

An alternative future for the Scottish shipbuilding and aerospace industries

Inherent uncertainty of UK defence procurement

The future of the UK's defence procurement policy is uncertain. There will be a Strategic Defence and Security Review in 2015, after the next Westminster election. An exchange of views between the current Chief of Defence Staff (CDS) and a former First Sea Lord gave an insight into the internal battles taking place within the Ministry of Defence (MoD). In a speech to the Royal United Services Institute on 18 December, General Sir Nicholas Houghton, CDS, argued that there was a need to rethink defence policy in a way that would have major implications for procurement. He reiterated the assessment of future threats identified in the National Security Strategy – terrorism, international crime, energy resources, critical national infrastructure, climate change and cyber warfare. He recognised the need to look at wider threats to human security. State-based threats, which much of current procurement policy aims to address, are, at least in the short term, absent. Houghton argued that the MoD needs to “better prioritise its money towards things which are most relevant to the security demands and capability needs of the future”.¹ He was particularly concerned about the implications of acquiring exotic new equipment. Houghton warned that the MoD, especially the Navy, was in danger of having “exquisite equipment, but insufficient resources to man that equipment or to train on it”. This he described as a “hollow-force”. The CDS was critical of skewing defence procurement in order to sustain particular sectors of industry.

If Houghton's approach is adopted this would not mean a curtailment of all high tech development, but there would be a change in focus. Rather than building large sophisticated land, air and naval platforms which are designed for conflict with a nation with similar capabilities to our own, the focus would be on developing technologies to assist with communications, logistics, intelligence, etc.

The CDS's approach also recognised that public concern about conflict meant that it was more difficult for the MoD to obtain the funding that they would like. In contrast, Admiral Lord West, in an article in the Daily Telegraph on 21 December 2013, made a strident plea for a bigger defence budget. In a rebuttal of Houghton he claimed, “I cannot think of any current naval platforms that are profligate”. The transparent squandering of billions of pounds on Trident and two aircraft carriers, leaves West's argument unconvincing and outdated.

The exchange between these military heavyweights took place in the aftermath of George Osborne's budget statement on 5 December 2013, which indicated that the defence budget will face further substantial cuts. Commenting on this debate, Malcolm Chalmers of RUSI pointed out that Trident and its replacement would consume 10% of the defence budget by around 2020. In this context, he said, “it must be asked whether it is being proposed that the UK should abandon plans to upgrade, and ultimately replace, other major systems, such as the Royal Navy's Type 23 frigates or the RAF's Typhoon aircraft”.² Chalmers had earlier pointed out that spending on nuclear weapons and nuclear

¹ Annual Chief of Staff Lecture, General Sir Nicholas Houghton, RUSI, 18 December 2013.

<http://www.rusi.org/events/past/ref:E5284A3D06EFFF>

² Let Debate Commence: Key Strategic Questions for the 2015 SDSR, Malcolm Chalmers, RUSI, January 2014

http://www.rusi.org/publications/newsbrief/ref:A52D66D2E8A623/#.UxBvON_vAk

submarines would take up 35% of the core equipment budget by 2021/22.³ In this climate Trident renewal is in competition with other major projects, such as the Type 26 Global Combat Ship and future aircraft orders.

West emphasised that it was important to retain a sovereign capability to produce key items of defence equipment. However military production today is so internationalised that this is no longer significant. For example, even the Trident nuclear warhead contains three major and fundamental components which are purchased off-the-shelf from the US. The argument about the need for sovereign capability is only made by politicians when they are trying to protect defence jobs in their own constituency, or by military chiefs trying to protect their own pet projects.

In 2005 the MoD had listed protected areas where there was a need to retain a domestic capability. Industry wanted this to be repeated in a 2012 report. However the department failed to do this.⁴ Instead they adopted a less focused approach. The defence aerospace sector was uneasy about this change. The MoD, in the light of expenditure limits, is placing more emphasis on competitive tendering and less on protecting domestic defence capabilities. The purchase of new aircraft carriers, in order to support the shipbuilding industry, is likely to be seen as an example of how not to make defence procurement decisions.

