



## Industry faces a tough decade

The huge US military budget is shrinking but China is spending more than ever, writes **James Blitz**

The defence industry is coming to the end of what many of its senior figures regard as a golden decade.

Ten years ago, in the immediate aftermath of the September 11 attacks, the US government began a huge injection of cash into the Pentagon budget.

Over the course of the decade, the US annual defence budget has doubled in cash terms to reach nearly \$700bn in 2010. The profits of the US defence industry have quadrupled over that period. The country has come to dwarf all other nations in the amount it spends on military equipment.

Now, however, the tap has been turned off and defence companies in the US – as well as in Europe – face more challenging times. The US government is deeply in debt. Some senior executives in the industry believe Congress will take out up to \$1,000bn from the core Pentagon budget over the next decade.

As the west winds down its involvement in Iraq and Afghanistan – and after the killing of Osama bin Laden, the al-Qaeda leader – it is hard to imagine anyone making a case for increasing US defence expenditure.

One strategic threat is very much on the minds of US policymakers: the military build-up of China. In the past five years, Beijing has expanded its capability at a pace that has taken many defence experts by surprise. The People's Liberation Army has evolved from being an internally focused force to one that regularly deploys overseas. In the course of 2011, China has flexed its military muscles, deploying an aircraft carrier and stealth fighter for



As the west winds down its involvement in Iraq and Afghanistan, defence companies in the US and Europe face more challenging times

the first time. China's defence budget grew 7.5 per cent in 2010 – faster than that of most other countries in the world.

But while policymakers in Washington are becoming increasingly alarmed by the challenge from China, the threat is unlikely to halt the retrenchment of US defence spending in the near future. In 2010, China's defence budget was one-tenth the size of that of the US. Its

defence assets are still some way from being at the technical level of those of the west. "The technological gap between China and the US could narrow but it will not disappear for a long time," says Malcolm Chalmers of the Royal United Services Institute (RUSI). "The US has an accumulated advantage going back decades."

As a result, defence companies in the US must face up to a

demanding environment. The pressures are even greater in Europe, where national governments, including the UK, have taken an axe to military budgets over the past few years in response to the budget crunch.

Defence groups are having to cut costs aggressively in order to survive. They are also engaging in a frantic search for new markets. As Alberto de Benedicis, chief executive of Finmecc-

anica UK, puts it: "Over the next few years, managements will be called to task. People in the defence sector will need to be more proactive about the way they run their businesses."

The shadow of cuts and delays is already being seen over existing programmes. In the US, the F-35 Joint Strike Fighter multirole jet, whose lead contractor is Lockheed Martin, is a project worth more than \$380bn.

The jet is expected to come into service over the next six years. But Robert Gates, the former defence secretary, said just before leaving office this year that he thought "the size of the buy" might have to be cut.

In Britain, the Ministry of Defence is also pressing ahead with substantial equipment programmes. By far the biggest is

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## Suppliers fight for contract to camouflage US army

### Uniforms

**John O'Doherty** finds the military hiding beneath a 'coffee stain'

Chocolate chips and coffee stains may at first blush sound like unpleasant discoveries lurking underneath the cushions on an undergraduate's sofa, but for the US Army, they are something far more serious. These culinary terms are also some of the colloquial names given to camouflage patterns used by militaries around the world. As the US Army tenders for new patterns this autumn, these and other models will be studied and retooled to equip the country's next generation of soldiers.

The contest has attracted the attention of designers the world over, as the prize for this top-secret couture show is to see the winning pattern worn by more than 500,000 customers.

Bringing order to the clothing of the US Army is a difficult task. For an organisation rooted in discipline and uniformity, there is a surprising diversity among the outfits of its members.

The official camouflage is Acpat, a pattern consisting of small squares of differing colour, each less than 1cm in size. The squares create a pixelated effect, and when it was first chosen in 2004, it was hoped that Acpat would become a universal camouflage pattern (or UCP), that could be worn in deserts, cities or woodland.

This universal-pattern goal would obviate the need for separate patterns for each deployment.

"Operations do not take place exclusively in one environment," points out Colonel Matthew Tresidder of the British Army's defence clothing team, which has now initiated a UCP for the UK military.

"If you were to look at operations in Iraq, yes, troops started off in the desert, but very quickly you go to where the population

centres are, so you very quickly get taken into urban areas or areas around the marshes, oases or the oilfields, where it's not just desert any more.

"Wearing a yellow suit makes you stand out. What you want is something that will blend in against a variety of backgrounds and that's the advantage multi-terrain camouflage has."

But while Acpat worked reasonably well for the US Army in Iraq, the terrain in Afghanistan proved more challenging. The landscape varied from desert to lush forest, and from grassland to mountain scrub.

In theory, this was precisely the landscape for which Acpat was suited, but the pattern ended up making soldiers more visible, not less, prompting the US Army in Afghanistan to switch to another universal style pattern, Multicam, by Crye Precision.

But Acpat and Multicam are not the only patterns worn by the US Army. It already has two desert patterns: the "chocolate chip" pattern worn in the Gulf war and now abandoned, and a three-colour "coffee stain" pattern, still used by

the Army's civilian personnel. The traditional green and brown woodland pattern is still used by its Special Forces units.

Camouflage serves two principal – and essentially contradictory – purposes. It aims to disrupt the appearance of the wearer in the eyes of the enemy, so the soldier cannot be seen, and to identify the wearer to other armies by using a distinctive pattern, creating the closest thing that mili-

"You want something that blends in against a variety of backgrounds"

taries have to a brand. It is this branding process that will be most helped by the current US Army competition. While Multicam was a stop-gap replacement for clothing only, the new competition will seek to create a "family" of four camouflage patterns: a jungle/woodland pattern, a desert pattern, a universal pattern and a pattern that will go

on equipment such as trucks and armour that are more expensive to change than clothing.

