

Understanding the Space Industry Act

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Introduction

This document is not intended as a definitive interpretation of the Space Industry Act 2018 or a statement of settled policy. Regulatory policy is still in the process of being formulated and in due course the resulting draft regulations and guidance will be consulted on. Prospective licence applicants should rely on their own legal advice on the provisions of the Act:

<http://www.legislation.gov.uk/ukpga/2018/5/contents/enacted>

What activities does the Act cover?

The Space Industry Act 2018 (the SIA) makes provision to regulate all spaceflight activities carried out from the UK. Spaceflight activities encompasses both sub-orbital and space activities. The Outer Space Act 1986 (the OSA) currently regulates space activities carried out by UK entities but once the SIA comes into force the OSA will apply only to space activities carried out by UK entities overseas.

Sub-orbital activities encompass the launch (or procurement of launch), operation and return of a craft capable of operating above the stratosphere or a balloon capable of reaching the stratosphere carrying crew or passengers.

Space activities encompass the launch (or procurement of launch), operation and return of a space object or aircraft carrying a space object (a carrier aircraft) or outer space activity (including operating a satellite from the ground). Space object refers to an object that will go into Earth orbit or beyond (such as a satellite) or the launch vehicle responsible for putting the object into orbit.

Spacecraft refers to any craft, balloon or space object as defined above that is used for spaceflight activities.

The Act also regulates associated activities including the operation of spaceports and provision of range control services.

What does this mean in practice?

Spaceflight activities

In this document a launch vehicle is any vehicle used for sub-orbital or space launch including a rocket, spaceplane or balloon or a carrier aircraft carrying any of those vehicles. It does not include a satellite or a carrier aircraft when it is not carrying a spacecraft.

As set out above, the Act requires the licencing of any launch, procurement of launch, operation or return of vehicles capable of operating above the stratosphere (approximately 50km) and any activities that take place above the stratosphere. It also requires the licensing of any balloon capable of operating within the stratosphere (approximately 10km-50km) with people aboard. These are collectively called **operator licences**.

In this document, an operator licence involving launch is generically referred to as a **launch vehicle operator licence** but would be either a launch vehicle operator licence for sub-orbital activities or a launch vehicle operator licence for space activities.

The Secretary of State – whose functions will be exercised by the UK Space Agency (UKSA) – is the default regulator under the SIA. The Civil Aviation Authority (CAA) will also be appointed as a

regulator under the SIA through regulations. In most cases, the CAA will regulate sub-orbital activities and the UKSA will regulate space activities. The exception is that the UKSA will regulate all spaceflight activities involving the use of rockets, regardless of whether they are involved in sub-orbital or space activities. Rockets not involved in spaceflight activities (i.e. those that are not capable of operating above the stratosphere) will continue to be regulated by the CAA under Article 96 of the Air Navigation Order 2016:

<http://www.legislation.gov.uk/uksi/2016/765/article/96/made>

In this document an operator licence involving procurement of a satellite launch and/or the operation of the satellite in orbit is generally referred to as a **satellite operator licence**. These are and will continue to be issued by the UKSA. Currently, this is under the OSA but once the SIA comes into force will be issued under either the OSA or the SIA:

	Operation	OSA		SIA	
		Procurement of launch	In-orbit operations	Procurement of launch	In-orbit operations
A	UK entity procuring a UK launch for a satellite			X	
B	UK entity operating a satellite from the UK				X
C	UK entity procuring an overseas launch for a satellite	X			
D	UK entity operating a satellite from overseas		X		
E	Foreign entity procuring a UK launch for a satellite			X	
F	Foreign entity operating a satellite from the UK				X

For more information about current OSA licensing, such as what to expect from the licensing process and the obligations of licensees, please visit the 'Applying for a satellite operator licence' page.

Associated activities

The regulators will issue a **spaceport licence** for the operation of a spaceport. Any site from which a spacecraft or carrier aircraft intends to launch is considered a spaceport and must be licensed. A spacecraft will only be allowed to land at a licensed spaceport or a mobile installation at sea.

