

### GLOBAL DEVELOPMENTS

The gap in the United States Navy aircraft carrier presence in and around the Gulf for two months in late 2015/early 2016 fuelled debate about the US Navy's ability to sustain its regional commitments. The deployment of France's *Charles de Gaulle* carrier to the forces engaged against Islamic State, also known as ISIS or ISIL from the eastern Mediterranean and the Gulf underscored that France is the only US ally with a similar capability, until the two new United Kingdom carriers deploy with significant fixed-wing air capability in the early 2020s. The establishment of the EUNAVFOR MED mission in response to the maritime migration/human trafficking crisis on Europe's southern shores added to the potential new tasking for European navies. Coming at a time of heightened concern also over Russian naval activity, it added to the dilemmas and demands for increased commitments facing European naval forces.

The October 2015 UK Strategic Defence and Security Review (SDSR) reversed some of the significant reductions in military capability made by the previous coalition government and includes a programme of enhancements to development aid, intelligence, security and military capability that signal increasing UK strategic ambition. However, the UK armed forces are undermanned by over 4% with shortages of many naval and air force specialists, especially engineers.

### DEFENCE ECONOMICS

The double-digit real increase in the Russian defence budget in 2015 meant that it dominated global defence budget increases, accounting for around a fifth of all real global spending increases in 2015. Total Russian defence spending is estimated to have risen to above 5% of GDP in 2015, principally to fund its ambitious armament procurement programme, but also due to the inclusion of previously-omitted state-guaranteed credits in response to financing concerns over Western financial sanctions.

The pace of Asian defence spending increases has been considerable: having overtaken total NATO European defence spending levels in around 2012, Asia now spend nearly US\$100 billion more on defence than the European members of the alliance. Although this trend has been accelerated in part by exchange rate effects, it is nonetheless illustrative of the re-orientation of defence spending dollars away from the global north. However, the pace of change may be slowing, particularly due to fiscal constraints faced by the resource-intensive economies of the Middle East and Latin America.

2015 saw a degree of defence budgetary stabilisation in Europe for the first time since the 2008 financial crash, where real outlays – which had been declining by an average of around 2% annually since the crisis – stabilised in 2015. Some

### Russia's T-14 Armata Main Battle Tank

The T-14 is Russia's latest Main Battle Tank (MBT) project; it is the principal variant of the new *Armata* platform. Publicly revealed in 2015, the type is undergoing acceptance testing with serial production scheduled from 2017. Russia has a requirement for 2,300 T-14s by 2020 though this ambitious target is unlikely to be met. Upon service entry, the T-14 will be the first MBT to feature an uncrewed main turret and one of the few to incorporate a hard-kill active protection system. Its size – more comparable to Western counterparts than its predecessors – may also signify a greater emphasis on protection and firepower over mobility. (See p. 8.)

**Armata**

- The *Armata* platform is designed to provide the basis for a wide range of prospective Russian heavy armoured vehicles.
- Prototypes of some variants exist whilst others remain under development or for future consideration.

**Armoured fighting vehicles**

- T-14 MBT
- T-15 IFV
- BMO-2 APC (RPD troops)

**Artillery (self-propelled)**

- 2S35 *Koalitsiya-S* SPG
- TOS BM-2 MRL

**Engineering**

- MIM-A
- T-16 BREM-T ARV
- UMZ-A minelayer
- USM-A1 minelayer
- MT-A VBL

**Logistics support**

- PTS-A (amphibious transport)
- TZM-2 (TOS BM-2 resupply)

**Main gun**

- 125mm smoothbore.
- Turret design is believed to support plans to integrate a more powerful 152mm gun.

**Crew compartment**

**Remote weapon station**

- 7.62mm machine gun integrated with commander's sight.

**Bar armour**

- Provides some disruptive protection against RPG and similar systems.

**Armour**

- Base armour: reportedly consists of a new type of metal-ceramic plate design.
- Secondary armour: newly developed explosive reactive armour with claimed greater resistance to armour-piercing fin-stabilised discarding-sabot rounds.

**Active protection system (APS)**

The turret features a variety of launchers that are understood to represent a new type of APS, often reported as 'Afghanit'. This is believed to incorporate at least one type of hard-kill countermeasure designed to physically intercept and neutralise incoming projectiles such as rocket-propelled grenades and anti-tank guided missiles.

**Uncrewed main turret**

The T-14 places three crew members in a compartment within the front chassis, isolated in a smaller armoured area. This provides:

- Increased protection and survivability;
- Separation from on-board combustibles;
- Weight and space offsets.

This shift from a crew of four to three has been enabled by advances in remote weapon-station technology and the 1960s Soviet adoption of the autoloader system. Contemporary Russian MBTs, including the T-90, do not require a loader for the main gun and therefore have a crew of three. In contrast, most contemporary Western MBTs, including the US M1A2 Abrams, UK *Challenger 2* and German *Leopard 2*, do not have an autoloader and retain a fourth crewmember.