The idea is to have different colour schemes for each of the requirements, but a similar underlying pattern that is recognisably the US Army "brand".

The entrants have been experimenting with a number of approaches, incorporating ever more sophisticated designs.

"Our pattern is designed from fractals, which are the repeating shapes found in nature," says Guy Cramer, chief executive of Hyperstealth Technology, which has submitted a pattern to the competition.

"We incorporate those shapes into the patterns. So the actual fractal pattern is something your brain has seen before and wants to ignore. It doesn't want to waste any time reanalysing something that is common in that background."

One of Hyperstealth's patterns is already used by the Jordanian army, and it makes the official snow-terrain pattern used by the US Marine Corps.

However, it will be extremely difficult for outsiders to make assessments about submissions, as many of the companies have kept them secret, locking their websites to non-military personnel. This keeps competitors from stealing patterns, but more importantly, designers say that a previously unseen pattern can confuse enemy forces for a split second at close range as they try to establish the wearer's affiliation.

"Camouflage works on memory," says Jason Simione, president of Bulldog Equipment, and designer of Mirage, a pattern formerly used by US special forces in Afghanistan.

"If you see a guy in Acpat or Multicam you know they're US army. That's why we don't put out pictures of it. The first time I want somebody to see it is when a guy pops up and they [the enemy] go 'what the?' and it's too late. That second of hesitation is where you win every time."



The US Army's official camouflage is Acpat

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## Defence

## Smoke clears after the budgetary bonfire

## UK military

After swinging cuts, clarity is slowly returning, writes **James Blitz**

Britain's armed forces have been through an immense upheaval over the past year. But while there has been much confusion and inter-service squabbling throughout 2011, there is now greater clarity about the future shape of the UK military than there was a few months ago.

A decade from now, the Army, Royal Navy and Royal Air Force will all be smaller. But David Cameron's government can make the case that Britain will still be a leading military power, with close to a full spectrum of defence capabilities.

For 12 months, Britain's armed forces have been in

the throes of a crisis that is all about money.

When the Cameron coalition came to power last June it inherited a string of problems. The UK had not held a strategic defence review since 1998 and it faced a budgetary overhang of at least £38bn because commitments had been made to buy equipment for which no cash had been set aside.

Moreover, the era of increasing defence spending in real terms year on year was at an end. The global financial crisis meant the coalition knew it would have to cut the Ministry of Defence budget in real terms.

As a result, the past year has been a period of drastic action. The comprehensive spending review in October 2010 cut the MoD budget by more than 8 per cent in real terms by 2014-15. The subsequent Strategic Defence and Security Review fleshed out the detail. The SDSR announced that Britain

would have no aircraft carrier capability for the next decade and introduced cuts in the number of fighter jets and surface ships. It announced, too, that the number of civil service and military personnel was being cut by at least 42,000 over the next four years.

Yet even this was not enough to balance the books. Last July, Liam Fox, the defence secretary, was forced to announce what was effectively a second SDSR, cutting the regular Army from 102,000 to 82,000 by 2020 – its lowest level since the Boer war at the end of the 19th century.

This has been hugely painful for the armed services. In a year that has seen the UK fighting in Afghanistan and Libya, it has also been politically controversial. The Labour opposition says the MoD budget has been cut too far and too fast and the government's defence strategy is rushed and incoherent.

Still, defence experts say

there are several reasons why the government can claim to have got its broad strategy on defence right.

First, Mr Fox is making a serious effort to get a grip on the MoD's hitherto chaotic finances. One reason why there has been an atmosphere of crisis in defence is that the MoD and the Treasury have stopped taking a "buy now, pay



'The MoD should be able to maintain capability' – Prof Chalmers

tomorrow" approach to the equipment programme.

Now, decision-making is far more rigorous. Bernard Gray, the new head of defence materiel, has built in more comfortable contingencies for cost overruns. Ursula Brennan, the new MoD permanent secretary and accounting officer, refuses to approve new

equipment purchases without a clear indication that there is underlying funding.

Second, the government can argue that, despite the cuts, Britain will end the decade with a modernised, world-class military.

There have been compromises, to be sure. There is deep unease in the regular Army at the way in which land forces will rely in future on more part-time reserves.

But by 2020 the UK will have a new aircraft carrier, new joint strike fighters and a new fleet of hunter-killer submarines. It will also be one of the few Nato countries where spending on defence will still be over 2 per cent of gross domestic product.

As Professor Malcolm Chalmers of the Royal United Services Institute says: "It is important not to overstate the extent to which long-term military capability has been damaged. Provided that the government sticks to its

spending plans, the MoD should be able to maintain a wide spectrum of capability, albeit on a reduced scale."

Finally, there is now a little more optimism that the MoD's vision for the armed forces in 2020 will match Britain's ability to fund it.

For much of the 12 months, service chiefs have lamented the fact that the 2020 Future Force plan requires an annual real-terms increase in spending of 2 per cent after 2015.

This seemed unrealistic. But by announcing a range of decisions in July – cutting the size of the Army and giving a commitment to increasing the equipment budget by 1 per cent a year after 2015 – Mr Fox may have a vision for defence that looks more financially credible.

As Professor Chalmers puts it, the July announcements "look as though they have eliminated the remaining funding gap".

## British gun company aims high

## Sniper rifles

There is big money to be made in small arms, finds **John O'Doherty**

When the toolmaker David Walls went to a barbecue in suburban Sussex in the late 1970s, he had no idea that a friendship he formed over charred hamburgers would see him supplying sniper rifles to the British army.

Thirty years on, the company that he and his friends formed with the barbecue contact is still going strong. Accuracy International is now also making sniper rifles for the Swedish and German armies, as well as the US Special Forces and marksmen teams in UK police forces.

As engineers for a precision toolmaking company in Lancing, West Sussex, Mr Walls and his colleague David Caig had already become incredibly popular in their local gun club, where the two men were amateur target shooters.

