



Can the United Kingdom Rebuild Its Naval Fleet?

Challenges and Opportunities for the UK Shipbuilding Industrial Base, 2005–2020

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Over the next 15 years, the United Kingdom is planning to replace and scale up its naval fleet. During this period, up to six new ship programmes—the Type 45 destroyer, the Future Aircraft Carrier (CVF), the *Astute*-class attack submarine, the Joint Casualty Treatment Ship (JCTS), the Military Afloat Reach and Sustainability (MARS) ship, and the Future Surface Combatant (FSC)—will, at times, be in various stages of design and construction. Some of these will be the largest of their type built by UK industry in quite some time. Not all these programmes will be in production concurrently; but even so, the United Kingdom will experience a much busier naval shipbuilding period in 2007–2011 than it has in recent years.

Only a handful of UK shipbuilders can potentially produce these ships. After decades of declining orders that have led to consolidations and foreclosures, today just three major firms build Royal Navy ships: BAE Systems, Swan Hunter, and VT Shipbuilding. Another three firms are primarily involved in warship repair: Babcock Engineering Services, Devonport Management Limited, and Fleet Support Limited.

This situation has prompted defence policy-makers to consider whether the UK Ministry of Defence (MOD) shipbuilding plan is feasible given the constraints of the industrial base; whether shipbuilders, ship repairers, and industry suppliers are robust enough to meet the demand; and whether alternative production strategies might better serve the MOD.

Evaluating Shipbuilding Supply and Demand

RAND Europe explored these issues by evaluating the supply and demand of the UK shipbuilding

Abstract

The United Kingdom faces numerous challenges in producing warships from now through 2020, including developing a sufficiently sized and skilled workforce, updating facilities, and maintaining viable producers. To address these challenges, the UK Ministry of Defence (MOD) needs to consider shifting production timings to more evenly distribute future demand, seeking better cooperation between the shipyards to share work, coordinating the MOD shipbuilding project teams' plans and strategies, exploring alternatives to competitive procurement, and considering the use of nontraditional suppliers.

industry's labour, facilities, and suppliers in light of the MOD's 2004 procurement plan and of five alternative scenarios: one in which funding and/or requirements decrease; one in which funding and/or requirements increase; one in which a new, large-sized submarine is designed and built; one in which design and production timings are changed; and one in which programmes experience delays. Our analysis was based on information obtained through a series of interviews and surveys with the shipyards, suppliers, and MOD officials.

How Will the MOD Programme Affect Shipbuilding Labour?

Labour Demand

The MOD's 2004 shipbuilding plan requires that four large programmes—the Type 45, CVF, MARS, and *Astute*—overlap. This will likely cause

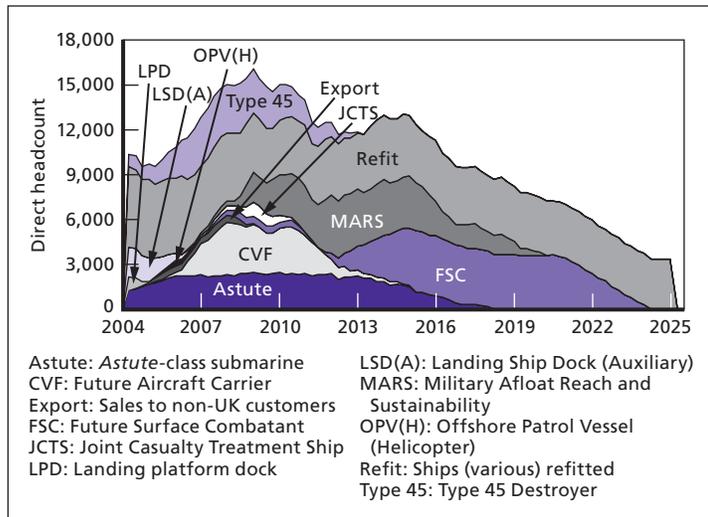
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demand for labour at shipyards to rise, peaking around 2009 at a level some 50 percent higher than current demand levels. Once past the peak, overall workload demand steadily declines for the foreseeable future (see Figure 1).

