

Guidance on security matters for applicants and licensees

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Section 1: Overview of the Guidance

Introduction

- 1.1 The Space Industry Act 2018 (the Act) regulates all spaceflight activities carried out in the United Kingdom, and associated activities.
- 1.2 The Act requires any person or organisation wishing to:
- launch a launch vehicle from the UK
 - return a launch vehicle launched elsewhere than the UK to the UK landmass or the UK's territorial waters
 - operate a satellite from the UK
 - conduct sub-orbital activities from the UK
 - operate a spaceport in the UK, or
 - provide range control services from the UK
- to obtain the relevant licence.
- 1.3 It is supported by [The Space Industry Regulations 2021](#) (the Regulations), that set out in more detail the requirements for each licence, and the [Regulator's Licensing Rules](#), which specify which application form to use to apply for a licence and what information the regulator will require in support of an application.
- 1.4 There is then a series of guidance documents designed to help explain how to comply with the Act and the Regulations. This document is one of the guidance documents.

With the coming into force of [section 1\(3\) of the Act](#), the [Outer Space Act 1986](#) no longer applies to space activities carried on in the United Kingdom, and accordingly the Outer Space Act 1986 does not apply to a person or organisation wishing to carry out spaceflight activities or operate a spaceport in the United Kingdom. The Outer Space Act 1986 **will** continue to regulate the following activities carried out overseas by UK entities: the procurement of the overseas launch of a space object, where the procurement takes place in the UK; the operation of a satellite in orbit from an overseas facility by a UK entity. Extant licences granted under the Outer Space Act 1986 for the carrying out of space activities from within the UK will continue to be governed under that regime. Where an application for a licence has been made under the Outer Space Act 1986, it will be assessed under that Act and – where successful – will result in the award of a licence under the Outer Space Act 1986.

What is the purpose of this guidance document?

- 1.5 This document sets out the fundamental security principles and requirements for all licence types, where applicable, under the Act. It does not provide guidance for the security of any state sponsored military spaceflight operations from a military launch site.
- 1.6 Further security restricted information will be made available by the regulator where this is necessary to progress a proposed application, or where an application for a licence has been granted and further security guidance is required by the licensee. Such guidance will be provided by the regulator to a nominated individual or individuals; these individuals may need to hold a certain level of security clearance, in accordance with the security classification of the information.

Who is this guidance for?

- 1.7 This guidance is for applicants and licensees wishing to carry out commercial spaceflight activities and associated activities in the UK, to help them understand the necessary security requirements relating to the physical, personnel and cyber security of space sites¹ and operations. It also covers facilities, equipment, spacecraft, carrier aircraft, other vehicles, payloads, cargo, and supplies at space sites.

Using this guidance

- 1.8 This guidance document should be read in conjunction with the Act, the [Regulations](#) and the [Regulator's Licensing Rules](#). Where appropriate, the guidance contains links to each of these.
- 1.9 This guidance is designed to provide licensees and licence applicants with general information on security principles and methods that will help them comply with any applicable regulatory requirements for security required under the Act and the Regulations made under it.
- 1.10 Security regulations are cross-cutting and will apply to all licence types. However, not every regulation will apply to each type of licence. For example, [regulation 177 \(security controls for supplies\)](#) of the Space Industry Regulations 2021 would only apply to a spaceport licence and not to an orbital operator licence.
- 1.11 This guidance is not intended to be exhaustive; it is designed to assist licensees in developing security procedures that are both proportionate and appropriate to the activity being undertaken and deemed to be compliant by the regulator. For example, security measures which would be appropriate to launch a high-altitude balloon from a field would not necessarily be the same as the measures required to launch a rocket from a purpose-built spaceport.
- 1.12 If applicants have any queries, they are encouraged to contact the regulator, to seek clarification or gain further information.

The regulator

- 1.13 The Civil Aviation Authority (CAA) will perform the functions of the regulator under the Act. It is referred to in this guidance as 'the regulator'. Under [section 2 of the Act](#), the regulator must carry out its functions relating to spaceflight activities with a view to securing the health and safety of members of the public and the safety of their property. This duty has primacy over the other matters that the regulator must take into account in exercising its functions.
- 1.14 In performing its functions, the regulator will need at times to review confidential and commercially sensitive information. The regulator already has robust security processes in place that will ensure all the information sent in relation to applications, and monitoring ongoing licensed activities, is handled and protected appropriately. For more details on the regulator's security processes and systems, please contact the regulator.
- 1.15 [Section 25](#) of the Act sets out that the regulator may provide advice and assistance on security matters to a licensee or an associated company of a licensee, when requested. All applicants / licensees may request further, specific advice from the regulator about security matters relating to any relevant activity, service,

¹ Space site has the meaning given in paragraph 5(3) of Schedule 4 of the Act. See paragraph 1.27 and footnote 3 of this guidance for further information as to how it relates to a sea launch.

site, facility or other matter under [section 23](#) of the Act. However, it should be noted that section 25(7) allows the regulator to recover the costs of providing that advice, from the recipient.

