



UK Space Power



Joint Doctrine Publication (JDP) 0-40, *UK Space Power* is the UK's keystone space domain doctrine publication. Whilst JDP 0-01, *UK Defence Doctrine* provides the broad principles and philosophy underpinning the use of UK Armed Forces, JDP 0-40 is focused specifically on UK space power.

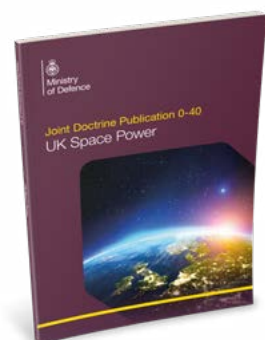
Space, commonly considered to begin at the Kármán Line (around 100 kilometres above sea level) is one of five operational domains that together support the military instrument of national power. The space domain is congested by the exponential increase of objects in orbit and made complex by blurred ownership and challenges ascertaining the true function of satellites. It is critical for both military and civilian purposes and is increasingly contested given the return to systemic competition between states. Space is strategically and economically important to the UK, as set out in the national and Defence space strategies. The UK therefore works collaboratively with allies and partners, within domestic and international law, to responsibly preserve and promote the safety and security of space.

Space power provides a commander with distinctive advantages, namely: perspective, space is the ultimate high ground; access, space offers unrivalled overflight without infringing national boundaries; persistence, given how long satellites can endure in space; and the versatility of satellite payloads. These are offset by limitations such as the financial cost of space operations, the vulnerability of space systems, the relative predictability of orbits, a relative lack of responsiveness and congestion on key orbits.

Space operations face both threats (human derived) and hazards (environmental factors) across all three segments of space operations, namely those of: ground (launchers, control stations and interfaces), space (objects in or transiting through space) and link (the data and mediums used to connect them).

The UK consider there to be four key space power roles.

- a. **Space domain awareness** combines situational awareness with surveillance and the tracking of space objects to provide security-focused, decision-quality information.
- b. **Space control** is the use of defensive and offensive capabilities to assure access and freedom of action in space.
- c. **Space support to operations** enables and enhances the UK's military capabilities, providing critical support to the combat effectiveness of the joint force.



- d. **Space service support** consists of operations that launch space assets and maintain and sustain them.

Space power is rarely used in isolation but forms part of an integrated approach comprising operations across multiple operational domains set alongside cross-government activities. Effective command and control is essential. While centralised command and decentralised execution remain key tenets of space operations, space assets and space capabilities will often not be under the direct command of a joint force commander (JFC) but will be owned by other actors who may have separate aims. A JFC may need to create effects and obtain capabilities by seeking to align multiple actors through a common unity of purpose. Commanders may also wish to maintain centralised control over the highest value space assets due to their scarcity or where their usage may divulge capabilities.

A joint force space component commander (JFSCC) function is provided by the UK Space Command Headquarters who can provide a JFSCC from OF-5 to 2* rank as necessary. Space effects within a JFC's headquarters and those of component commanders are planned, created and coordinated by a network of space liaison officers, overseen by a senior space liaison officer located within UK Space Command.

The UK Space Operations Centre (UK SpOC) is the primary point of contact for UK Defence space-related matters at the operational level. This includes: monitoring and reporting space launches; threat detection, threat warning and attack assessment; monitoring rendezvous and proximity operations; and providing warning of observation by foreign satellites. The UK SpOC has an enduring working relationship with the United States Combined Space Operations Centre, allowing significant access to United States' space-derived information.

While space is an operational domain in its own right, it is most effective when integrated with other components of military power, benefiting from complementary capabilities and exploiting synergies.

Demonstrating proven space power capabilities, or enabling capabilities in other operational domains, can contribute to deterrence but must form part of a wider, whole-of-government strategy. Space offers political choice through its ubiquity and pervasiveness but is not solely a military, or even state, endeavour. Non-state actors increasingly own a stake in the development and operation of capabilities. Partnerships with civil, industry, commercial and academic entities are therefore essential to increase resilience, understand the progress of technology and develop further opportunities for deterrence.

Want to read more about UK space power?

The full edition of JDP 0-40 is designed to be a simple and concise explanation of the utility of space power, written at the OFFICIAL classification to access the widest possible audience. It should be of value to joint commanders and staffs, the single Services, the broader defence community and other government departments, as well as UK partners and allies.



Find out more about joint operational-level doctrine and the other work of the Development, Concepts and Doctrine Centre at the links below.

[gov.uk](https://www.gov.uk)

[defnet](https://defnet.org.uk)

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