In this document spaceports are referred to as horizontal launch spaceports or vertical launch spaceports. A horizontal launch spaceport is a spaceport with a runway - likely to be an adapted, existing aerodrome - suitable for launching spaceplanes and carrier aircraft. A vertical launch spaceport is a spaceport - likely to be a new site - suitable for launching rockets.

The CAA will regulate horizontal launch spaceports and balloon spaceports and the UKSA will regulate vertical launch spaceports. The Act does not exclude the possibility of co-locating different types of spaceport at the same site and the regulators will work closely together should such an application be made.

The regulators will issue a **range control licence** for the provision of range control services by commercial entities, including tracking, surveillance and boundary control. This approach is novel: in

other countries, range control is typically provided by the state. Ranges are critical to securing safety and so the regulator must be satisfied that the range control service provider can demonstrate it has the competence to provide services.

There will be no single model for a range control service provider. It may be possible to licence one or more types of range control service in individual licences but it would be necessary for the launch vehicle operator to obtain all the different elements of the required range control services for a launch. The regulator issuing a range control licence will be the CAA or the UKSA depending on the type of service for which a licence is sought.

A single entity can apply for more than one licence. For example, a spaceport operator could apply for both a spaceport and range control licence or a launch vehicle operator could apply for a launch vehicle operator, satellite operator and range control licence.

Chapter 1: Regulation of spaceflight

This chapter explains sections 1, 2, 3, 4 and 16 of the SIA and covers:

- Duties and supplementary powers of the regulator
- Prohibition of unlicensed spaceflight
- Exemptions
- Exercise of regulatory functions

Duties and supplementary powers of the regulator

The regulator must carry out its functions relating to spaceflight activities so as to secure public safety (i.e. the health and safety of members of the public and their property). This duty has primacy over the other matters that the regulator has to take into account in exercising its functions.

When exercising its functions, the regulator must also take into account:

- a) the interests of persons carried by spacecraft or carrier aircraft;
- b) the requirements of persons carrying out spaceflight activities;
- c) the interests of any other persons in relation to the use of land, sea and airspace;
- d) the requirements of persons with interests in property carried by spacecraft;
- e) any environmental objectives set by the Secretary of State;
- f) the interests of national security;
- g) any international obligations of the United Kingdom;
- h) any space debris mitigation guidelines issued by an international organisation in which the government of the United Kingdom is represented.

There is no hierarchy between the interests and requirements listed above. If there is a conflict between any of these matters, the regulator must apply them in a reasonable way, taking account of all factors in the application of the provisions as a whole.

Paragraph e) requires the regulator to take into account the Government's environmental policy. In addition, the regulator cannot grant a launch vehicle operator licence or spaceport licence unless an assessment of environmental effects has been submitted (see chapter 5 below).

Paragraph (g) refers to any international obligations of the United Kingdom. These obligations are not limited to those in the UN Space Treaties, but include any obligation arising as a matter of international law.

Paragraph (h) is intended to capture the guidelines issued by the Inter-Agency Debris Co-ordination Committee of which the UK is a member:

<https://www.iadc-online.org/>

The Government intends to make regulations to prescribe the meaning of "members of the public" for the purposes of any provision of the Act that refers to public safety.

Prohibition of unlicensed spaceflight activities and spaceport operation

It is prohibited to carry out spaceflight activities or operate a spaceport in the United Kingdom without a licence and this is an offence under the Act. A similar prohibition applies to providing range control services (see chapter 4).

A licence will be issued to a legal person, so any person carrying out an activity that falls within scope of a regulated activity will require a licence. A single licence can be issued to more than one person on the basis of joint and several liability for all activities covered by that licence.

The Government intends to make regulations to prescribe eligibility criteria for a licensee and require certain prescribed roles to be undertaken by individuals on behalf of the licensee.

Exemptions

Under the SIA, the Government has the power to make exemptions to the requirement to hold a licence by:

1. making an Order in Council certifying that arrangements have been made between the UK and another country to secure compliance with the international obligations of the UK and, as a consequence, no licence is required;
2. making regulations to exempt other activities or persons from the requirement to hold a licence.

The Government does not currently intend to exercise these powers unless an appropriate case presents itself.

