

**DEFENCE INDUSTRY**

As the recent Defence Industries Council report (discussed in the opening section of this issue) makes clear, the UK defence industry makes a positive contribution to the country's security and economy. This is likely to be the case for the defence industries of other countries. Guy Anderson continues his survey of defence industries in major non-Western countries, as he looks at China's recent industrial reforms and the outlook for continued increases in spending and further reform. There are, of course, industrial advances in the Western world and Dr Robbin Laird reports on the new approach to manufacturing in the F-35 programme and whether its significance is appreciated by the US authorities.

Another aspect of industrial changes is the move to partnering and alliancing, and this is now a significant way of doing business in UK in the wake of the MoD's Defence Industrial Strategy. Jenny Charteris of CPRC looks at alliancing in future acquisition, while Phil Jones of Babcock describes the Warship Support Modernisation Initiative as an example of partnering between MoD and industry. Another example of MoD-industry cooperation is described by Mike Reece of BAE Systems.

# China and the Defence-Industrial Renaissance

by *Guy Anderson and Jon Grevatt*

*Guy Anderson is editor and lead analyst of Jane's Industry Quarterly and Jane's Defence Industry, London; Jon Grevatt is industry analyst for Asia-Pacific, Jane's Defence Industry, Bangkok. Here they examine how the major increases in Chinese defence and procurement spending are changing the country's defence industry and what this means for the future.*

A prolonged period of technological and industrial stagnation slowed the development of China's defence ventures until the 1990s.

**China – Industrial Reform and Progress**

A programme of extensive restructuring was launched during the latter part of the last decade to make the country's industrial base leaner, more efficient and better positioned to meet the high technology needs of the People's Liberation Army (PLA).

Structural changes were accompanied by a sharp rise in funds for both procurement (see Figures 1 and 2) and research and development (R&D), which began to turn around the performance of the military sectors. Consequently, the defence industries were able to step up the design, development and production of new generations of warships, aircraft, satellites, missiles and other sophisticated military systems.

Despite the improved performance, *Jane's* noted that China's defence industries continued to suffer from a certain amount of structural, organisational and institutional problems that are barriers to innovation, project management and systems integration. To an extent, these issues persist. Such obstacles – which appear to have been recognised by China's government – threatened to thwart the successful development of next-generation projects that the country's military requires to narrow the capability gap with other advanced arms producers by 2020 – a stated goal.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Total Defence Spending</b>	144.2	170.78	190.79	220	247.50	297.94	355.5	418.2	480.69	563.84
<b>Procurement</b>	5.93	7.03	7.85	9.05	10.28	12.21	15.41	20.11	23.11	27.11