Contacting the regulator

The regulator can be contacted by email to commercialspaceflight@caa.co.uk. The regulator welcomes and encourages ongoing contact from prospective applicants before they submit an application for a licence. This can be from the earliest stages of considering whether to apply for a licence.

Key terms

1.16 The Act regulates:

- space activities
- sub-orbital activities
- associated activities

that are carried out in the UK.

1.17 As set out in [section 1 of the Act](#), “space activity” means

- (a) launching or procuring the launch or the return to earth of a space object or of an aircraft carrying a space object
- (b) operating a space object, or
- (c) any activity in outer space

1.18 “A space object” includes the component parts of a space object, its launch vehicle and the component parts of that.

1.19 “Sub-orbital activity” means launching, procuring the launch of, operating or procuring the return to earth of:

- (a) a rocket or other craft that is capable of operating above the stratosphere
- (b) a balloon that is capable of reaching the stratosphere carrying crew or passengers, or
- (c) an aircraft carrying such a craft

but does not include space activity. By way of clarification, the regulator will use the International Standard Atmosphere (47km) as the stratopause (i.e. the upper limit of the stratosphere) for the purposes of determining whether an activity is ‘sub-orbital’.

1.20 Space activities and sub-orbital activities are referred to in the Act as “spaceflight activities”.

1.21 “Spacecraft” means a space object, a rocket or other craft that is capable of operating above the stratosphere or a balloon that is capable of reaching the stratosphere carrying crew or passengers, that is used for spaceflight activities. It includes satellites.

1.22 “Launch” is defined in the Act as including causing a craft to take off (or releasing a balloon).

1.23 [Regulation 2](#) of the Space Industry Regulations defines a launch vehicle, other than in references to a “US launch vehicle”, as:

- “(a) a craft to which section 1(5) of the Act applies and the component parts of that craft, or
- (b) a space object which is a vehicle and the component parts of that vehicle,

that is used for the purpose of the proposed spaceflight activities or the operator's spaceflight activities, as applicable, but does not include a payload carried by the launch vehicle;"

- 1.24 The "craft to which section 1(5) of the Act applies" referred to in part (a) of this definition are:
- a rocket or other craft that is capable of operating above the stratosphere
 - a balloon that is capable of reaching the stratosphere carrying crew or passengers
- 1.25 Part (b) of the definition covers vehicles that are capable of reaching orbit, such as those used to place a satellite payload in orbit. As explained below, the operator of any satellite carried on board a launch vehicle does not require their own launch operator licence but does require an orbital operator licence.
- 1.26 Associated activities include the operation of spaceports and range control functions.
- 1.27 Under the Act, any site from which a spacecraft or carrier aircraft is intended to launch is considered a spaceport and must be licensed. A site at which controlled and planned landings of spacecraft are to take place is also a spaceport and must be licensed.
- 1.28 Range control services are defined in [section 6](#) of the Act as:
- “(a) identifying an appropriate range for particular spaceflight activities;
 - (b) co-ordinating arrangements for the activation and operation of the range;
 - (c) obtaining all necessary information for identifying the range and for co-ordinating its activation and operation;
 - (d) ensuring that notifications are issued for the protection of persons who might be put at risk by spacecraft or carrier aircraft within the range or in the vicinity of it;
 - (e) monitoring the range, and the spacecraft or carrier aircraft for which it is provided, to ascertain
 - (i) whether the restrictions or exclusions to which the range is subject are complied with;
 - (ii) whether planned trajectories are adhered to;
 - (f) communicating any failure to comply with those restrictions or exclusions, or to adhere to those trajectories, for the purpose of enabling any appropriate actions to be taken in response;
 - (g) any prescribed services provided for the purposes of, or in connection with, services within any of paragraphs (a) to (f).”
- 1.29 Under [section 13\(1\) of the Act](#), the regulator has the power to include conditions in an operator licence (launch operator licence, return operator licence and orbital operator licence), spaceport licence and a range control licence. Licensees must comply with those conditions. [Schedule 1 of the Act](#) includes a list of examples of conditions, but this is not exhaustive, and the actual conditions included in a licence will vary depending on the operation planned and the type of licence issued. When deciding what conditions to include in a licence, the regulator must consult the public bodies, including the Health and Safety Executive, listed in [section 13\(6\) of the Act](#). Whenever the guidance refers to the regulator imposing conditions (other than a condition which the regulator is required to impose via the Regulations under section 13(3)), the obligation to consult these bodies applies.