Exercise of regulatory functions

The Government intends to make regulations appointing the Civil Aviation Authority (CAA) to carry out certain functions of the regulator in order to achieve the division of responsibilities set out in the Introduction. Certain functions are reserved to the Secretary of State and these cannot be delegated.

Chapter 2: Range

This chapter explains sections 5, 6 and 7 of the SIA and covers:

- Range
- Range control services
- Provision of range control services

Range

A range is a zone (or zones) consisting of a volume of airspace and area of land and/or sea, in relation to which warnings, restrictions or exclusions are put in place. Establishing a range will be critical to the safe operation of spaceflight activities. Use of an appropriate range will ensure that persons and property are not exposed to unacceptable risk from spaceflight activities and do not pose such a risk to spaceflight activities themselves.

The Government intends to make regulations prescribing:

- the matters to be taken into account in identifying the appropriate range;
- the requirements to be imposed upon operating the range (whether the range control provider or someone acting on their behalf of the range control service provider); and
- who should be notified by the range control provider of spaceflight activities taking place within the range.

Range control services

The SIA defines the following as range control services:

- identifying an appropriate range for particular spaceflight activities;
- co-ordinating arrangements for the activation and operation of the range;
- obtaining all necessary information for identifying the range and for co-ordinating its activation and operation;
- 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;
- monitoring the range, and the spacecraft or carrier aircraft for which it is provided, to ascertain—
 - whether the restrictions or exclusions to which the range is subject are complied with;
 - whether planned trajectories are adhered to;
- 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.

These services would cover:

- Identification of the appropriate range for a launch activity, and co-ordinating the activation and operation of range areas;
- Tracking and surveillance to ensure that a launch vehicle is adhering to its planned trajectory, and that restrictions or exclusions are being complied with;

- Managing the boundaries of ranges and issuing of notifications and warnings to keep clear.

The Government does not currently intend to prescribe any other activities as range control services.

A range control service provider might also have a role in ensuring that the launch vehicle follows pre-agreed flight safety rules, including initiating flight termination when necessary for safety.

Provision of range control services

Only the Secretary of State or a person authorised by a range control licence may provide the services that are listed above under 'range control services'. The Government does not currently intend to make regulations exempting persons or services from this requirement.

The Government intends to make regulations regarding the provision of these range control services.

Chapter 3: Licences

This chapter explains sections 8, 12, 13, 14 and 15 of the SIA and covers:

- Grant of licence
- Conditions of licences
- Other licence issues

Further licence specific information is provided elsewhere:

- Launch Vehicle Operator and Spaceport licences:
 - Chapter 4: Safety
 - Chapter 5: Environmental effects
- Range Control Licence:
 - Chapter 2: Range
- Satellite Operator Licence:
 - Chapter 4 Safety

Grant of licence

The regulator may grant a licence only if satisfied that the granting of a licence:

- will not impair national security;
- is consistent with the United Kingdom's international obligations (of any type); and
- is not contrary to the national interest.

The regulator cannot grant a licence unless satisfied that the applicant:

- has the necessary financial and technical resources;
- is otherwise a fit and proper person; and that
- persons performing any licensee obligations under the licence are also fit and proper to carry out the licensed activities.

As part of the licensing process, the applicant may, for example, be required to:

- supply independently verifiable evidence to prove their ability to adequately finance the proposed operation (e.g. business licences, bank records, deeds, etc).
- demonstrate that they have adequate facilities, personnel, equipment, tools and materials to safely undertake the proposed operation.
- demonstrate the personnel involved in the operations have adequate skills and experience to hold the position.

In addition, the Government intends to make regulations including:

- that an application must be in the form specified by the regulator and accompanied by the appropriate charge;
- about procedural, administrative and evidential matters relating to a licence application; and
- that the regulator can inspect a site, equipment or vehicle or obtain information.

Licence conditions

Attaching conditions to licences will be a key tool for the regulator in order to ensure safety and compliance. Examples of conditions are set out at Schedule 1 of the Act:

<http://www.legislation.gov.uk/ukpga/2018/5/schedule/1/enacted>

The Government is considering whether to make regulations requiring the regulator to place certain conditions on licences in all cases.

Other licensing issues

The regulator can grant a licence for a specified period of time and then renew that licence for another period of time. However, the regulator is not required to impose a time limit on licences. The regulator can also transfer, vary, suspend or terminate a licence.