Figure 1: Chinese defence spending – procurement and total

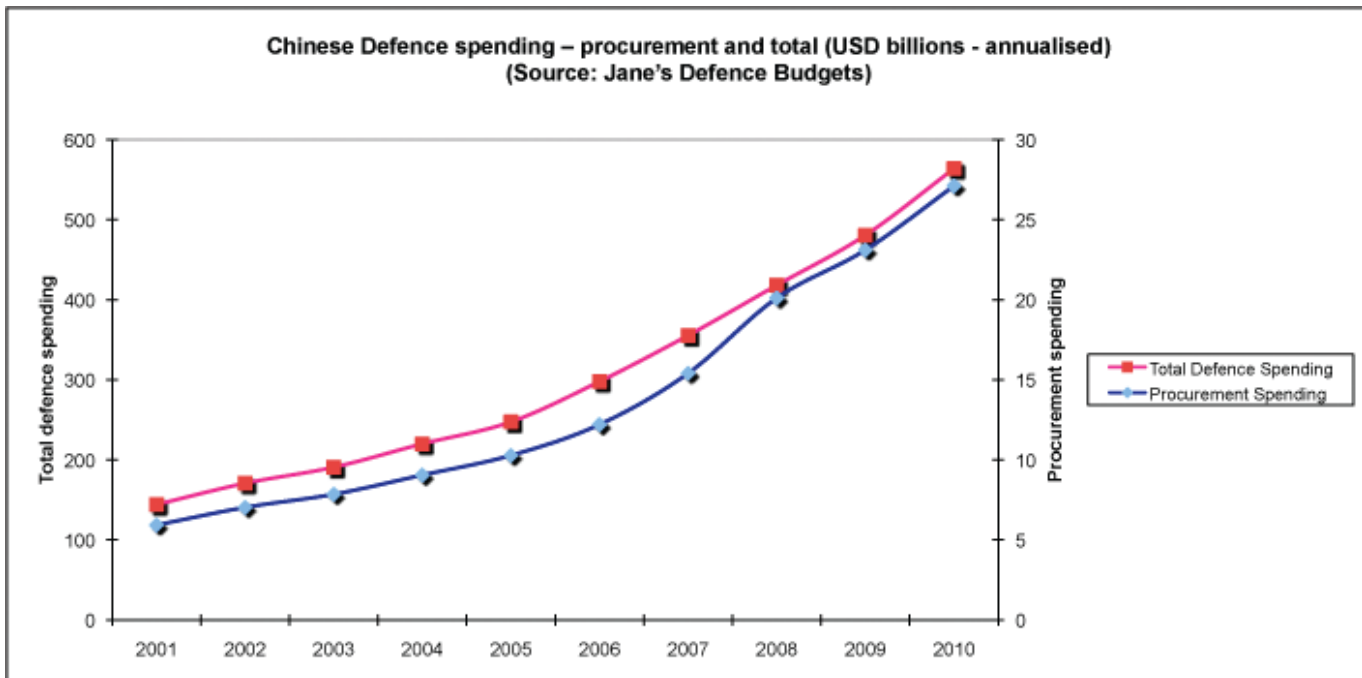


Figure 2: Chinese defence spending – procurement and total (US\$Bn - annualised) (Source: Jane's Defence Budgets)

Consequently, China's defence industries (which comprise approximately 10,000 state-controlled organisations) are currently on the brink of another period of significant reform and modernisation.

This latest drive – which *Jane's* expects to lead to even greater strides over the next ten years than during the current decade and the 1990s – is backed by unprecedented financial support from Beijing.

## ***A programme of extensive restructuring was launched to make the country's industrial base leaner, more efficient and better positioned***

### **Unprecedented Financial Support**

In early 2009, the government of China introduced an economic stimulus programme that resulted in three major firms receiving more than US\$60Bn in state-funded loans. China's Aviation Industry Corporation (AVIC) received advances totalling US\$36.7Bn; and China State Shipbuilding Corporation (CSSC) and China Shipbuilding Industry Corporation (CSIC) received loans totalling US\$14.6Bn and US\$8.8Bn respectively. None of the companies issued announcements detailing how the funds were to be deployed, but *Jane's* believes it is reasonable to conclude that the aim was to accelerate industrial modernisation and to bring financial stability at a time of wider global economic turbulence.

Furthermore, Tai Ming Cheung, a senior fellow at the University of California Institute on Global Conflict and Co-operation, told *Jane's*: "From 1998 to 2003 firms were pulled out from their Maoist central planning legacy and earlier this decade they solidified this reform and made strong progress on R&D, expanding linkages to the commercial system, and built solid reform. Now the foundations are in place to move forward and push up a gear, and to develop at a faster rate. The economic stimulus programme will help to speed up this programme by providing additional funds to key defence and high technology firms to improve their infrastructure and R&D activities."

### **Current Reforms and Issues**

In recent communiqués, Beijing has acknowledged the institutional problems which its defence assets continue to face. *Jane's* believes many of the current issues are a consequence in part of a centralised, state-run defence industrial model.

China's Commission of Science Technology and Industry for National Defence (COSTIND – since superseded by the State Administration for Science, Technology and Industry for National Defence) – stated in 2007 that it was introducing more reforms aimed at increasing competition between enterprises; outsourcing certain non-strategic, defence-related activities to the private sector; increasing private ownership in state-run enterprises; opening up a proportion of the equipment budgets to privately owned Chinese companies; and encouraging foreign investment in non-strategic defence sectors.

Furthermore, COSTIND also reported in 2007 that it was encouraging defence industries to expand into the



Officers of the People's Liberation Army [Allen/Jane's HIS Global]

manufacture and trade of products for civil use and to raise funds through commercial markets. The China National Aero-Technology Import and Export Corporation (CATIC – the nation's largest aviation industry trading company) subsequently announced that it was actively seeking strategic investors.

Perhaps more significant is an announcement made in January 2009 by China Aviation Industry Corporation that it plans to list 80% of its 200 subsidiaries by 2011. As further evidence of China's plans to increase competitiveness, *Jane's* notes that AVIC was re-merged in November 2008 (thus combining AVIC I and AVIC II after a decade of separate operation). Beijing announced through state sources that the move was intended to focus the combined group on its core businesses.

It is significant that the Chinese government has also reduced the number of defence projects being undertaken in order to improve efficiency. Furthermore, organisations receiving allocations of development funds have been forced to improve their financial management to prevent corruption. *Jane's* notes that a reason for the relatively poor performance of Chinese defence industries in the development of new systems was partly attributable to R&D funding being spread too thinly. As a result, crucial programmes sometimes lacked sufficient funding.

