
STATUTORY INSTRUMENTS

2021 No. 792

The Space Industry Regulations 2021

PART 10

Spaceport safety

CHAPTER 1

Interpretation

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151. In this Part—

“current safety case” means—

- (a) if it is the first safety case, the safety case which the regulator is satisfied meets the requirements of regulation 36, or
- (b) if it is a safety case reviewed, or reviewed and revised, under regulation 155, the safety case reviewed, or reviewed and revised, and accepted by the regulator in accordance with that regulation;

“licensed activities” means the activities that a person is authorised to carry out by virtue of a spaceport licence;

“operational area” means any area of a spaceport where licensed activities are undertaken and includes any runway, taxiway, launch pad, test stand, hazardous material storage facility, hazardous material handling or venting area, static engine test area or area within a safety clear zone;

“safety case” is to be construed in accordance with regulation 36;

“safety clear zone” means an area which is subject to restrictions, exclusions and warnings during the carrying out of hazardous pre-flight and post-flight operations;

“spaceport manual” is to be construed in accordance with regulation 164;

“spaceport operating staff” means an employee or agent of the licensee whose duties—

- (a) are concerned with ensuring that the spaceport is safe and secure for use by carrier aircraft, launch vehicles and any payload to be carried by a launch vehicle, or
- (b) require them to have access to an operational area.

CHAPTER 2

A spaceport licensee’s safety duty

A spaceport licensee’s safety duty

152.—(1) A spaceport licensee must ensure that its licensed activities are carried out safely.

(2) A spaceport licensee carries out its licensed activities safely by carrying them out—

- (a) in accordance with the current safety case by—
 - (i) preventing a major accident from occurring, and
 - (ii) mitigating the consequences of such an accident if it does occur.

CHAPTER 3

Horizontal spaceport location requirement

Horizontal spaceport location requirement

- 153.** A horizontal spaceport must be located at an aerodrome which is either—
- (a) certified, or
 - (b) CAA licensed.

CHAPTER 4

Safety case: retention, review and revision

Requirement to retain the safety case

- 154.** A spaceport licensee must retain its current safety case for the duration of the licence.

Safety case review and revision requirement

- 155.**—(1) A spaceport licensee must review and, where necessary, revise its current safety case—
- (a) no more than five years after the date on which the licence was granted, and
 - (b) at intervals not exceeding five years following the first review mentioned in subparagraph (a).
- (2) Despite paragraph (1), the spaceport licensee must review and, where necessary, revise its current safety case—
- (a) following an occurrence at the spaceport;
 - (b) where it becomes aware of an occurrence that has occurred elsewhere and which may affect the safe operation of the spaceport;
 - (c) where a review is justified by new facts or by technological knowledge about safety matters, including knowledge arising from analysis of accidents or occurrences;
 - (d) where a review is justified by developments in knowledge concerning the assessment of hazards;
 - (e) before—
 - (i) making modifications to the spaceport,
 - (ii) making changes to the licensed activities,
 - (iii) a new carrier aircraft or launch vehicle operates from the spaceport,
 - (iv) a new payload is to be carried by a launch vehicle operating at the spaceport, or
 - (v) introducing new types of hazardous material to the spaceport, or increasing the quantities of hazardous material that are to be transported on or stored at the spaceport,where such changes could have material consequences for risk;
 - (f) following any change to the safety management system which may introduce new risks or hazards or change the nature of existing hazards;

(g) if the regulator directs the spaceport licensee to review, or review and revise, its current safety case.

(3) In carrying out a review of a safety case the spaceport licensee must take into account the spaceport licensee's safety duty under regulation 152.

Steps required after review, or review and revision, of safety case

156.—(1) Where a spaceport licensee revises its safety case it must supply to the regulator without delay and, where regulation 155(2)(e) applies, in advance of the proposed change—

- (a) the revised safety case, and
- (b) any other information about the revision of the safety case which the regulator requires.