Chapter 4: Safety

This chapter explains section 9, 10, 19, 20 and 21 of the SIA and covers:

- Launch vehicle safety
- Satellite safety
- Spaceport safety
- Accident investigation
- Assistance with safety functions
- Other safety requirements

Range control safety is covered under Chapter 3.

Launch vehicle safety

Safety is at the heart of the SIA and the regulator must not grant an operator licence unless satisfied that the following requirements are met:

- The applicant has carried out an assessment of risks to the health and safety of prescribed persons taking part in spaceflight activities to be authorised by the licence. It is proposed that these persons will be crew and spaceflight participants.
- The risk assessment for prescribed persons meets prescribed requirements.
- The applicant has taken all reasonable steps to reduce risks from spaceflight activities to the health, safety and property of other persons to "as low as reasonably practicable" (ALARP – see below).
- In addition, the residual risks, even if the operator has met the ALARP test, must also be acceptable, or else the licence cannot be granted

As low as reasonably practicable (ALARP) is a familiar concept in health and safety law, providing a benchmark for risk assessments under the Health and Safety at Work Act 1974. Further information about ALARP can be found on the Health & Safety Executive website:

<http://www.hse.gov.uk/risk/theory/alarplance.htm>

An important consideration for regulators is the means by which licence applicants will demonstrate that the risks these activities pose to the other persons (likely to be the uninvolved general public (AKA third parties)) are ALARP and at a level that is acceptable to the regulator.

Spaceport safety

The regulator must not grant a spaceport licence unless satisfied an applicant has taken all reasonable steps to ensure risks to public safety arising from the operation of a spaceport (including the spaceflight activities conducted from that spaceport) are as low as reasonably practicable (see above under 'launch vehicle safety'). The Government intends to make regulations:

- setting out requirements for obtaining a spaceport licence; and
- for securing the safe operation of a licenced spaceport.

Safety of satellite operation

The Government intends to make regulations securing that licensed space activities relating to satellites are carried out safely. The requirements in these regulations are likely to be different to those for launch vehicle operators or spaceports due to the different operating environment.

Accident investigation

The Government intends to make regulations providing for the Air Accident Investigation Branch (AAIB) to investigate accidents arising from spaceflight activities (whether under the SIA or the OSA). The AAIB already investigates civil aircraft accidents and serious incidents:

<https://www.gov.uk/government/organisations/air-accidents-investigation-branch>

Assistance with safety functions

The regulator can request advice and assistance from a qualifying health and safety authority and authorise them to carry out functions on the regulator's behalf. A qualifying health and safety authority is:

- the Health & Safety Executive (or the Health and Safety Executive for Northern Ireland);
- the Office of Nuclear Regulation; or
- an additional prescribed body.

Other safety requirements

Examples of what safety regulations could cover is given at Schedule 3 to the SIA:

<http://www.legislation.gov.uk/ukpga/2018/5/schedule/3/enacted>

Chapter 5: Environmental effects

This chapter explains section 11 of the SIA and covers the requirement for an assessment of environmental effects (AEE). This section only applies to launch vehicle operator and spaceport licences.

An applicant is required to submit an AEE prior to the grant of a spaceport licence or a launch vehicle operator licence. The regulator is required to take the AEE into account when deciding whether to grant a licence and what conditions should be attached to a licence.

This is likely to cover the effects of licensed activities on:

- Air quality
- Emissions targets
- Biodiversity
- Marine impacts
- Noise pollution
- Water quality
- Soil health
- Environmental effects of launch failure

A cumulative assessment of all effects is also likely to be required to assess whether the effects, in combination, could result in a significant environmental effect.

There is also an existing range of environmental requirements regulated under separate legislation, independently of the AEE submission. Applicants should contact all environmental protection bodies whose jurisdiction they fall under to ensure compliance with all environmental obligations. For example:

- **Planning permission** may be required for infrastructure related to the activity. Applicants should consult their local planning authority or the Government's online planning portal:

<https://www.planningportal.co.uk/>

- **A marine licence** may be required for the activity. Applicants should liaise with the appropriate marine licensing body in their area.