#### Progress and Western Disquiet

It is arguable that China's defence industrial base will have a positive future if a disciplined approach is taken to existing reforms and funding. Indeed, the US Department of Defense (DoD) has noted in its reports on Chinese military prowess (such as the annual reports on the Military Power of the People's Republic of China) that the country's defence organisations will continue to benefit over the coming years from increased government funding for research, development and procurement; increased partnerships with academic institutions, plus transfers of technologies and skills

from foreign joint ventures and the acquisition of foreign military and dual-use technologies.

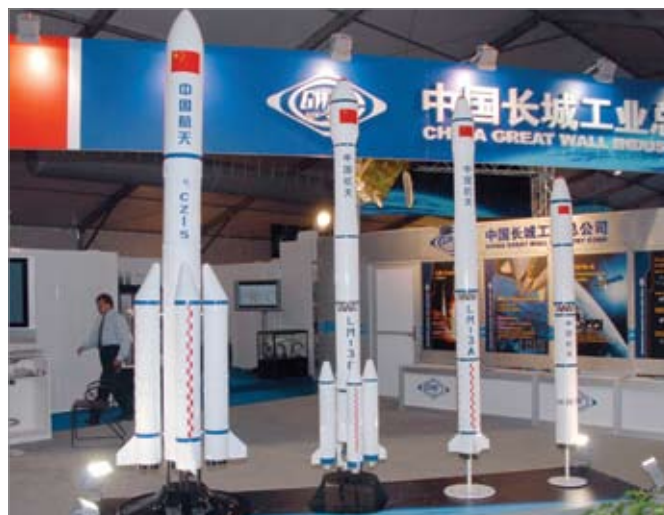
It is the latter issues that appear to have caused greatest disquiet in the US. The DoD's Military Power of the People's Republic of China 2009 report – released in March this year – argued that the "broad-based transformation" of China's defence companies into an industrial base capable of producing advanced weapon systems was reliant on foreign dual-use technologies.

It noted that, "China's defence industry has benefited from integration with China's rapidly expanding civilian economy and science and technology sector, particularly elements that have access to foreign technology. Development of innovative dual-use technology and an industrial base that serves both military and civilian needs is among the highest priorities of China's leadership".

### ***Broad-based transformation of China's defence companies into an industrial base capable of producing advanced weapon systems was reliant on foreign dual-use technologies***

The report went on to note that progress within individual defence sectors "appears to be linked" to their integration into the global production and R&D chain, particularly in the commercial field.

Furthermore, a US Congressional report published in 2007 by the US-China Economic and Security Review Commission



Model display of Chinese rockets [Allen/Jane's HIS Global]

said that the US needed to move to “slow or stop the flow” of commercial technologies to China by “providing additional funding for US export control enforcement and counter-intelligence efforts”.

China, for its part, appears to acknowledge the impact of joint ventures and cooperation arrangements in commercial sectors with Western firms on the development of its military capabilities.

In 2007, China’s former vice premier Zeng Peiyan said the development and production of commercial aircraft in the country (China has deep-rooted relationships in this regard with market leaders such as Airbus and Boeing) would “boost economic development, meet a rising demand for air travel, make a great advancement in science and technology” and – significantly – “strengthen national defence”.

#### Outlook – Spending and Reform

The continued reform of China’s defence industrial base appears underpinned by strong defence spending and government support. According to China’s official figures, defence spending has seen annual double-digit increases since the early 1990s and has nearly quintupled since 2001 (see Figure 1). It is evident that expenditure has risen to

meet the military requirements of the 11<sup>th</sup> Five Year Plan (2006 – 2010) and China has already identified the period until 2020 as its “window of opportunity” in which it can match or surpass its competitors in terms of capabilities.

It can be argued that continued reform will need to run concurrently with continued strong defence expenditure if China is to achieve its goals. One advantage that the country does have is the centralised control of its strategic industries: if the political will to introduce reform persists, then there will be few barriers to implementation.

While it is notable that there have been competition-based reforms to drive the efficiency of state-run ventures, private-sector involvement is limited and is likely to remain so over the coming decade. Although reforms have opened up the possibility of foreign and domestic companies investing in defence-related companies in China, control of the industry remains – and is likely to remain – firmly with the state.

Without the motivating force of true market competition, there is a risk that companies will have less incentive to innovate and become more efficient, hindering the development of modern indigenous capabilities. ■



Yitian short-range air defence system on a WZ551 chassis armed with TY-90 surface-to-air missiles [Allen/Jane’s HIS Global]