"We were often approached by fellow members at the club, because if a gun went wrong they might want a small part made, and we used to have it knocked up in our dinner breaks," says Mr Walls.

Soon, word got out and the pair were doing work for other gun clubs in the area.

"We used to do work for a drink in those days," says Mr Walls. "If you make a new firing pin you'd get a beer for it. But it got to the point where we were making so many firing pins and mending so many people's guns, that we risked being drunk, so we had to start charging!"

In addition to fixing guns manufactured by others, the pair began replicating existing pistol models from scratch.

It was these replica revolvers that the men took to a barbecue organised by a fellow gun-club member. The Olympic medallist shooter Malcolm Cooper, who happened to be attending the same event, was impressed by the pistols, and suggested the men make a rifle for him.

"Cooper got hold of one of our rifles and he went and shot a world record with the thing, and that more or less kicked it off," says Mr Walls.

The men soon left their day jobs to work on rifle-making, and occasionally repaired guns in Mr Cooper's gun shop.

But it wasn't until the end of the Falklands war that their small rifle business had its first major success. In the early 1980s, the British army began a search for a new sniper rifle to replace the Lee Enfield L42A1, a converted version of a 1950s rifle.

The new Conservative government was eager to tender beyond the existing system of approved defence contractors, and Accuracy International decided to throw their hat into the ring.

"There were 17 other major competitors, such as Parker Hale, BSA, Winchester, Remington and Mauser," says Mr Walls. "They were all in it, and we never thought at that time that we'd win."

However, the rifle won

the entire order, supplying 1,200 rifles in total throughout the 1980s. Subsequent contracts saw Accuracy International become the first non-German small-arms company to win a contract for the German military and in the 1990s, the company developed a special cold-weather rifle for the Swedish army.

But in spite of their continued success in winning contracts throughout the 1990s, trouble was brewing. Though still directors of the company, Mr Walls and Mr Caig had sold their stake in the business to Mr Cooper, who in turn sold his stake to 3i, the private equity group, before he died in 2001.

"The company basically had a lot of debt associated with the sale," says Tom Irwin, who joined the company 10 years ago and is a director now.

"They brought in a new management team, which subcontracted out everything that had been built in-house. It was subcontracted primarily to aerospace machine shops, which gave good quality, but they also gave very high prices."

The group racked up debt of over £3m (\$4.2m) by the end of 2003 and was forced into receivership in 2005, having been pushed into a loss the previous year. In May of 2005, Msrs Wall and Caig along with Mr Irwin, who was then a subcontractor for the group, bought

The wars in Iraq and Afghanistan continue to favour the development of rifles with an ever-longer range

back the company for an undisclosed sum. It is now run by Mr Wall and Mr Irwin who are co-directors of the group, with no official chief executive or managing director position. Mr Caig works for the group as a consultant.

"We started with 11 people including the four of us, and we had two machine tools and now we've got 20 machines and 50 employees," says Mr Irwin.

In 2009, the latest year for which the group has released accounts, the company had a pre-tax profit of £1.2m on revenues of £7.4m. There is no sign yet of a slowdown in revenues from defence cutbacks.

The demands of the wars in Iraq and Afghanistan continue to favour the development of rifles with an ever-longer range to protect snipers from retaliatory fire.

Two years ago, the group's AWM rifle was used by a British soldier to record the longest-ever confirmed kill by a sniper, when a single bullet passed through two Afghans from 2,475m, roughly a mile and a half, away.

While the company does not rejoice in grisly records such as this, the group's directors are not morally troubled by the use of their product.

"We believe more lives are saved as a result of these products," says Mr Irwin.

Mr Walls agrees: "If there's a sniper out there, the enemy does not want to be around. So in actual fact you save lives, because you keep the enemy out."

## European cutbacks raise US concerns

## Western alliance

Nato states plan to increase their pooling of resources, reports **James Blitz**

Can the nations of Europe begin to reverse their collective decline as a global military power? The question has been coming to the forefront of discussions between US and European politicians in the course of 2011.

Over the past few years, Washington policymakers have expressed growing concern that the US does the heavy lifting in global security while Europe seems keener to do softer, humanitarian operations. But in recent months, a range of factors have raised US concerns to a more critical level.

A fundamental driver of US worries about Europe's military capability is the extent to which European states are cutting back on defence spending. The US, to be fair, faces its own budgetary pressures and is cutting the Pentagon budget.

But the pace at which Europe has moved to slash military budgets is striking. As Anders Fogh Rasmussen, Nato secretary-general, said in a speech in February, Europe has in the past two years reduced defence spending by a figure equivalent to the value of the annual German defence budget.

Declining military expenditure in Europe is not the only issue. The US has also indicated that its own perspective on global security is changing. Since the second world war, Europe has been at the core of Washington's security concerns. But, increasingly, its attention is absorbed by challenges from China.

Washington's approach to the Libya conflict this year may have been an important signal about its changing priorities. The US backed the call for intervention by the UK and France. But at an

early stage, the US stunned its allies by leaning back, leaving European nations to use their military jets and helicopters to conduct ground attacks.

The US decision on Libya to "lead from behind" exposed Europe's lack of will and capability when it came to conducting a humanitarian intervention in its own back yard.

This prompted a tough speech in June from Robert Gates, US Secretary of Defense. He lamented the way Nato was running an "air operations centre designed to handle more than 300 sorties a day and struggling to launch about 150" against a relatively puny enemy.

Mr Gates's speech was the most forthright statement on European military weakness from a leading US figure in recent years. It prompted many to wonder whether Europe can meet the military challenge. Given the scale of Europe's budgetary crisis, few expect cuts in national defence budgets to be reversed.

Instead, the big question is whether European states can get more bang for their buck by pooling and sharing resources. The European Union's 27 nations spend half as much on defence each year as the US. But there is such widespread duplication among defence ministries across the EU – both in terms of operations and procurement – that much of that effort is wasted.