<https://www.gov.uk/topic/planning-development/marine-licences>

- **Environmental permits**, such as water discharge and greenhouse gas emissions permits, may be required to conduct certain activities.

<https://www.gov.uk/topic/environmental-management/environmental-permits>

- **A wildlife licence** may be required where an activity will disturb or remove wildlife, or damage habitats. Applicants should liaise with the appropriate environmental protection agency.

<https://www.gov.uk/get-a-wildlife-licence>

The SIA also allows for the requirement to provide an AEE to be met, or met in part, by an equivalent assessment previously prepared in compliance with another statutory requirement or one prepared in respect of an earlier application where there has been no material change in circumstances since the previous assessment.

This means that where an environmental assessment has been submitted as part of any of the separate processes listed above, the regulator may accept this as satisfying part of the AEE requirement. This is to avoid duplication of effort where appropriate.

Applicants should take independent legal advice on the matters identified above.

Chapter 6: Taking part in spaceflight

This chapter explains section 17 and 18 of the SIA and covers:

- Informed consent
- Training, qualifications and medical fitness

Informed consent

The holder of an operator licence cannot allow individuals to take part in a prescribed role in spaceflight activities, unless informed consent requirements and prescribed criteria concerning age and mental capacity are met. The Government intends to specify these in regulations.

Training, qualifications and medical fitness

The Government intends to make regulations prescribing training, qualifications and medical fitness standards for people taking part in spaceflight and associated activities. Examples of what regulations could cover is given at Schedule 2 to the SIA:

<http://www.legislation.gov.uk/ukpga/2018/5/schedule/2/enacted>

Chapter 7: Security

This chapter explains sections 23, 24 and 25 of the SIA.

The Government intends to make regulations concerning the security of activities and facilities regulated under the SIA. Examples of what regulations could cover is given at Schedule 5 to the SIA:

<http://www.legislation.gov.uk/ukpga/2018/5/schedule/5/enacted>

In addition, the holder of a spaceport licence can make byelaws regulating that spaceport for the purposes of ensuring security. However, these have to be confirmed by the Secretary of State.

Chapter 8: Monitoring and enforcing

This chapter explains sections 26-33 of the SIA and covers:

- Monitoring and enforcement
- Directions
- Enforcement authorisation

Monitoring and enforcement

The regulator is responsible for monitoring spaceflight activities and associated activities in order to:

- secure compliance with the provisions of the SIA and regulations made under the SIA, the conditions of licences and the international obligations of the United Kingdom; and
- protect public safety and the national security of the United Kingdom.

The Government intends to make regulations to enable the regulator to exercise monitoring and enforcement functions to achieve this.

Directions

The regulator can give directions to a regulated person in order to:

- secure compliance with the provisions of the SIA and regulations made under the SIA, the conditions of licences and the international obligations of the United Kingdom; or
- in the interests of health or safety.

The Secretary of State can give directions to a regulated person:

- in the interests of health and safety, spaceflight security, national security or international relations; or
- to discharge any international obligation of the United Kingdom.

The Secretary of State can give directions to the regulator in the interests of health and safety, spaceflight security, national security or international relations.

The regulator must consult the Secretary of State and vice versa before issuing a direction.

Enforcement authorisation

A justice of the peace may issue an enforcement warrant on three grounds. Firstly, if satisfied that:

- there are reasonable grounds for believing a person is not complying with the provisions of the Act and subsequent regulations or the conditions of a licence
- the regulator has issued a direction to secure compliance; and
- there are reasonable grounds for believing that the direction has not been complied with (or that a refusal to comply with such a direction is likely).

Secondly, if satisfied that:

- the Government has issued a direction to secure compliance; and

- there are reasonable grounds for believing that the direction has not been complied with (or that a refusal to comply with such a direction is likely).

Thirdly, if satisfied that:

- the regulator needs access to premises in order to do anything that the regulator or an inspector is permitted to do under monitoring and enforcement regulations or a licence condition; and
- the licence holder is refusing to allow the regulator access.

The Secretary of State can grant an enforcement authorisation. This power is limited and can only be used in urgent cases where there is a:

- serious risk to national security
- serious risk of contravention of international obligations, or
- serious risk to health and safety

It is an offence to intentionally obstruct a person exercising powers granted by an enforcement warrant or an enforcement authorisation.