Carrying out spaceflight activities at sea

- 1.30 If a person is proposing to launch or carry out other spaceflight activities from UK territorial waters or from a UK flagged ship elsewhere, the Act and Regulations will regulate the activities. Where appropriate, regulations which refer to land also apply to spaceflight activities from a ship – for example, where a regulation refers to a "place" or "other place" from which activities take place, in addition to activities from land. If a person is proposing to launch or carry out other spaceflight activities from a foreign flagged

ship outside UK territorial waters and is a British national, UK body corporate or Scottish firm, the Outer Space Act 1986 regulates these activities.

- 1.31 Sea launch and other sea activities are a complex area; organisations wishing to conduct sea launches are advised to contact the regulator before applying for a licence. Further information on this can be found in section 2 of the guidance document [Applying for a licence under the Space Industry Act 2018](#).

Requirements and expectations

- 1.32 Where the guidance uses the term “must”, this refers to a requirement in or under the Act. If applicants / licensees fail to meet that requirement, it could result in the licence not being granted or being revoked or suspended. Where it is stated that “the regulator expects” applicants to do something, this describes a preferred approach; however, it is not a legal requirement to comply with the regulator’s expectations.

Types of licence

- 1.33 The Act refers to three types of licences that can be awarded:

- operator licence
- spaceport licence
- range control licence

- 1.34 Following the publication of the Act, it was agreed that there should be different licensing requirements for different types of operators. For example, some organisations that would want to operate space objects (such as satellites or research vehicles) would not have a launch capability, and instead would wish to procure such capability and then operate the object once it reached orbit. While these organisations clearly do not need a licence to operate a launch vehicle, they are still required to obtain an operator licence to operate their object in space. Reflecting the various circumstances, there are now five licences available:

- **Launch operator licence:** means an operator licence within [section 3](#) of the Act which authorises a person or organisation to carry out spaceflight activities that include launching a launch vehicle or launching a carrier aircraft and a launch vehicle. This is the type of licence needed if a person or organisation wants to launch a launch vehicle or use a carrier aircraft to assist with a launch of a launch vehicle. A person or organisation holding a launch operator licence is referred to as a spaceflight operator,² or in some circumstances, launch operator licensee. If a launch operator licensee wishes to return a launch vehicle launched from the UK or the UK’s territorial waters to land in the UK, it can apply to do so under the launch operator licence and does not need to apply for a separate return operator licence.
- **Return operator licence:** means an operator licence within [section 3](#) of the Act which is not a launch operator licence and which authorises a person or organisation to operate a launch vehicle, launched into orbit from elsewhere than the United Kingdom, in order to cause that vehicle to land in the United Kingdom. This is the type of licence needed if a person or organisation wants to return a launch vehicle, launched elsewhere than the United Kingdom, to land in the UK or within

² The term spaceflight operator is used in the Regulations to refer to both the holder of a launch operator licence and the holder of a return operator licence. Any references to spaceflight operator in the Regulations or guidance encompass both licence types, so any requirements for spaceflight operators are applicable to both launch operator licensees and return operator licensees. Where a requirement only applies to either a launch operator licensee or return operator licensee, this is clearly stated.

the UK's territorial waters. A person or organisation holding a return operator licence is referred to as a spaceflight operator,¹ or in some circumstances, return operator licensee.

- **Orbital operator licence:** means an operator licence which authorises a person or organisation to procure the launch of a space object into orbit, operate a space object in orbit or conduct other activity in outer space. The most common examples of activities that would be licensed under an orbital operator licence are the procurement of a satellite launch and the operation of a satellite. However, the licence may also cover any other activity in outer space, and is not limited to activities in Earth's orbit. For example, an orbital operator licence would be needed for missions in lunar orbit, lunar surface missions, or deep space probes. A person or organisation holding an orbital operator licence is referred to as an orbital operator licensee.
- **Spaceport licence:** means a licence granted under [section 3](#) of the Act authorising a person or organisation to operate a spaceport (i.e. a site from which spacecraft or carrier aircraft can be launched or a site at which controlled and planned landings of spacecraft can take place³). Spaceports can be licensed for vertical or horizontal launches (or potentially both). A horizontal spaceport must be located at an aerodrome that is already CAA licensed or certified and National Aviation Security Programme (NASP) directed. A person or organisation holding a spaceport licence is referred to as a spaceport licensee.
- **Range control licence:** means a licence granted under [section 7](#) of the Act authorising a person or organisation to carry out range control services in relation to spaceflight activities. That includes identifying an appropriate range; coordinating the use of a range; issuing protective notifications and monitoring the range. A person or organisation holding a range control licence is referred to as a range control licensee.