The good news is that some nations seem aware of this problem. The UK and France, the EU's two big defence powers, last year launched an unprecedented programme of bilateral co-operation, signing treaties covering their conventional and nuclear programmes. The Scandinavian states have for some time pushed forward moves for closer co-operation.

Nato is alive to the challenge. Mr Rasmussen wants next summer's alliance summit in Chicago to see an important set of agreements that will see Nato's 28 members pooling resources.

There are hurdles ahead, however. Without a common Euro-



Shortcomings in European capabilities have been revealed during Nato's air campaign against Libya

AFP/Getty

The EU's 27 nations spend half as much on defence each year as the US, but there is widespread duplication

pean foreign policy, there will always be limits to how far states are willing to share their capabilities with other nations that might not be keen to go to war.

There is particular concern about the role of Germany, whose defence budget is the third largest in Europe after those of the UK and France. While Germany has pushed through a significant reform of the Bundeswehr, it seems reluctant to push ahead the kind of co-operation undertaken by France and the UK.

In short, those who follow the agonising tale of European defence co-operation believe there will be no big-bang agreement

soon. Instead, as Tomas Valasek, of the Centre for European Reform, has argued, Europe will see the emergence of what he calls "islands of co-operation".

Mr Valasek's prediction seems realistic, if pessimistic. The question is whether this process will ultimately prove to be too slow, given the way the US is recalibrating its global view. It may be that some external shock, perhaps from Russia, will be needed to prompt the Europeans to get their act together more seriously on defence co-operation.

At any rate, Mr Gates has issued a clear warning of the dangers if Europe fails.

## Industry faces a tough decade

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the plan to build a submarine platform for the UK's independent nuclear deterrent, a project that will cost about £25bn.

But the MoD is in the throes of a savage budgetary cut equal to 8 per cent in real terms over the next four years. As a result, political debate may yet intensify in the UK over whether the nuclear deterrent is financially viable.

Last year, the Saudis signed a deal with Boeing for the sale of \$60bn worth of jets, including F-15 fighters. States which are concerned at China's growing military role – most notably Japan, South Korea and

Australia – will provide strong demand for new equipment.

Two other nations, however, are attracting particular attention. One is India, which is seeking to enhance its security advantage over Pakistan and responding to the growing military might of China. It is emerging as one of the world's biggest arms buyers, especially of fast jets.

Brazil also plans to increase spending on military assets, thanks to high economic growth rates. There is speculation it could increase its order for fast jets to more than 100 over the next 15 years.

Competition among

defence exporters will be tough – especially if China follows Russia's tradition of being an exporter of capability to these markets.

US and European compa-

nyes may have to rethink how they do business. One big pressure they face is to offer purchasing countries a partnering arrangement, allowing them to develop a

local capability or produc-

tion line, creating jobs and skills in the region. "If India buys large numbers of Eurofighters, it won't want them all produced in the UK or Germany"

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# A tiger awakes to challenge Chinese military

## India

**James Lamont** looks at long-overdue modernisation efforts in the armed forces of the world's largest democracy

If ever there was a potent reminder of the need to modernise India's ageing defence capability, it was the regular tailspins and nose-dives of its Russian fighter jets. The MiG-21 is known among the brave ranks of the Indian Air Force as the "flying coffin". Of the almost 800 MiG-21s inducted into the Indian Air Force since 1963, more than 350 have been lost in accidents, killing about 170 pilots.

Air Chief Marshal N.A.K. Browne, the head of the IAF, is counting the days until the country renews its strike force, which currently consists of Russian, British and French aircraft. At the end of last month, he said India's pilots would be "greatly relieved" when the country finally agreed a contract for the supply of 126 jet fighters, worth \$11bn.

The Medium Multi-Role Combat Aircraft, or MMRCA, deal is one of the biggest arms deals in the world. India, which has relied heavily on Russian supplies during the past 50 years, is one of the biggest arms buyers, with a military budget of Rs1,420bn (\$31bn) a year.

A closely watched competition has pitted US, Russian and other European aerospace companies against each other. All have extended a hand of industrial partnership in order to win a prize that promises a strategic reorientation by the world's largest democracy.

While headlines are notoriously fluid in India, many now consider the deal to be in the final lap, and down to price. Air Marshal Browne says he expects the contest, narrowed to a choice between the Eurofighter and France's Rafale, to be concluded by the end of the year.

Snubbed US competitors Boeing and Lockheed Martin have found consolation in govern-



India's \$11bn contract for the supply of 126 jet fighters has been narrowed to a choice between the Eurofighter, pictured, and France's Rafale

Reuters

ment-to-government deals between Delhi and Washington.

Delhi has bought C-17 military transporters to improve the forces' airlift capacity, as well as Poseidon maritime surveillance aircraft. In Washington, multibillion-dollar defence orders for India's 1.5m-strong armed forces are viewed as a vital component in cementing ties between the two countries.

Air Marshal Browne has another reason to be "relieved". Among India's military leadership and security hawks, China looms larger and larger as a potential threat. They are particularly concerned about what they identify as a "collusive threat" posed by a nuclear-armed neighbour, the traditional foe Pakistan, and the growing military might of China.

China's supply of weaponry to

Pakistan, particularly JF-17 jets, has fuelled these suspicions. So too has China's assertiveness over territory in the Himalayas and at sea. Delhi was alarmed by a challenge to an Indian naval vessel by the Chinese navy in July off the coast of Vietnam – described by Indian officials as the first "incident" of its kind.

China has also rattled India's defence establishment by parading technological breakthroughs, like its own aircraft carrier and ship-busting missiles, all of which could come to challenge India's dominance of the Indian Ocean and crucial shipping lanes between the Middle East and Asia.

India has been no slouch itself. Although 70 per cent of its military hardware is imported, it has launched its

own stealth frigate and a nuclear submarine modelled on a Russian design. It has tested a range of longer-distance missiles, including a supersonic cruise missile called the Brahmos, and boasts a capable space programme.