A report by the Royal Aeronautical Society in 2012 expressed concern about the future of the UK defence aerospace industry. It warned that the defence part of the industry faced a more uncertain time than civil aerospace. It said that government promises had been vague and that some MoD policies had “tended to work contrary to the interests of an indigenous military aerospace industry”.⁵ There was concern about the limited prospects of the Typhoon programme. The report warned of “a decline in onshore design and development engineering expertise” and that, as a result, there was “a grave risk of long-term decline in the defence aerospace sector”.⁶ The decision of the United Arab Emirates to pull out of a potential order for 60 Typhoon aircraft has cast further doubts over the sector.⁷

Potential for civil marine and aerospace manufacturing

There is substantial overcapacity in global shipbuilding and 80% of major cargo vessels are built in Japan, China and South Korea. However, sea transport remains the most cost effective way of moving a wide range of goods and the opening of new sea routes across the Arctic offers new opportunities.

³ Mid-Term Blues? Defence and the 2013 Spending Review, Malcolm Chalmers, RUSI, February 2013
http://www.rusi.org/downloads/assets/Briefing_Mid_Term_Blues.pdf

⁴ National Security Through Technology, MoD, February 2012.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/27390/cm8278.pdf

⁵ The future of UK defence aerospace, Royal Aeronautical Society, November 2012.
<http://aerosociety.com/Assets/Docs/Publications/DiscussionPapers/FutureUKDefenceAerospaceDiscussionPaper.pdf>

⁶ ibid

⁷ Telegraph, 20 December 2013

The difficulties of moving from defence to civil shipbuilding were identified in a 2005 report for RAND.⁸ Most commercial vessels are larger but simpler than warships. Construction of military vessels often involves complex technologies, exotic materials, high value sensitive engineering and exacting standards. The report argues that it would be a challenge for UK warship yards to successfully enter the commercial market, but it also notes that “the shipbuilding industry is a volatile one, and unpredictable events can give rise to unexpected opportunities” and that “there are indications that there may be good times ahead.”⁹ RAND say that, if we want to make this change, the UK should be prepared to accept a substantial degree of risk.

The European civil shipbuilding industry is continuing, largely by focusing on the production of specific types of vessels. One of the recommendations in the European Commission’s LeaderSHIP 2015 strategy for Maritime Technologies was “competitiveness through excellence”.¹⁰ The subsequent LeaderSHIP 2020 report lists the different sectors of the industry and the potential of each.¹¹

There is interest in “green ships” and in the introduction of green technologies in the maritime sector. Currently shipping is responsible for 3% global CO2 emissions. Design changes can be made and technology introduced which increases the energy efficiency of vessels. In addition emissions from ships can be reduced and improvements made to reduce the potential for accidental discharges to the environment.

LeaderSHIP 2020 includes four security-related areas. These may be suited to sites with experience of military work:

1. The production of patrol vessels which are designed to be able to carry out a range of modular mission packages including disaster relief and oil spill recovery.
2. The incorporation of Unmanned Aerial Vehicles (surface or air) on civil vessels for use in fishery protection or other detection activity.
3. Development of equipment to improve the safety of passengers and crew in the event of accidents.
4. Development of integrated anti-piracy systems including sensors and non-lethal weapons.

Under the heading “offshore oil and gas” the report notes that the Anchor Handling Tug, Supply (AHTS) fleet is aging and that demand was increasing. New vessels should be more flexible with increased fuel efficiency.

⁸ Differences between military and commercial shipbuilding, implications for the United Kingdom’s Ministry of Defence, RAND, 2005

http://www.rand.org/content/dam/rand/pubs/monographs/2005/RAND_MG236.pdf

⁹ ibid

¹⁰ LeaderSHIP 2015: Defining the future of the European shipbuilding and shiprepair industry, European Commission, 2003.

http://ec.europa.eu/enterprise/sectors/maritime/files/shipbuilding/leadership2015_en.pdf

¹¹ LeaderSHIP 2020: The Sea, New Opportunities for the Future, Brussels, 8 February 2013

http://www.industrial-europe.eu/database/upload/pdf/leadership2020-final-report_en.pdf

Scotland's substantial potential for offshore wind projects creates a need for installation vessels. New vessels are likely to be more efficient and technologies will be developed for working in deeper water. Smaller vessels are required for support and in some cases these could also be able to support offshore oil and gas work. In addition there will be opportunities arising from the development of wave, current and tidal energy.

The future is brighter for the UK civil aerospace industry than for its defence counterpart. A report by KPMG in 2013 says that "the rapidly growing global civil aerospace market ... provides a significant opportunity for the UK".¹² Passenger air traffic is expected to increase and it is predicted that 27,000 new aircraft will be required between 2013 and 2031. There will be particular growth in Asia, the Middle East and South America which are expected to order 58% of new aircraft. KPMG argue that UK aerospace is well positioned to take advantage of this growing demand.