Figure 1
Future MOD Labour Demands by Naval Warship Programme



Structural and outfitting trades will likely receive the most significant increase in demand in absolute terms. Demand for technical workers, however, will drop off sharply in the near term as a result of the rundown of the design work for the Type 45 and Astute. Thereafter, the trend reverses dramatically as the CVF, MARS, and JCTS programmes place near-simultaneous demand for technical workers.

The MOD could reduce these peak demands by level-loading the ship production plan, which would involve starting some programmes at different times, extending their build schedules, and/or increasing the build intervals.

Labour Supply

The number of shipyard workers could drop from its 2005 level of more than 12,000 to around 4,600 in 2020 if no steps are taken to replenish the workforce through hiring apprentices, workers from other industries, or the unemployed. An aging workforce accounts for this drop, and many shipyards have undertaken recruiting and training schemes to address the issue. However, shipyards will find it difficult to grow to meet peak production labour demands even with additional recruiting and rehiring efforts. Given their recent growth rates, shipyards might not be able to grow quickly enough to meet peak production labour demand. For the technical workforce, shipyards currently have enough workers to grow to meet the

anticipated peak, but only if they retain those workers through the near-term downturn.

How Will the MOD Programme Affect Shipbuilding Facilities?

In addition, the shipbuilding programme will place demands on shipyard facilities. In particular, demand for final assembly and outfitting facilities (docks, slipways, piers, land-level areas, etc.) will be especially high between 2006 and 2010. Many of these facilities have been sized to build the smaller ships that the MOD has ordered in the past. Thus, shipyards will have to invest in and upgrade facilities to meet future MOD orders of larger ships, particularly the CVF and MARS. Another complicating factor is that any delays in the planned shipbuilding programme could create facility constraints.

How Will the MOD Programme Affect Shipbuilding Suppliers?

With non-shipbuilder suppliers providing more than half the value of each naval vessel, their ability to meet the MOD's anticipated demand is an important industry capacity consideration. Our surveys of both shipyards and suppliers indicate that an increased workload should not be problematic for the supplier base. For the most part, suppliers do not rely on MOD business and are less subject to variations in demand than the shipyards. However, suppliers have indicated that the uncertainty in the MOD's programme hinders their ability to plan and invest in a timely way.

Issues for MOD Consideration

We made a number of observations that might help the MOD manage its long-term shipbuilding programme. In the short term, the MOD should consider ways to level-load its future labour demand, work with civilian authorities to encourage training in shipbuilding skills that can be transferred outside the industry after the labour demand peak, relax its industrial policy to mitigate problems caused by peak labour demands, and encourage the use of more outsourcing by shipyards to manage their workloads.

In the mid- to long term, the MOD should make long-term industrial planning a part of its strategic process, define an appropriate role for the offshore industry in meeting the future MOD programme, encourage long-term industrial investment through multi-ship contracts, reconsider the feasibility of its competition policy in light of industrial base constraints, and explore the advantages of common or compatible design tools.

By taking these recommendations into consideration, the MOD will be better able to manage its long-term shipbuilding programme and the industrial base that supports it. ■

This research brief describes work done for RAND Europe and the RAND National Security Research Division documented in *The United Kingdom's Naval Shipbuilding Industrial Base: The Next Fifteen Years*, by Mark V. Arena, Hans Pung, Cynthia R. Cook, Jefferson P. Marquis, Jessie Riposo, and Gordon T. Lee, MG-294-MOD (available at <http://www.rand.org/publications/MG/MG294/>), 2005, 216 pp., \$30.00, ISBN: 0-8330-3706-4. MG-294 is also available from RAND Distribution Services (phone: 310.451.7002; toll free: 877.584.8642; or email: order@rand.org). The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. RAND® is a registered trademark.



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