Closer to the ground, military planners carefully eye what the US, UK and France have done to equip their infantry better.

Some private Indian companies, including the Tata Group, Mahindra & Mahindra and Larsen & Toubro, have a growing interest in developing their defence expertise in partnership with international defence groups.

Increasingly, international investors see opportunity among India's small, technologically advanced defence companies. Yet some senior officers

now openly voice their concerns about the gap in defence capabilities that has opened up between big-spending China and what they see as "dithering" in corruption-prone Delhi.

The officers complain that military spending, just over 1 per cent of gross domestic product, is hampered by fears in the civilian government of over-militarisation and the need to spend more on development than arms. They identify key vulnerabilities in cyberwarfare and China's record of reverse engineering advanced technologies, as opposed to India's lumbering public sector defence companies.

Nonetheless, India's military establishment is looking more to its eastern border, where the Chinese invaded, albeit briefly, in 1962. A programme of infrastructure and airfield improve-

ment is under way to give greater reach into the Himalayan region. The army is pushing for a \$2.5bn Mountain Strike Corps, which would lead to the deployment of a greater number of high-altitude troops (required to operate up to a height of 20,000 feet).

China holds lessons, just as it poses a threat.

Jasjit Singh, director of the Centre of Air Power Studies in New Delhi, says India's challenge is to build a defence industry base rapidly after what he says was 250 years of de-industrialisation under British colonial rule. He estimates that the process is only 10 years old.

"India is in the process of an industrial technological revolution, and at the forefront is the aerospace industry. But we are still at the beginning," he says.

Air Marshal Browne says that China has some of the answers. One is that India's defence companies should devote far more resources to research and development.

The second is that India should not try to "go it alone" – as it has with the 30-year development of the Light Combat Aircraft or Tejas – but rather "learn from" licence agreements with foreign partners.

In the manuals of the integrated staff headquarters at India's Ministry of Defence, diagrams show a fighting force typically has 30 per cent advanced, 40 per cent current and 30 per cent obsolete equipment.

Getting closer to this blueprint, and retiring the MiGs and Lee Enfield rifles, is a top priority for India's longer-term security.

# Drawn-out contest to win contract causes casualties

## Brazil

**Samantha Pearson** explains why the favourite does not always win

It was at the 80th birthday celebrations of a former president in late June when it all started to go wrong for Nelson Jobim, then Brazil's defence minister.

He was quoted as saying he was surrounded by "idiots" – a comment he later claimed was directed at journalists.

After a series of other blunders, including admitting that he had voted for President Dilma Rousseff's opponent in last year's election, he was forced to resign in August.

For US-based Boeing, Sweden's Saab and Dassault of France, Mr Jobim's exit is the latest in a series of setbacks to a \$5bn deal to build 36 fighter jets for the air force.

The three companies were selected in September 2008 as finalists to win the contract, but after political upheavals and budget concerns, they will now have to wait until next year for a decision.

At a time when business for these companies has plunged across developed markets, the chance to help Brazil upgrade its ageing fleet of fighter jets is worth fighting for.

While the contract itself is likely to be worth about \$5bn, Brazil could increase the order to more than 100 aircraft over the next 15 years. Maintenance contracts spanning decades should be particularly lucrative.

However, as the example of the past three years goes to show, doing business in emerging markets, and even in relatively politically stable ones such as Brazil, is often a challenge.

Until the beginning of this year, France's Dassault had looked like a clear winner, with its 50-foot-long Rafale model. Luiz Inácio Lula da Silva, Brazil's

previous president, had strong ties with President Nicolas Sarkozy of France and after signing a multibillion-dollar defence agreement with France in December 2008, Mr Lula declared Dassault as the preferred choice.

Given that Mr Jobim was defence minister under Mr Lula and continued in his position when Ms Rousseff took over in January this year, accepting Dassault's bid appeared a mere formality for the new president.

The Rafale has been used by the French air force since 2006 in a string of combat missions in Afghanistan, but the deal with Brazil would have been the first time it had been sold abroad.

However, Ms Rousseff made it clear that all bets were off when she took office. She has since pursued stronger political ties with the US and, after a visit by President Barack Obama in March, Boeing has become the new favourite with its F-18 Super Hornet.

The Super Hornet, which is powered by General Electric engines, first flew in the US in 2007 and is reported to carry a lower price tag than Dassault's Rafale.

Analysts say the departure of Mr Jobim a few weeks ago may also boost Boeing's chances of winning the contract, as it distances the new government

further from the promises made to Dassault under Mr Lula.

"We think it's a level playing field and that when we are judged on our merits, we will prevail," says Joe McAndrew, Boeing Defense, Space & Security's vice-president of international business development for Europe, Israel and the Americas.

Celso Amorim, Brazil's new defence minister, has not yet made any public statements on the contract, but all three companies have recently been asked to

'Brazil has an enormous interest in technological innovation and we see it as a long-term partner'

present their bids again to the Senate and confirm their pricing is still valid.

To add to the confusion, Brazil's government said in July it would have to postpone the final decision to early 2012 in order to focus on "the domestic agenda".

Concerns over the impact of the global financial crisis and rising inflation, which is now running above target at 7.1 per cent a year, has put pressure on the government to cut spending.

However, the difficulty for Dassault, Boeing and

Saab, is that the longer the contract has been delayed, the more the government's priorities have changed, explains Nelson Doring, a military expert who runs a specialist magazine called Defesenet.

"The issue today is no longer about which is technically the best aircraft," Mr Doring says. "The contract is changing and the focus now is much more about which manufacturer can offer more benefits to Brazil's industry."

Since the finalists were selected in September 2008, Brazil's currency has soared more than 40 per cent against the dollar, damaging exporters' competitiveness and crippling parts of the domestic industry.

