys around the world for its political/diplomatic ends. This is notably the converse opposite of America where defence spending and procurement is a very public issue. As an issue though it gets worse when you go from land to air to sea, the land has a visible battle Afghanistan and Iraq which it is fighting, the air is 'obviously' supporting the ground battle (even though the most successful aircraft are RNAS harriers); what is the role of the navy? This is not being announced to people of Britain, all that they hear and see are the failures verses the pirates, not the fact that it is lack of deployable escorts, with UAVs and Helicopters, which is holding back the counter pirate effort and merchant protection.



Figure 12: HMS Daring conducting pre-service entry trials

Primarily this has happened because the UKNDA pursues an exclusive top down approach to lobbying rather than inclusive ground swell political campaign. The UKNDA is concentrating itself on influencing ministers and rallying former military personal to its standard; when the former have no wider body of 'voters' interested in the issue, and the latter are already prepared to pledge support but are very bad at presenting either a united front or actively mounting a political front to effect the government. It needs to change itself from focusing at the very top, if the MoD drives the debate too low, the UKNDA is focusing too high – they need to bring the bottom, they need to bring the defence debate to the same level as immigration and hospitals; equally complex topics but they are still given more debating space because they are at the level at which debate can and will take place.

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[1]. Defined as vessel as greater than 6000 – 12000 tons and not nuclear powered

[2]. Whilst the Future Carrier (Queen Elizabeth Class) is also important, without the destroyers to provide a layered protection against the swarms of cruise missiles and any aircraft which might leak through a Combat Air Patrol CAP, then the carriers and the amphibious ships will be tragically exposed. Layered defence, that is CAP and long range Surface to Air Missiles SAMs are what are necessary to provide a full spectrum defence for a modern fleet far from home (Hill J. R., 1988)

[3]. This is to be retrofitted into the first two vessels of the class when it is opportune

[4]. VLS is complete system of both launcher and controls, including software, which allows for the operation of a specific range of missiles

[5]. The MOD has been on a buy European tract recently; but it keeps having to then buy American to get the equipment it needs, the Euro fighter is a perfect example of this as it is only batch 3 which will be able to launch the bombs required for modern warfare, whereas the Joint Strike Fighter JSF (Britain and America's joint effort to replace the Harrier) is about 20% of the cost and even though it has not gone into production can launch or fire every weapon system either in use or projected

[6]. Minister for Science

[7]. SM-3, is the Standard Missile, the principle family American naval SAMs, they have multiple versions, with the SM-3 being the Anti-Ballistic Missile/Extended Range Area Air Defence missile; with a range of

250nm and a ceiling of 150nm. (Pike, 2008)

[8]. PAAMs is like the Aegis, it is a command, control and information system, however the Type 45 does not have phased array radar, and does not have missiles with the range of the SM-3 or SM-2ER

[9]. It is bigger, therefore might be large enough to take a modified missile, the A-50 due to its size is limited to Aster and Mistral missiles: the A-70 was selected for the Horizon class frigates, but when the project broke down the MOD changed and selected the A-50 in order to keep costs down

[10]. The Type 41 is probably the most common most tested VLS in the world; it carries the widest range of munitions available (Figure 7 is only about 25% of those available), because of its modular design it is capable of taking multiple sizes of missile. It is currently fitted in the USN's Ticonderoga class cruisers and Arleigh Burke class destroyers, examples from the rest of the world include the Anzac class frigates of the Royal Australian Navy and the Royal New Zealand Navy, the Canadian Iroquois class destroyers, the Netherlands De Zeveb Provincien class frigates, the Israeli Navy's Sa'ar 5 class corvettes, the Japanese Kongō class destroyers, the South Korean KDX-II & III class destroyers, the Spanish Álvaro de Bazán class frigates, the under-construction Norwegian Fridtjof Nansen class frigates, the German Navy's Sachsen, Brandenburg, and F125 class frigates and others.

[11]. In its RAF version it is called Storm Shadow and has a range (once launched) of 250km, its cost seems to vary though with Italy having paid \$270 million for 200 putting it at \$1.35million per unit, whilst the French senate is indicating it at €800,000 per unit or \$1,117,760 per unit; the RAF have not disclosed what they paid for it. This is all compared to \$575,000 per unit for the Tomahawks which are arguably better more proven systems.

[12]. From left to right, Tomahawk, VL ASROC, SM-2 IV (for runner of the SM-3), Aster 15, Aster 30, Sea Sparrow, and Evolved Sea Sparrow Missile (ESSM) quad pack

[13]. Some articles have three times the speed of sound

[14]. This point is especially important America has 61 Arleigh Burkes in its fleet and is still building, whilst Britain is only building 6 of the Type 45's, which is only slightly better in design and slightly cheaper to build; but is so under armed and un-versatile in comparison that they should never be put next to one another lest the rest of the world notices how hollow the British claims are. Whilst Britain does not need 61 destroyers, to guarantee at least one to defend the UK, and two deployed at other places in the world 9 would needed, to accept any level of battle damage and extremes of situation 12, if not the 14 originally asked for, would be required. Although if 6 more were to be built then A-50 VLS would probably be replaced with the Type 41 VLS.

[15] The RN likes specialist vessels still, although this might be a reaction to the MoD/Treasury and the need to sell it to them. It is after all easier to sell a vessel which has a single visible focus or mission that is easy for non-area specialists, not to understand, but to quantify.

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They say, cut your hair And say your prayers When you think of a girl Who doesn't care If you live or die So you start to cry  
The worlds are getting smaller The days are getting shorter The nights are growing colder And we're all growing older There's  
A growing cold and lonely And everyone The Type 45 class of destroyers[1] is arguably the Royal Navy's most important  
These 6 destroyers, of which the Royal Navy originally asked for 14, will be the core protection, presence, and support of all  
the Mediterranean (Freedman, et al., 1994), the South Atlantic (Woodward & Robison, 1992; AL (2009). The report of the type

of firepower and the equivalence to the Type 42s (Evans, 2006), which were considered inadequate (Evans, 2006).  
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