(2) Where a safety case has been reviewed under regulation 155 and a decision has been taken not to revise it, the spaceport licensee must without delay—

- (a) inform the regulator in writing, and
- (b) provide the regulator with written reasons for that decision.

(3) Until the spaceport licensee has received the regulator's confirmation in writing that it accepts the revised safety case supplied to it under paragraph (1), the licensee must not implement any changes to its licensed activities as a result of any revision of that safety case.

CHAPTER 5

Safety clear zones

Safety clear zone requirement

157.—(1) A spaceport licensee must, unless paragraph (2) applies, put in place an appropriate safety clear zone to ensure that the risk to any person from blast overpressure, fragmentation debris, thermal radiation or toxic release is as low as reasonably practicable during any hazardous pre-flight and post-flight operations.

(2) This paragraph applies if the current safety case demonstrates that a safety clear zone is not required for the hazardous pre-flight or post-flight operations.

(3) A spaceport licensee must—

- (a) promulgate the times at which a safety clear zone is in place,
- (b) promulgate the area that comprises the safety clear zone,
- (c) ensure that the safety clear zone is monitored at all times, and
- (d) secure that arrangements are in place to ensure that no person is inside the safety clear zone unless the person's presence there is essential for the carrying out of spaceflight activities or for the performance of duties connected with such activities.

(4) For the purposes of paragraph (1), an appropriate safety clear zone is one which is determined by the assessment made in the spaceport licensee's current safety case.

CHAPTER 6

Hazardous material, testing areas and safety equipment at spaceports

Hazardous material storage facilities: location requirements and plan

158.—(1) A spaceport licensee must designate, in accordance with paragraph (2), appropriate areas at the spaceport for the safe storage of any hazardous material ("hazardous material storage facilities").

- (2) For the purposes of paragraph (1), whether an area is appropriate for the siting of a hazardous material storage facility must be determined in the light of—
- (a) the assessment made in the spaceport licensee’s current safety case, and
 - (b) the types and quantities of hazardous material to be stored.
- (3) The spaceport licensee must identify on the site plan required under regulation 36(4)(d)—
- (a) the location of all hazardous material storage facilities at the spaceport;
 - (b) the maximum quantity of hazardous material to be stored at each facility, including the type of hazardous material and, if applicable, its hazard type;
 - (c) actual and minimum separation distances between each hazardous material storage facility and—
 - (i) any other hazardous material storage facility at the spaceport;
 - (ii) an inhabited building;
 - (iii) a public road or railway line;
 - (iv) a public area.
- (4) The spaceport licensee must ensure that any hazardous material storage facility is clearly marked in a manner appropriate to the hazardous material stored.
- (5) For the purposes of this regulation—
- “hazard type” has the same meaning as in the Explosives Regulations 2014(1);
 - “inhabited building” means any building in or at which people are, or are likely to be, present either all the time or from time to time;
 - “minimum separation distance” means the minimum distance which is appropriate in the light of the assessment made in the spaceport licensee’s current safety case, between a hazardous material storage facility and any other infrastructure or building listed in paragraph (3)(c)(i) to (iv);
 - “public area” means any area within, or in the vicinity of, the spaceport and to which members of the public are allowed access;
 - “public road” means any thoroughfare outside the spaceport on which the movement of vehicles is allowed.

Hazardous material: handling and venting areas

- 159.**—(1) A spaceport licensee must designate appropriate areas at the spaceport for the handling and venting of any hazardous material.
- (2) Any area designated under paragraph (1) must be appropriate to the type and quantity of hazardous material and have a surface that is compatible with that type of hazardous material.
- (3) For the purposes of paragraphs (1) and (2), whether an area is appropriate must be determined in the light of the assessment made in the spaceport licensee’s current safety case.