"The defence sector offers a real alternative for the country to avoid a scenario of 'deindustrialisation'," explains Orlando José Ferreira Neto, a vice-president at Embraer, the aviation group and head of the Brazilian Defence and Security Industries Association.

For this reason, the bidders have started to stress the "technology transfer" aspects of their bids.

In August, Boeing said it would provide a full transfer of technology if it won the contract, enabling Brazil to produce fully the Super Hornet.

Saab has made similar pledges if Brazil agrees to buy its Gripen aircraft. The Swedish company plans to produce up to 80 per cent of the structure of the aircraft in Brazil and also transfer intellectual property rights to local companies.

"Brazil has an enormous interest in technological innovation and we see Brazil as a long-term partner," says Bengt Janér, Saab's director for Brazil.

However, the small size of Sweden's export market compared with the US may ultimately favour Boeing, especially as all three companies are presenting relatively similar aircraft and proposals.

As Dassault's experience shows, being the favourite does not necessarily mean emerging the winner.



## Civil aviation – flying high?

An Aerospace Special Report – 14 November

In November the Financial Times will publish an Aerospace Special Report to coincide with the Dubai Airshow.

As a separate section in the newspaper and online at FT.com, the report will set out the agenda for a defence sector that is being asked to provide radical solutions at the same time as funding is under increasing pressure.

The Aerospace Special Report is a leading component of the FT's wide-ranging coverage of a strategically vital industry.

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Brazil seems to favour Boeing's F-18 Super Hornet

AP

## Defence



Suppliers of military equipment have also been taking a closer look at their industrial footprint in search of savings they can pass on to the Department of Defense

AFP/Getty Images

# Bye, big spender, as budget is scaled back

## US

**Jeremy Lemer reports on unfamiliar territory for military contractors – working to a tight budget**

Since the terrorist attacks of September 11, 2001, defence companies have feasted on a surge of spending by the US military. Wars in Iraq and Afghanistan drove revenues and profits ever higher as the Pentagon bought equipment and services.

Ten years on, the outlook is very different. In May 2010, Robert Gates, then Secretary of Defence, signalled the change in clear terms. “Given America’s difficult economic circumstances, the gusher has been turned off, and will stay off for a good period of time.”

Faced with the prospect of substantial reductions in US military spending and demands from the Pentagon for cheaper equipment, big defence

companies have found themselves in an unfamiliar position – having to cut costs aggressively in order to survive.

“On the defence side of our business, all of our customers are asking us about cost reduction and affordability,” says Scott Thompson, who leads the US aerospace and defence practice at PwC, the professional services firm.

“They want to know how to do more without more. That is the number one area of focus right now.”

In May, a sombre Bob Stevens, chief executive of Lockheed Martin, the biggest defence contractor in the world by sales, reflected the new mood, telling reporters that “the global security environment... is only growing more volatile and more complex, while economic resources are sure to be constrained. That’s why we’ve been giving cost reduction and affordability a top priority.”

Headcount has been an early target. Companies such as BAE Systems, the biggest UK defence contractor by revenues, have begun to slash personnel

working on defunct programmes. Lockheed has reduced its workforce by more than 20,000 people in the past two years, mostly by attrition.

Lockheed has been particularly aggressive, asking hundreds of mid-level managers to take early retirement and freezing the salaries of senior executives in order to reduce its central costs. The company expects the moves to save more than \$350m over the next five years.

A tougher line from the Pentagon, demanding greater “productivity” from contractors to help offset pressures on the military’s budget, has served to reinforce the new-found resolve among defence companies to keep a check on costs. Under the title “Better Buying Power”, the Department of Defense has introduced stringent efficiency measures.

Analysts note that the years of rising budgets have created plenty of fat to cut. “The defence budget has been going up since 1999. Inefficiencies have inevitably crept into the system,” says Rob Stallard, an analyst with RBC Capital Markets, the invest-

ment banking arm of Royal Bank of Canada. He adds: “There are considerable costs to be taken out if companies are motivated to do so, and now they are.”

Indeed, companies have also been taking a closer look at their industrial footprint in search of savings they can pass on to the DoD.

L-3 Communications, the US

Faced with substantial reductions in US military spending, big defence companies have to cut costs aggressively

defence electronics and services company, and ITT, the US conglomerate that includes a substantial defence unit, have both consolidated business units and factories.

David Wajgras, chief financial officer of Raytheon, the US defence contractor, says the new environment

has led to an important shift in emphasis. Until recently, he says, defence companies had been more focused on producing the most technologically advanced equipment, rather than the most cost-effective.

“Given the fiscal environment that the world finds itself in, there is going to be an increased focus on the cost side of the equation,” he told the FT in an interview at the Paris Air Show this summer. “But we all have to be very thoughtful that you don’t sacrifice the technological components just to save on costs.”

He says that Raytheon saw the downturn in defence spending coming and has been rationalising the business since 2005. At the moment, it is working to reduce the number of suppliers it uses in order to extract lower prices from its partners.

Still, Mr Thompson at PwC points out that there are limits to the savings the defence industry can achieve. Unlike commercial companies, defence contractors tend to produce things in relatively small batches, which raises costs, while the necessity

of securing key skills can make efficiency a secondary priority.

At the same time, Mr Thompson notes, “there are two sides to this equation. It is not just about how the contractors perform, it is also the Pentagon’s behaviour which drives a lot of costs.” He points to the unwillingness of the services to collaborate on programmes, and excessive project oversight, as cost drivers.

And some industry executives worry that the renewed focus on cost-effective products may have unintended consequences, encouraging the brightest engineering students to pass over the defence industry in favour of sectors that are exploring cutting-edge technology.

Dan Crowley, president of Raytheon Network Centric Systems and previously the head of Lockheed’s F-35 fighter jet programme, is cautious but optimistic. “Do we have something as exciting as a moon shot? No, but students like the challenges of material science, of software technology and communications. And that is what the military is focused on.”