Chapter 9: Liabilities and indemnities

This chapter explains sections 12(2), 34, 36 and 37 of the SIA and covers:

- Liabilities of an operator
 - Trespass and nuisance
 - Liability to indemnify Government
 - Liability to third parties
- Limiting an operator's liabilities
 - Liability to indemnify Government
 - Disapplying the limit on the liability to indemnify Government
 - Liability to third parties
- Regulator liability

Liabilities of an Operator

Trespass and nuisance

There is no liability in trespass or nuisance in relation to spaceflight activities where they are carried out substantially in compliance with the SIA or with requirements and conditions (including within licences) imposed by the SIA.

This is necessary to prevent an operator (either a launch vehicle operator or satellite operator) who is acting lawfully from being sued by a third party who considers that their right to quiet enjoyment of land is being affected.

Liability to indemnify the Government

The SIA places a liability on persons carrying on spaceflight activities to indemnify the Government for any claims brought against the Government for loss or damage caused by those activities. There is a similar liability for operators under the OSA.

One of the reasons for the inclusion of this indemnity is because under the UN treaties, the Government is ultimately liable for the space activities of its nationals:

<http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introliability-convention.html>

This indemnity applies to any claims brought against the Government including claims brought under the UN Convention on International Liability for Damage Caused by Space Objects ('the Liability Convention').

Liability to third parties

The SIA goes further than the OSA in its liability provisions given the potential impact that launch activities could have on the general public in the UK. As such, the SIA places a strict liability on an operator for injury or damage caused:

- in the United Kingdom or its territorial waters;
- to an aircraft in flight above such land or water; or
- to persons or property on board such aircraft.

where the injury or damage is caused by:

- a craft or space object being used by a person (the operator) for spaceflight activities;
- anything falling from a launch vehicle or satellite; or
- by any person in the craft.

The strict liability provision means that damages can be recovered from an operator by a person who suffers injury or damage without them having to prove fault. The SIA also provides a power for the Government to make regulations prescribing those persons who do not have a strict liability right of claim. The Government intends that only the uninvolved general public in the UK who suffer injury or damage should be able to bring a claim against an operator without having to prove fault.

Furthermore, the strict liability does not apply to damage or injury that is caused or contributed to by the negligence of the person who sustains it.

Limiting an operator's liabilities to indemnify the Government and to third parties

The SIA provides powers to limit an operator's liabilities to indemnify the Government and to third parties. Regulations can also prescribe circumstances where these limits do not apply.

Limiting an operator's liability to indemnify Government – procuring a launch and operating a satellite in orbit

The regulator has the power to limit (by licence condition) an operator's liability to indemnify the Government. This is a discretionary power within the SIA which means that the regulator is not obliged to exercise the power. However, under the OSA there is a mandatory limit on an operator's liability to indemnify Government, following an amendment made by the Deregulation Act 2015. This means that when licensing activities under the OSA, the UK Space Agency acting on behalf of the Secretary of State is required to limit an operator's liability to indemnify Government.

The Government remains committed to maintaining the policy under the OSA of limiting an operator's liability to indemnify the Government for the activities procuring the launch of a satellite and the operation of a satellite in orbit. This policy will apply whether these activities are licensed under the OSA or the SIA. This does not require the making of any further regulations and will be set out in the guidance to accompany regulations. It should be noted that this is the only liability that is currently limited under the OSA. The limit of the liability will be set out in the licence.

Disapplying the limit on an operator's liability to indemnify Government

It is the Government's intention to make regulations that set out the situations where the limit on an operator's liability to indemnify Government is disappplied. For example, where there is gross negligence or wilful misconduct on the part of the operator or where an operator fails to comply with their licence conditions.

Limiting an operator's liability to indemnify Government – launch from the UK

Launch (both to orbit and sub-orbital) from the UK is a completely new activity and given the risks involved, further work is required to assess the merits of limiting a launch vehicle operator's liability to indemnify Government.

The making of any regulations will be dependent on procuring robust evidence to demonstrate that a limit is necessary for the UK launch industry to be competitive internationally.