Potential for defence diversification

There is a contrast between the way in which the UK aerospace and shipbuilding industries have developed in recent decades. Shipbuilding has become more focused on the domestic defence sector. Within the aerospace industry there has been a shift from defence to civil production. There is also a strong export component in both civil and defence aerospace.

Raytheon employ around 500 people in Glenrothes. Some of their work involves the production of military components, for example for Paveway IV bombs. The site also manufactures a range of civil items, including fire safety systems, vehicle anti-roll sensors and monitors for hospital patients, including premature babies. There is potential to shift this plant away from defence production by expanding the civil work carried out.

The work at Selex ES in Edinburgh (1,300 employees) is focused on the defence sector. Currently 700 people are employed on projects related to Typhoon. However, some other sites within the company concentrate on civil work. It should be possible to divert the specialised skills and capabilities, in radar and other electronic systems, to support the civil aerospace sector, including air traffic control.

Thales, who employ 700 staff in Govan, produce optical systems, including submarine periscopes, range finders for armoured vehicles and reconnaissance pods for Typhoon. Today these components are electronic systems. Most of the work at this Thales plant involves optoelectronics. There is scope for applying the same technology and expertise to civil optoelectronic work, for example for medical equipment. The thermal imaging and infra-red technologies could also be adapted to civil applications.

Rolls Royce employ 2,100 workers in Scotland. They are due to close their East Kilbride plant and to focus their efforts at their Inchinnan site. In addition to work on aero-engines for Typhoon aircraft they carry out a range of civil work, including gas turbines for aerospace, maritime and energy

¹² The future of civil aerospace, KPMG, June 2013

<http://www.kpmg.com/UK/en/IssuesAndInsights/ArticlesPublications/Documents/PDF/Market%20Sector/AerospaceandDefence/the-future-of-civil-aerospace.pdf>

markets. The anticipated growth in civil aerospace and marine renewables should enable Rolls Royce to shift away from military production.

Further work should be carried out to identify the potential for the shipbuilding and ship repair sites (Govan, Scotstoun, Rosyth and Faslane) to become involved in the civil sector, including support for renewable energies. Lessons should be learnt from the two Scottish yards which have continued in the civil sector - Ferguson in Port Glasgow and MacDuff in Fraserburgh.

Impact of Scottish independence

BAE have indicated that they plan to build a new facility in Scotstoun which can then be used for the construction of the Type 26 Global Combat Ship. It is unlikely that Scottish independence will have a major impact on the likelihood that these vessels will be built on the Clyde.

With independence there is the potential that the Scottish Government could try to shift defence shipbuilding towards the production of simpler vessels, which would be more appropriate for a small nation. It would be easier to obtain export orders for such vessels and this would also make the transition to civil construction easier.

A key step that should be taken, with or without independence, is the creation of an effective Scottish Defence Diversification Agency which can carry out research and support concrete measures to realign Scottish industry. In the event of a Yes vote, there is particular potential for such an agency to have an impact on diversification, because defence powers will rest with the government in Edinburgh.

The government of an independent Scotland should develop its own strategy for supporting civil aerospace and should carefully consider how to relate to the current UK Aerospace Growth Partnership.¹³

Scottish independence is likely to result not just in the removal of nuclear weapons from Scotland, but in the London government deciding to scrap its nuclear weapons' programme. Current SNP proposals envisage the removal of nuclear weapons by 2020 and the removal of nuclear-powered submarines by 2026. Faslane would then be transformed into the base for the Scottish navy. In addition to this, the government of an independent Scotland should look at opportunities for diversification at the Clyde naval base, particularly with regard to the Coulport site and the future employment of the 500 civilian staff whose current jobs are directly related to the Trident programme. Cancellation of the Trident replacement programme would have an impact on other companies in Scotland, such as Thales in Govan. One task of a Scottish Defence Diversification Agency would be to identify the potential for adapting the skills and resources at this plant towards civil optoelectronics work.

The old pattern, relying on domestic defence contracts, is unlikely to survive, with or without independence. The Scottish aerospace industry can take advantage of future growth in the global demand for aircraft and can build on the UK's recent initiatives to support the sector. Scottish shipbuilding should be encouraged to get out of the cul-de-sac of relying on domestic defence

¹³ <http://www.theagp.aero/>

contracts and to move into the civil sector, mindful of the risks and costs that will be involved in the short term.

John Ainslie, August 2014