## Franco-British deal ruffles allies’ feathers

### Pilotless aircraft

**BAE Systems and Dassault Aviation will co-operate on drones, writes James Boxell**

When Peter Luff, the UK’s defence equipment minister, spoke to business leaders this summer about the Anglo-French military treaty, the most closely followed part of his speech concerned the future of drone aircraft.

Indeed, the most eye-catching industrial development to emerge from the treaty is an alliance between the UK’s BAE Systems and Dassault Aviation of France, the two countries’ fighter jet manufacturers.

The companies have signed a memorandum of understanding to build a next-generation “medium-altitude, long-endurance” unmanned aircraft, which could be used eventually by the French and British armed forces to provide surveillance and so-called “situational awareness” on the battlefield.

The choice of name for the new programme, Telemos, reflects the task the aircraft will need to perform. In Greek mythology Telemos was the prophet who warned the cyclops Polyphemus about an attack by Odysseus.

An assessment phase is planned to start this year, once the two countries’ defence ministries complete the delicate diplomatic task of sketching out an initial agreement. Roughly €50m (\$70m) of funding has been set aside for the work, though the eventual cost of a full development would run into the billions. The ministries need to make a final procurement decision, but delivery would be expected between 2015 and 2020 if all goes to plan.

However, the flurry of excitement around the BAE/Dassault tie-up – and hostility from companies not invited to the party – goes beyond the potential crea-

tion of a new surveillance drone. Some believe that the partnership could provide the building blocks for the much more ambitious project of developing the countries’ next generation of fighter jets, which are expected to be unmanned.

In the most interesting part of his speech, Mr Luff drew the attention of the assembled executives to the fact that both France and Britain were assessing what to do when their home-built fighter jets (the Dassault Rafale and Eurofighter Typhoon) leave service by about 2030.

The present combat fleets are expected to be the last piloted variants built.

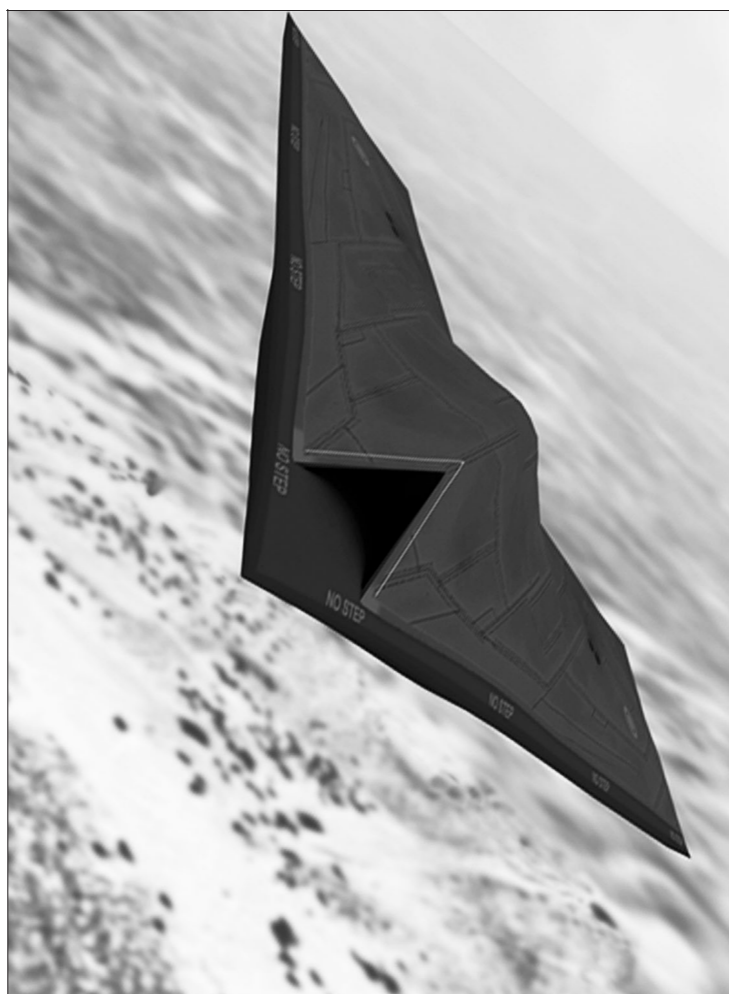
As a result, he said, the BAE/Dassault collaboration – if successful – could offer the best way for the two countries to hold on to their jealously protected fighter jet building expertise at a time when their governments’ spending is becoming ever more constrained.

The fact that the stakes are potentially so high explains why rival companies appear so miffed. EADS, Europe’s biggest aircraft maker, is particularly annoyed that the French and

The partnership could provide the building blocks for developing the next generation of fighter jets, expected to be unmanned

the British appear to have chosen to ignore its efforts in the unmanned air vehicle (UAV) field, namely the Talarion medium altitude, long-endurance aircraft.

There is also unhappiness that the Franco-British plan leaves allies such as Spain, Italy and Germany out in the cold. EADS is threatening to produce a rival aircraft. This could mean Europe has two competing fighters again, as it does now with the Typhoon and Rafale (three if



Lessons from BAE’s Taranis project will be used in Telemos

you include Sweden’s Gripen). Dave Kershaw, the strategy director for UAVs at BAE, says his company would be “open to working with more partners, if the two governments wanted to further share costs”.

However, the British Ministry of Defence has decided to take a strictly “bilateral” approach after the unhappy experiences of broad multi-country European collaborations such as Eurofighter, or the contract negotiations for the A400M military airlifter.

Defence officials on both sides of the English channel also point to the fact that Britain and France together account for half of defence spending of European members of Nato, and 65 per cent of the research spending.

Nevertheless, it remains to be seen how easily Dassault and BAE will be able to work together. Both companies are fiercely proud of their importance to the manufacturing landscape of their home countries, and neither are exactly known for their willingness to give ground to partners.