C = Commander G = Gunner D = Driver L = Loader

T-14 (RUS) T-90 (RUS) M1A2 (US)

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states, particularly in Europe's East and North, are now registering real increases in defence outlays.

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## NAVAL AND MARITIME

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*The Military Balance 2016* records a total of 724 submarines, principal surface combatants, patrol and coastal craft, and mine countermeasures (MCM) vessels in European NATO navies. This represents a modest further decline from the previous year (734) after years of significant reductions in hull numbers (the equivalent total in *The Military Balance 2010* was 905). This suggests a move towards a possible stabilisation in numbers, amid renewed focus on naval and maritime concerns.

The commissioning now of three Type-052D advanced air defence destroyers in the PLAN and the second *Kolkata*-class destroyer in the Indian Navy underlined the continuing enhancements to the blue-water capabilities of Asian navies. The commissioning of further such ships in the Chinese, Indian, Japanese, South Korean, and Australian navies is planned in coming years.

A number of important developments in military unmanned maritime vehicle (UMV) programmes have been delivered in recent years. Anti-submarine warfare and MCM have been a particular focus for most nations undertaking research and development in this area. In 2015, NATO conducted UMV trials during the *Trident Juncture* exercise, and in late 2016 the UK is scheduled to dedicate a portion of the *Joint Warrior* exercise to unmanned technology with a simultaneous *Unmanned Warrior* exercise.

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## LAND WARFARE

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Armoured fighting vehicles (AFVs) have played a significant role in recent land wars. Fighting in Iraq and Afghanistan saw action/reaction dynamics between insurgents and international forces. This resulted in ever-increasing requirements for additional protection, air conditioning, electronic jammers and remotely operated external weapons. This meant that armoured vehicles became heavier. A wide range of tracked, wheeled, heavy, medium and light AFVs will continue as the core combat capability of many armies. Most US and NATO land forces are likely to upgrade some existing AFVs, particularly tanks, whilst replacing others with new vehicles.

In 2015, Russia revealed prototypes of three new armoured vehicle platforms. If approved for serial production, the heavy tracked *Armata*, the lighter tracked *Kurganets-25* and wheeled 8x8 *Bumerang* platforms could form the mainstay of future Russian armoured forces. Each provides the base for multiple

variants which, while they share common components and subsystems, will perform distinct roles. Most revolutionary is the *Armata*-based T-14 Main Battle Tank featuring an uncrewed turret. There is emphasis on protection across the platforms – including active protection systems (APS) – reflecting lessons learnt as well as perceptions of future operating environments. When it enters service *Armata* will be the first tank designed for an unmanned turret and APS.

Successful fielding of APS will reduce the effectiveness of anti-tank guided missiles and shoulder-fired weapons such as rocket propelled grenades. This will change battlefield dynamics by increasing the importance of cannon, anti-tank guns and tanks.

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## MILITARY AEROSPACE

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Data in *The Military Balance 2016* reveals Russia is continuing to reap the rewards of the increased defence expenditure of the past few years, though the pace of improvement will slow as economic ills worsen. All the services continued to receive new and upgraded weaponry, some of which, including cruise missiles, were given their combat debut in Syria.

The Russian Navy's *Bulava* submarine-launched ballistic missile and the Aerospace Defence Force's R-77-1 active radar guided air-to-air missile both likely entered service in 2015. Both systems have had their NATO designations changed in *The Military Balance 2016* from the 2015 edition. The SS-NX-32 becomes the SS-N-32 and the AA-X-12B *Adder* becomes the AA-12B; X denoting a system in development. The importance of *Bulava* is self-evident as part of Moscow's recapitalisation of its nuclear inventory, but the AA-12B is also significant in that it will be the air force's first medium-range active radar-guided missile to enter the inventory, likely in significant numbers.

Weighing its priorities, the UK dropped any plan to integrate the *Storm Shadow* cruise missile on the F-35B, even though the mass of the missile had been a design driver for the aircraft's inboard weapon pylon. Instead, following the withdrawal of the *Tornado* GR4 in 2019, the *Typhoon* FGR4 will be the sole carrier of the cruise missile, underscoring the aircraft's renewed importance; the UK's 2015 Strategic Defence and Security Review extended its planned service life from 2030 to 2040, and increased squadron numbers from five to seven.

Unmanned aerial vehicles (UAVs) are increasingly common in military inventories, and armed UAVs are no longer the preserve of the US, Israel and the UK: the number of confirmed armed UAV operators has more than doubled in the last five years. China's own capability in this area has grown, as has Beijing's willingness to export this technology – notably to Nigeria and Iraq.