

B2.59 The CVF and Type 45 programmes represent a significant deviation from normal steady-state demand. It would be unwise to expand onshore capacity above current levels, only for it to contract rapidly after CVF delivery. Low complexity elements of CVF build are strong candidates for offshore provision, if UK steady-state capacity is exceeded and better value for money is offered elsewhere. After the Type 45 and CVF surge we will seek to ensure a managed transition to a more typical, less intensive build/integration activity. This will involve smoothing the work rate to sustain the Core Work Load.



Type 45 (Computer Generated Image).

We recognise the fragility of the design base and we will implement measures to exercise the capability when this is strategically necessary and can be shown to offer long-term value for money.

B2.60 Major design is a relatively infrequent activity naturally occurring just once per class. However, maintaining the platform design is a through-life activity, with updates and upgrades requiring significant design effort up until a platform's last refit (often with further application on disposal). By combining the new build and support design activities in a rationalised manner, a more sustainable capability is possible. This also offers the potential for whole-life cost reduction and capability enhancements, as well as long-term career paths for the associated engineers.

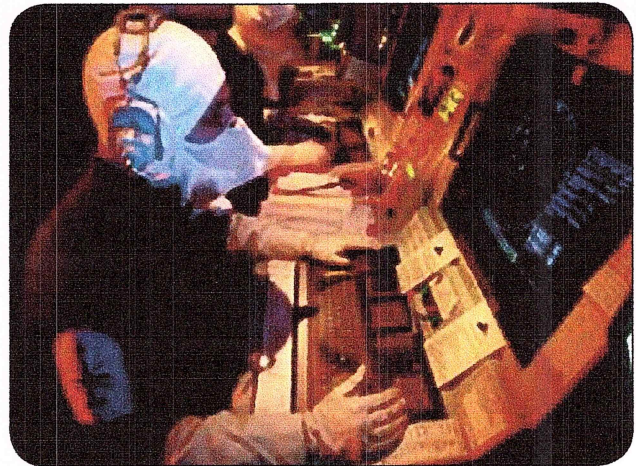
B2.61 CVF detailed design work will employ much of the nation's maritime engineering workforce to the end of the decade. However, early concept and architectural design requires a subset of this skilled workforce, which will need managed short term sustainment as their employment by CVF diminishes.

B2.62 Submarine design capability is at risk if long gaps emerge between first-of-class design efforts. The eleven year break between the design of Vanguard and Astute undoubtedly led to a loss of capability and impacted on the Astute programme. We now aspire to an eight year drumbeat to sustain the design capability through incremental improvements, both to drive down build costs and reduce subsequent support costs. In the short term key design effort will be focussed on improving these whole-life costs in the existing Astute design, particularly in areas that have direct benefit to subsequent classes.

B2.63 The submarine design programme will ensure options for a successor to the current Vanguard class deterrent are kept open in advance of eventual decisions, likely to be necessary in this Parliament. Cost-effectiveness will clearly be a key factor in any consideration of potential options, both submarine based and non-submarine based. For submarine-based options it will be very important that MOD and industry are able to demonstrate an ability to drive down and control the costs of nuclear submarine programmes. Industry will be fully engaged in ensuring that design efforts achieve the maximum impact in control of submarine build and support costs, so sustaining the potential for this significant future business and military capability.

Combat Systems sustainability and ongoing development will be promoted by the use of modern design and integration techniques, whilst facilitating integration of products from both large scale traditional suppliers and smaller enterprises.

B2.64 Combat System design and integration capabilities are a clear strategic imperative to deliver the required installed performance in maritime combatants. The adoption of planned and future upgrades will help to maintain the necessary suite of capabilities. In parallel, submarine and warship initiatives to converge towards a reduced set of core Combat System solutions will support the incremental approach. These common core Combat Systems will seek to exploit Modular Open System Architecture design philosophies, to enable continuous obsolescence management and affordable capability insertion across the Fleet.



Type 23 Frigate's Operations Room.

B2.65 The Surface Ship Combat Management System Convergence and submarine Common Core Combat System initiatives are both seeking to promote these strategies in the medium term. These initiatives have the potential to consolidate and retain the strategic capabilities necessary to form Combat System Architecture Authorities and support the specialist capabilities necessary to integrate modern high-technology sub-systems. A key objective is to exploit Open Architectures to allow SMEs, many from within UK industry and academia, to contribute niche capabilities in areas such as sensor algorithms, data fusion, security, and knowledge based systems.

B2.66 In the longer term we will investigate innovative methods of sustaining the UK's Combat System design, integration and acceptance expertise and associated facilities. We will welcome novel proposals from industry.

We will take specific measures to ensure sustainability of significant capabilities in 2nd and 3rd tier suppliers where these are at risk.