Limiting an operator's liability to third parties

The Government is considering whether to make regulations to limit an operator's liability to third parties for all spaceflight activities that take place from the UK. The making of any such regulations will be dependent on procuring robust evidence to demonstrate that a limit is necessary in the interests of the UK spaceflight industry including for the reason that the UK launch industry should be competitive internationally.

- 1) Liabilities arising from injury or damage to third parties as a result of UK launch or return:

The strict liability of an operator to third parties is most likely to arise as a result of UK launch activities, given that the strict liability applies to injury or damage caused to persons or property within the United Kingdom. The strict liability applies to the launch vehicle operator and the operator who procures a UK launch.

- 2) Strict liabilities arising from injury or damage to third parties as a result of in orbit operations:

The strict liability under the SIA does not apply to injury or damage that arises in space. However, a UK entity operating a satellite licensed under the SIA would still hold a strict liability for any injury or damage caused within the UK, by a UK satellite that re-enters the Earth's atmosphere. However, given the size of UK satellites that operate within Low Earth Orbit, it is considered extremely unlikely that a UK satellite would survive re-entry.

A satellite operator whose satellite re-enters and causes damage on Earth would potentially be liable to pay compensation for any claims brought against them for any injury or damage caused.

Regulator liability

The regulator or person or body listed in section 37(2) of the SIA is not liable to any person for taking or failing to take any relevant actions or for the way in which a listed person or body takes any relevant actions except in cases of wilful misconduct or gross negligence. This provision was included within the SIA because even if the regulator or listed person carries out their functions properly, they cannot guarantee the safety of the regulated activities and should not be held liable accordingly.

Chapter 10: Insurance

This chapter explains section 38 of the SIA and covers:

- Third party liability (TPL) insurance
- Other insurance requirements

Third party liability (TPL) insurance

As spaceflight activities and associated activities are risky in nature it is important that those suffering damage or loss arising from those activities can be compensated. Insurance therefore provides an important resource to meet potential claims. As such, the SIA contains a power to make regulations to require those engaging in spaceflight activities and associated activities to be insured in respect of prescribed risks and liabilities.

Under the current OSA licensing regime, a licensee is required to demonstrate that they hold third party liability insurance for the activities licensed under that Act before a licence is issued. These activities currently are the procurement of launch (purchasing space on a launch vehicle for a satellite) and the in-orbit operation of a satellite. It is intended that the requirement to obtain third party liability insurance for these activities carried out under both the OSA and the SIA will continue.

The Government also intends that launch vehicle operators engaging in launch from the UK would be required to obtain and maintain third party liability insurance. One of the options the Government is considering using to calculate the amount required is a Maximum Probable Loss (MPL) style assessment. An MPL approach would seek to calculate the amount of potential third party liability claims that an operator could incur in a realistically probable scenario.

Other insurance requirements

The Government does not currently intend to make regulations:

- providing for insurance or reinsurance schemes to help operators comply with the insurance requirements;
- to allow the Government to provide an indemnity, guarantee or grant to a person to help them comply with the insurance requirement;
- to allow that a financial security can be accepted instead of traditional insurance.

Chapter 11: Land powers

This chapter explains sections 39-50 of the SIA and covers:

- Obtaining land rights
- Restricting the use of land
- Appeals and compensation

To enable the safe operation of spaceports, particularly during launch, the SIA makes provision to allow a qualifying person (i.e. the Secretary of State, holder of a range control licence or a holder of a spaceport licence) rights over land. It is important to note that this does not give the Government powers to acquire land on behalf of licensees.

Obtaining land rights

The Secretary of State can make orders granting powers to obtain rights over land to ensure the safe operation of a spaceport or provision of range control services. For example, this could be to access to the spaceport site or the installation or maintenance of apparatus necessary for range control services or surveillance. However, the Government has no plans to use this power as it is anticipated that licensees will be able to successfully negotiate access etc with private landowners on a commercial basis. Where it is intended to make an order for these purposes, the Secretary of State may grant a power of entry on such land to carry out a survey.