Propellants etc.: fit for purpose requirement

- 160.**—(1) Where a spaceport licensee is responsible for storing, transporting or handling any hazardous material, it must not cause or permit that hazardous material to be delivered to an installation unless satisfied that—
- (a) the installation is capable of storing and dispensing the hazardous material so as not to render it unfit for use in a carrier aircraft, launch vehicle or payload;

(1) S.I. 2014/1638, amended by S.I. 2014/3248, S.I. 2016/315, S.I. 2016/345, S.I. 2016/721, S.I. 2017/469 and S.I. 2019/696.

- (b) the installation is marked in a manner appropriate to the type of hazardous material stored or, if different types are stored in different parts, each part is so marked;
- (c) in the case of delivery from a vehicle, a ship or a vessel other than a ship, the hazardous material is of a type appropriate to that installation and is fit for use in a carrier aircraft, launch vehicle or payload.

(2) A spaceport licensee must not cause or permit any hazardous material to be dispensed from an installation that it manages to a carrier aircraft, launch vehicle or payload unless satisfied that it is fit for use in that carrier aircraft, launch vehicle or payload.

(3) Paragraphs (1) and (2) do not apply to any hazardous material which has been removed from a carrier aircraft, launch vehicle or payload and is intended for use in another carrier aircraft, launch vehicle or payload operated by the same operator as the carrier aircraft, launch vehicle or payload from which it has been removed.

(4) The spaceport licensee must keep a written record for each installation that it manages, which must include detailed information about—

- (a) the type and quantity of hazardous material delivered and the date of delivery,
- (b) any samples taken of the hazardous material and the results of tests of those samples, and
- (c) the maintenance and cleaning of the installation.

(5) The spaceport licensee must—

- (a) preserve the written record required under paragraph (4) for the period of 12 months beginning with the date of delivery referred to in paragraph (4)(a) or such longer period as the regulator may in a particular case direct, and
- (b) produce that record within a reasonable time after being requested to do so by the regulator.

(6) In this regulation, “installation” means any apparatus or container, including a hazardous material storage facility or a vehicle, designed, manufactured or adapted for the storage or transportation of any hazardous material or for the delivery of any such material to a carrier aircraft, launch vehicle or payload.

Static engine test area

161.—(1) Where static engine testing of carrier aircraft, launch vehicles or payloads, or any other test of such a vehicle or craft which has the potential to cause a major accident hazard is to be carried out at a spaceport, the spaceport licensee must designate an appropriate area at the spaceport for the purposes of conducting those tests.

(2) For the purposes of paragraph (1), whether an area is appropriate for the static engine or other testing of carrier aircraft, launch vehicles or payloads must be determined in the light of the assessment made in the spaceport licensee’s current safety case.

Safety equipment

162. If a spaceport licensee owns, manages or controls any system or ground equipment used to protect persons or property at the spaceport or to comply with these Regulations, that licensee must ensure that any such system or equipment is—

- (a) maintained in efficient working order and in good repair, and
- (b) thoroughly examined and, where appropriate, tested at suitable intervals.

CHAPTER 7

Requirements about the spaceport licensee's organisation and management

Safety management system requirement

163. A spaceport licensee must have in place a safety management system which complies with the requirements in Schedule 4.

Spaceport manual requirement

164.—(1) A spaceport licensee must have in place a spaceport manual, which in the case of a horizontal spaceport may be an annex to the existing aerodrome manual, which meets the requirements in paragraph (2).

(2) The spaceport manual must contain all such information and instructions as may be necessary to enable each member of the spaceport operating staff to perform their duties as such including, in particular, information and instructions relating to the matters specified in Schedule 8.

(3) The spaceport licensee must—

- (a) supply to the regulator any amendments or additions to the spaceport manual before or immediately after they come into effect,
- (b) without prejudice to sub-paragraph (a), make such amendments or additions to the spaceport manual as the regulator may require for the purpose of ensuring the safe operation of the spaceport and of any carrier aircraft, launch vehicle or payload at the spaceport, and
- (c) maintain the spaceport manual and make such amendments as may be necessary for the purpose of keeping its contents up to date.