BAE insists that it has a good record of collaboration on the Typhoon project and has

worked with the French before, on the old Jaguar fighter jet.

The two companies have been running separate projects for unmanned combat aircraft, Taranis at BAE and Neuron at Dassault, but some of the technology and knowledge will be shared on the joint programme.

Mr Kershaw says that the technology that will set the new aircraft apart from rival projects in the US, Israel and elsewhere, will be its ability to fly in normal air traffic.

He says the system will also be genuinely autonomous, meaning the aircraft “can look after itself” while the ground operator processes the surveillance information from the drone.

The UK is attempting to set itself up as a world centre in autonomous unmanned flight.

The BAE executive says it will be up to the two governments to decide whether the programme morphs into a full-blown combat drone.

But, he adds, perhaps ominously for EADS: “From the point of view of industrial sustainability and a sensible use of the two countries’ capabilities, an evolution would be a logical conclusion.”

## Flush with new business but fighting for the spoils

### Russia

**Charles Clover on tensions between domestic contractors and the government**

Moscow’s air show, known as MAKS and held every second August, is the closest Russia’s sober and secretive defence industry gets to a wild party.

Military hardware fills rows of aircraft hangars on the outskirts of the city. Leggy models hand out glossy pamphlets and tough-eyed Russian fighter pilots mix effortlessly with flip-flop-wearing plane-spotters and turbaned emissaries of nervous foreign dictators anxious to bulk up their air defences in the wake of Nato’s Libya campaign.

The carnival is accompanied by the thunder of fighter jets overhead, dipping and cartwheeling like preening birds of prey.

In one corner of the airfield, Vladimir Kuzmin, a representative of Almaz-Antey, an air defence concern that makes advanced air-defence systems, showed off the export version of the S-300 anti-aircraft missile system. “If Gaddafi had had a couple of these babies,” he says, patting the launch tube, “he would never have had any problems from Nato. It makes the Patriot [the US-made nearest competitor] look like a child’s popgun in comparison.”

Another salesman stands next to the chief money-spinner of the Russian arms industry, the Su-27 fighter-bomber. With a rival US F-15 fighter making an awful racket overhead, he covers his ears and shouts to be heard. “They [the Americans] say theirs is better, we say ours is better. One thing is for sure, ours is definitely quieter.”

These are good times for the Russian defence industry. While defence budgets in western Europe and the US shrink under austerity cuts, Russia’s has grown every year for the past decade. Not only that, but the defence budgets of its main export clients, China and India, also continue to grow, and it has successfully penetrated the more competitive defence markets of the Middle East.

The industry has benefited from savvy marketing, with the Kremlin taking the lead in weapons-selling diplomacy and low prices. Russia has stubbornly maintained its rank as the number two arms exporter in the world and has seen sales triple in a decade, from \$3.7bn in 2000 to \$10bn in 2010.

China used to be the main client for Russian arms, but it has now been overtaken by India.

Russia’s defence industries were entirely export-oriented during the 1990s, but rising defence budgets have meant that in 2007 domestic orders actually surpassed exports for the first time since 1991.

Russia’s own military, which had taken a 15-year “procurement holiday” following the collapse of the USSR and the ensuing financial chaos of the 1990s, is now back to being the arms industry’s main client.

Russia has stubbornly maintained its rank as the number two arms exporter in the world and has seen sales triple in 10 years

Overall, the Kremlin plans to spend Rb19,000bn (\$640m) re-equipping the badly ageing Russian military by 2020. The armed forces are to receive eight Borei-class nuclear missile-carrying submarines, 10 divisions of Iskander cruise-missile systems, 600 aircraft, 1,200 helicopters, 100 naval vessels and 28 divisions of the most advanced S-400 surface-to-air missiles.

The fast growth has meant fast profits. But the government and the defence industries are locked in a fight for the spoils. In previous years, defence budget increases have largely been frittered away as the industry jacked up prices.

Now the Ministry of Defence under Minister Anatoly Serdiukov is trying to reform the procurement process, which has been abused by contractors in the past. But they are fighting against severe cost-cutting measures, which have led to delays and setbacks in several weapons systems.

In July, Yuri Solomonov, the country’s chief designer of ballistic missiles, took the fight public, giving an interview to Kommersant newspaper. He said that because of the ministry’s pigheadedness about price cutting, the 2011 plan for ballistic missiles would be delayed.

“Has our Ministry of Defence turned into a tax inspectorate?” jibed Mr Solomonov. “During the days of the USSR, the state used to help [the defence industry], now it gets in the way.”

But Mr Serdiukov gets support from analysts. “The defence ministry is supposed to check how taxpayers’ money is spent, because we are not North Korea,” says Ruslan Pukhov, director of the Centre for Analysis of Strategies and Technologies. “So what Mr Solomonov says pejoratively, I take positively.”

The military brass has delayed contracts this year in response to what it sees as unjustified price increases. The defence industry has responded by trying to pass legislation prohibiting imports of foreign arms.

The defence ministry is using the imports as leverage to keep domestic prices down. This year, for example, the Kremlin bought the Mistral, a French amphibious assault ship, the largest purchase of foreign hardware by Russia since the fall of the Soviet Union.

“Serdiukov wanted to kick local industry, to show them that they are not a natural monopoly,” says Mr Pukhov.

The conflict reached its climax when the government threatened to file charges against the Severnaya Verf shipyard for failing to deliver on its contract for a new generation of light warships.

The tension between the ministry and suppliers got so bad that when Almaz-Antey wanted to show off the S-400 air defence system at the MAKS air show, Mr Serdiukov refused to hand one over, saying it could build one of their own to display. They had to show the S-300 instead.

Mr Serdiukov looks like he will prevail. His main asset is the loyal backing of his Kremlin bosses, President Dmitry Medvedev and Prime Minister Vladimir Putin. In Russia this counts for everything.