Restricting the use of land

The Secretary of State can make orders which temporarily restrict or prohibit the use of land for safety reasons during times of launch and landing. This power is essential for ensuring public safety and minimising risk associated with spaceflight activities. The restrictions which can be enacted by orders are temporary and are envisaged in most cases likely to last for only a matter of hours.

Appeals and compensation

The above orders may be challenged. As well as the early opportunity to challenge a proposal to make an order by an objection, the SIA provides for the quashing of an order.

People can also claim compensation in the following cases:

- should the value of their land be diminished due to an order
- if land has been damaged in the exercise of obtaining land rights or due to a survey conducted in relation to an order
- if they sustain damage because they have been disturbed in their use of land or water as a result of an order restricting the use of land or water.

Decisions about any compensation disputes will be taken in the Upper Tribunal in England and Wales, and in the Lands Tribunals for Scotland and for Northern Ireland respectively.

Chapter 12: Offences

This chapter explains sections 22 and 51-59 of the SIA and covers:

- Offences created by the SIA
- Offences created by regulations

Offences created by the SIA

The SIA creates a number of new offences relating to spaceflight activities and associated activities. Many are listed throughout the SIA, alongside the measures they seek to enforce. Schedule 4 sets out serious offences against the safety of a spacecraft:

<http://www.legislation.gov.uk/ukpga/2018/5/schedule/4/enacted>

The SIA also sets out penalties and defences for offences.

Offences and civil sanctions created by regulations

The Government is considering the need to create additional offences to enforce the requirements set out in regulations. The SIA sets out the associated penalties that may be imposed:

<http://www.legislation.gov.uk/ukpga/2018/5/section/54/enacted>

Regulations may also provide for defences. Regulations providing for civil sanctions can also be made in respect of criminal offences created by the SIA or by regulations made under it (except offences under Schedule 4).

Chapter 13: Appeals, charging and other matters

This chapter explains sections 60-72 and covers:

- Appeals
- Register of launches
- Charging
- Agreements with other countries
- Extension of the Act to Crown Dependencies and Overseas Territories

Appeals

The Government is required to make regulations to establish one or more appeals panels. Rights, determination and procedures for appeals are set out at Schedule 10 to the SIA:

<http://www.legislation.gov.uk/ukpga/2018/5/schedule/10/enacted>

Register of launches

The Secretary of State is required to maintain a public register of launches from UK spaceports. The Secretary of State must ensure that the public can view the information in the register free of charge and must include as much of the following information as he or she believes is appropriate:

- the date of the launch;
- the spaceport from which the launch took place;
- the nature of each launch vehicle;
- the purpose of the launch.

A single register of launches and space objects would satisfy the registration duties under both the SIA and the OSA. There is an obligation under article 2 of the UN Registration Convention to maintain a register of space objects.

Charging

The SIA allows for charging schemes to be made in order for regulators to recover their costs in respect of the performance of functions under the SIA. For charging by the Civil Aviation Authority, a scheme can be made administratively. For recovery of charges by persons other than the CAA, a scheme must be provided for by regulations.

The guidance in *Managing Public Money* states that the costs of providing services should be fully recovered from users of the service:

<https://www.gov.uk/government/publications/managing-public-money>

Therefore, the Government intends to put schemes in place under both the SIA and the OSA which will set out the mechanisms for charging. It is intended that the charging schemes will cover fees charged for considering and processing an application, issuing a licence and ongoing monitoring costs post-issue of a licence. The schemes will set out the charges payable by an applicant before a licence is issued. Different schemes will apply to different types of missions and applications.

Agreements with other countries

The Government is considering the need to make regulations to prescribe circumstances and conditions under which compliance with prescribed requirements or prohibitions imposed under the terms of an agreement with another country (such as the United States of America) is to be taken as compliance with prescribed requirements or prohibitions in regulations made under the SIA.

Extension of the Act to Crown Dependencies and Overseas Territories

By Order in Council, any of the provisions of the SIA, with any modifications specified in the order, can be extended to the Crown Dependencies and Overseas Territories.

The OSA was applied to the Isle of Man, Jersey and Guernsey in 1990, Gibraltar in 1996, the Cayman Islands in 1998 and Bermuda in 2006. Requests from Crown Dependencies and Overseas Territories for the extension of SIA will be considered once the SIA has fully come into force.