(4) The spaceport licensee must make available to each member of the spaceport operating staff a copy of the spaceport manual, or a copy of every part of the spaceport manual which is relevant to that person's duties and ensure that each such copy is kept up to date.

(5) The spaceport licensee must take all reasonable steps to secure that each member of the spaceport operating staff—

- (a) is aware of the contents of every part of the spaceport manual which is relevant to that person's duties, and
- (b) undertakes those duties in conformity with the relevant provisions of the spaceport manual.

(6) In this regulation "existing aerodrome manual" means the manual required to be in place under article 212(1)(d) of the Air Navigation Order 2016(2).

CHAPTER 8

Emergencies

Emergency response plan requirement

165.—(1) A spaceport licensee must have in place and maintain an emergency response plan for the spaceport.

(2) The emergency response plan must—

- (a) detail how the spaceport licensee will respond in an emergency;

(2) [S.I. 2016/765](#). Article 212 was amended by [S.I. 2019/645](#).

- (b) be appropriate for the licensed activities and spaceflight activities to be conducted at the spaceport;
- (c) provide for coordination with the relevant local authority and emergency services in response to an emergency occurring at, or in the vicinity of, the spaceport;
- (d) provide for the coordination of the spaceport emergency response plan with—
 - (i) the spaceport safety management system,
 - (ii) the emergency response plan of any other organisation at the spaceport, and
 - (iii) the emergency response plans of those organisations with which the spaceport licensee must interact during the provision of the spaceport services.
- (3) The spaceport licensee must, at suitable intervals not exceeding three years—
 - (a) test the emergency response plan, and
 - (b) review and, where necessary, revise the plan.
- (4) The spaceport licensee must supply to the regulator before or immediately after they come into effect—
 - (a) the results of any test of the emergency response plan conducted under paragraph (3)(a), and
 - (b) details of the revisions, if any, it has made to the emergency response plan as a result of a review conducted under paragraph (3)(b).
- (5) For the purposes of this regulation—
 - “relevant emergency services” means emergency services which are likely to be required to respond to an emergency at the spaceport;
 - “relevant local authority” means the local authority in whose administrative area the spaceport is situated.

Spaceport rescue and fire-fighting provision

166.—(1) A spaceport licensee must ensure that rescue and firefighting personnel, facilities and equipment are provided at the spaceport in a timely manner.

- (2) The level, type and timeliness of provision under paragraph (1) must be appropriate taking account of—
 - (a) the licensed activities and spaceflight activities to be conducted at the spaceport, and
 - (b) the assessment made in the spaceport licensee’s current safety case.

Powers of spaceport firefighters in an emergency

167.—(1) A member of the Rescue and Fire Fighting Service at a spaceport may do anything at a spaceport that the member reasonably believes to be necessary—

- (a) if the member reasonably believes a fire to have broken out or to be about to break out, for the purpose of extinguishing or preventing the fire or protecting life or property,
 - (b) if the member reasonably believes an accident to have occurred, for the purpose of rescuing people or protecting them from serious harm, or
 - (c) for the purpose of preventing or limiting damage to property resulting from any action taken as mentioned in sub-paragraph (a) or (b).
- (2) In particular, a member of the Rescue and Fire Fighting Service at a spaceport, when acting in accordance with paragraph (1), may at the spaceport—

- (a) enter a launch vehicle, by force if necessary, without the consent of the owner or spaceflight operator;
 - (b) restrict the access of persons to a launch vehicle or a place.
- (3) A person who without reasonable excuse obstructs or interferes with a member of the Rescue and Fire Fighting Service at a spaceport taking authorised action under this regulation commits an offence.
- (4) A person who commits an offence under paragraph (3) is liable—
- (a) on summary conviction in England and Wales, to a fine;
 - (b) on summary conviction in Scotland or Northern Ireland, to a fine not exceeding the statutory maximum;
 - (c) on conviction on indictment, to imprisonment for a term not exceeding two years, or a fine, or both.