Examples of offences and enforcement directions under the Act

- 1.35 Under [section 3 of the Act](#), it is an offence to carry out spaceflight activities or operate a spaceport in the UK without the required licence. It is also an offence to make a false statement for the purpose of obtaining an operator licence or a spaceport licence. A person who commits an offence under this section of the Act may be liable to a fine or imprisonment for a term not exceeding 2 years, or both.
- 1.36 Under [section 7 of the Act](#), it is an offence for range control services to be provided by anyone other than the Secretary of State, or a person or organisation authorised to provide them by a range control licence. It is also an offence for a person to make a false statement for the purpose of obtaining a range control licence. A person who commits an offence under this section of the Act may be liable to a fine or imprisonment for a term not exceeding 2 years, or both.
- 1.37 Under [section 13 of the Act](#), the regulator can grant a licence subject to conditions it thinks appropriate or must include a licence condition if required to do so by a regulation (see regulations 9(5) and 10(2)). When a condition is imposed, it is an offence for a licensee to fail to comply with that condition.
- 1.38 Under [section 17 of the Act](#), it is an offence for a spaceflight operator to allow any person to take part in spaceflight activities without them having given their informed consent and fulfilling the age and mental capacity criteria referred to in Part 12 of the Regulations. Under

³ Ships used for sea launch or landing are not "sites" and are therefore not spaceports for the purposes of section 3 of the Act and so do not need a spaceport licence. However, certain types of installations at sea may be regarded as a "site" and so come within the definition. A person who wants to launch from, or land at, an installation at sea should contact the regulator to find out whether the installation they propose to use requires a spaceport licence.

[section 18 of the Act](#), it is an offence for a licensee to allow any unqualified individual to take part in activities authorised by the licence or work in a specified role.

- 1.39 Under [regulation 194](#) of the Regulations, it is an offence for the person who owns or is in possession of US technology not to ensure that access to that technology is controlled by a person authorised to do so by the US Government.
- 1.40 Under [section 27 of the Act](#), the regulator can also issue directions that enable effective enforcement action to be taken, where it appears to the regulator that a person is carrying out spaceflight activities or associated activities without a licence, in contravention of licence conditions or in contravention of the Act or rules made under it.
- 1.41 Under section 27(2), “the regulator may give any directions to that person that appear necessary to be in the interests of safety or for the purposes of securing compliance with–
- (a) the conditions of a licence,
 - (b) provisions contained in or made under this Act, or
 - (c) the international obligations of the United Kingdom.”
- 1.42 It is an offence for a person in receipt of a section 27 direction to fail to comply with it (see [section 31\(3\)\(a\) of the Act](#)). The regulator could also, if it wished to do so, enforce compliance by way of an injunction or equivalent (see section 31(4)).
- 1.43 There are further direction-making powers in the Act, including power for the Secretary of State to give directions under [section 28\(3\)-\(4\)](#) and [section 29\(1\)](#).

The full list of guidance documents issued in relation to the Act

- 1.44 The following guidance documents are available in relation to licences that can be granted under the Act (and any statutory instruments made under the Act):
- Applying for a licence under the Space Industry Act 2018
 - Guidance for launch operator and return operator licence applicants and licensees
 - Guidance for spaceport licence applicants and licensees
 - Guidance for range control licence applicants and licensees
 - Guidance for orbital operator licence applicants and licensees
 - Guidance for the assessment of environmental effects
 - Guidance on security matters for applicants and licensees
 - Guidance on the investigation of spaceflight accidents
 - Guidance on appealing decisions made under the Space Industry Act 2018 and the Outer Space Act 1986
 - Guidance on insurance requirements and liabilities under the Space Industry Act 2018
 - Guidance on duties for all licensees under the Space Industry Act 2018 including monitoring and enforcement by the regulator
- 1.45 In addition, applicants and licensees must follow the [Regulator’s Licensing Rules](#) and are advised to read the [Principles and guidelines for the spaceflight regulator in assessing ALARP and acceptable risk](#).