B2.67 We need further work to better understand the risks to 2nd and 3rd tier suppliers. Certain key capabilities have very limited sources of supply, which become fragile if they are not loaded or managed appropriately. Several levers exist to reduce exposure to this risk, ranging from increasing volume by amalgamating orders, to removing the critical component by redesign. We will work with primes to prevent the loss of key capabilities through failure of the supply chain. We are already moving in this direction with recent examples including procurement action to sustain the Astute Boat supply chain, and proposals to restructure aspects of the NSRP supply chain.

ASTUTE - endorsed but not covered post £ 24 month SSAB build drumbeat

B2.68 Frequently a significant proportion of the escalation in project costs occurs through bought-in equipment. It is imperative for the MOD and industry 1st tier suppliers to ensure that they manage exposure to cost escalations throughout the supply chain.

We will seek to work together with industry to develop and sustain our own capabilities.

B2.69 It is essential that we sustain the qualities necessary for the MOD to fulfil its obligations as a safe and competent owner and operator of its vessels. In some specialist areas our capability is fragile. Action is now in hand to redevelop these areas and to actively career manage associated disciplines. We anticipate this will include working with industry, using secondment and joint working to develop knowledge for the benefit of both the MOD and the private sector.

B2.70 A range of measures are being applied to improve our performance and coherence. For instance, Director General (Nuclear), based in the DLO, has been appointed as the single focal point for delivery of nuclear submarine programmes across the MOD. We are committed to change that enables industry to perform effectively and address overall long-term sustainability. In particular, we are developing a stream of work known as the Maritime Industrial Strategy (MIS).

MIS will be at the heart of developing a sustainable relationship between the MOD and industry.

B2.71 We have been working with industry on the MIS for some time, looking at how we can best tackle these difficult sustainability issues. This work is concentrating on more clearly identifying the likely volume and timing of future business, and defining in greater detail how we plan to maintain the sovereign capabilities we require. This includes defining the Core Work Load in discussion with industry. In parallel, we expect industry to begin restructuring itself around the emerging Core Work Load. The success of the MIS is ultimately dependent on companies' willingness to work together and draw their own conclusions. However, we need improvements in quality and efficiency if our programme is to be affordable. The MIS needs to define the routemap to delivering this whilst sustaining our sovereign capabilities.

B2.72 MIS now embraces the Submarine Acquisition Modernisation (SAM) and Surface Ship Support (SSS) projects. These initiatives were launched to address growing concern at the performance of elements of the sector. By combining these projects, examining both procurement and long-term support improvements, we recognize that a viable and sustainable Maritime Sector is dependent on a more coherent approach across both domains.

We will move ahead quickly to begin making the most of immediate opportunities.

B2.73 Under the MIS, we will immediately start negotiations with the key companies that make up the submarine supply chain to achieve a programme level partnering agreement with a single industrial entity for the full life cycle of the submarine flotilla, while addressing key affordability issues. The objective is to achieve this agreement in time for the award of the contract for the fourth and subsequent Astute class submarines in early 2007. This will be matched by the implementation of a unified submarine programme management organisation within the MOD.

B2.74 For surface ship design and build, we aim within the next six months to arrive at a common understanding of the Core Work Load required to sustain the high-end design, systems engineering and combat systems integration skills that we have identified as being important. We expect industry to begin restructuring itself around the emerging analysis as set out above to improve its performance. We will build on the momentum generated by the

industrial arrangements being put together on the CVF programme to drive restructuring to meet both the CVF peak and the reduced post-CVF demand. For surface ship support, we will start immediate negotiations with industry with the aim of exploring alternative contracting arrangements and the way head for the next upkeep periods, which start in the autumn of 2006. Key maritime equipment industrial capabilities will be supported by the production of a sustainability strategy for these equipments by June 2006.

The high work load in the immediate Maritime Equipment Programme opens a window of opportunity for industry to do things differently.

B2.75 The increased demand of the next few years will diminish after the middle of the next decade. Although over-capacity offers the theoretical prospect of competition, this is unlikely to be sustainable in a shrinking market. Value for money may soon be delivered better through alternative strategies. For example, one fully loaded allocated stream of surface ship build might offer better value for money than several partially loaded streams in competition. We have been working to smooth out the long term cyclical demand for naval warships and provide a more predictable future for ourselves, and industry. But this more stable future can only be achieved if the design, manufacturing, support and integration capacity within the industry is matched to that pattern of demand. There is a clear need to streamline the businesses, making them more efficient and profitable, removing duplication and establishing clear centres of excellence, to meet our requirements and maximise the military export potential. This is good for the Royal Navy, the taxpayer and for the long term sustainability of the industry.

B2.76 Our shipbuilding industry needs to renew itself and there is a window of opportunity to do so, now. By taking this opportunity head on and tackling the challenges it presents, there can be a fundamental shift from seeking profit through volume, to profit derived from excellent delivery, long-term support, and the continual improvement of the military capability available to the front line.



HMS ARGYLL.