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STATUTORY INSTRUMENTS

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**2021 No. 792**

**The Space Industry Regulations 2021**

**PART 1**

**General**

**Citation, commencement and extent**

1.—(1) These Regulations may be cited as the Space Industry Regulations 2021 and come into force on the twenty-first day after the day on which they are made.

(2) These Regulations extend to England and Wales, Scotland and Northern Ireland.

**Interpretation**

2.—(1) In these Regulations—

“the Act” means the Space Industry Act 2018 and a reference to a section without more is a reference to a section of the Act;

“accident” includes any fortuitous or unexpected event by which the safety of any launch vehicle or person is threatened, and “spaceflight accident” means an accident—

(a) arising out of, or in the course of, spaceflight activities, and

(b) occurring—

(i) in or over the United Kingdom, or

(ii) elsewhere, if any of the circumstances referred to in regulation 16 of the Spaceflight Activities (Investigation of Spaceflight Accidents) Regulations 2021<sup>(1)</sup> apply;

“accountable manager” means the individual appointed under regulation 7(1)(a), 8(1) or 11(1)(c);

“aerodrome certificate” means a certificate issued under the Aerodromes Regulation;

“Aerodromes Regulation” means [Commission Regulation \(EU\) No. 139/2014](#) of 12th February 2014 laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EU) 2018/1139 of the European Parliament and of the Council;

“Aircrew Regulation” means [Commission Regulation \(EU\) No. 1178/2011](#) of 3rd November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No. 216/2008 of the European Parliament and of the Council;

“air traffic controller” means an individual acting as an air traffic controller in pursuance of a licence granted under or by virtue of an enactment;

“blast overpressure” means pressure above normal atmospheric pressure as the result of a shock wave caused by an explosion or detonation;

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(1) [S.I. 2021/793](#).

“CAA licensed” in relation to an aerodrome means an aerodrome which is licensed under an Air Navigation Order<sup>(2)</sup>;

“cabin crew” means individuals who take part in spaceflight activities on board a launch vehicle to perform duties assigned by the spaceflight operator or the pilot in command of the launch vehicle, but who are not members of the flight crew;

“carrier aircraft” means an aircraft which is carrying a launch vehicle which is to separate from that aircraft before the aircraft lands, except in—

- (a) regulations 2(2)(b), 15, 27(2)(d), 36(6)(c), 80, 84(1)(b) and 161,
- (b) Parts 9, 11 and 14, and
- (c) paragraph 4(c) of Schedule 1, paragraph 12 of Schedule 5, and paragraph 6 of Schedule 8;

“certified” in relation to an aerodrome means an aerodrome in respect of which an aerodrome certificate is in force;

“crew”, except in Part 9, means—

- (a) members of the cabin crew, and
- (b) members of the flight crew;

“current risk assessment” means—

- (a) if the risk assessment has not been revised and accepted by the regulator in accordance with regulations 80 and 82, the risk assessment, or
- (b) if the risk assessment has been revised and accepted by the regulator in accordance with regulations 80 and 82, that revised risk assessment;

“dangerous goods” means any article or substance which is identified as such in the 2021-2022 English language edition of the Technical Instructions for the Safe Transport of Dangerous Goods by Air<sup>(3)</sup>, approved and published by decision of the Council of the International Civil Aviation Authority but does not include propellants or other substances necessary for the normal functioning of the launch vehicle;

“day” means a calendar day;

“designated range” means the range identified by the licensee pursuant to regulation 46(1) in respect of the operator’s spaceflight activities;

“emergency services” means—

- (a) police, fire, rescue and ambulance services, and
- (b) Her Majesty’s Coastguard;

“flight crew” means individuals who take part in spaceflight activities on board a launch vehicle as a pilot or flight engineer of the launch vehicle;

“flight envelope” means the expected set of trajectories of the launch vehicle taking account of variations to those trajectories and any deviation from those trajectories within which the operator’s spaceflight activities can be carried out safely;

“flight safety system” means a system, including all hardware and software, that provides a controlled means of ending the flight of a launch vehicle for the purposes of ensuring that the operator’s spaceflight activities are carried out safely;

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- (2) Air navigation orders are defined in, and made under, section 60 of the Civil Aviation Act 1982 (c. 16); section 60 was amended by article 71(4) of, and Schedule 10 to, the Airports (Northern Ireland) Order 1994 (S.I. 1994/426), section 1 of, and Schedule 1 to, the Statute Law (Repeals) Act 1995 (c. 44) and section 8(5) of the Civil Aviation Act 2006 (c. 34). There are other amendments to section 60 not relevant to this instrument.
  - (3) ISBN 978-92-9258-946-2. The Technical Instructions can be purchased from: ICAO (<https://store.icao.int/>); Labeline, Midas House, Chivenor Business Park, Barnstable, Devon EX31 4AY (<http://labeline.com> and T: 0870 850 5051); and Freight Merchandising Services Limited, Unit 383, Sykes Road, Slough Trading Estate, Slough, Berkshire SL1 4SP (<http://www.fmslondon.co.uk> and T: 01784 240840).

“flight termination personnel” means the persons who are not on board the launch vehicle and operate, or oversee the operation of, a flight safety system which is not an autonomous flight safety system;

“fragmentation debris” means debris that is emitted as a result of an explosion or deflagration;

“ground control at the spaceport or other place” means a site at a spaceport<sup>(4)</sup> or other place from which spaceflight activities are controlled or are to be controlled but does not include a mission management facility;

“ground support equipment” means equipment including any hardware and software which is used on the ground or other place to assemble, integrate, test, transport, access, handle, maintain, calibrate, verify, protect or service a launch vehicle;

“hazardous material” includes any propellant, whether solid, liquid or gas, any radioactive material or any substance or material prescribed as a hazardous substance for the purposes of the Planning (Hazardous Substances) Act 1990<sup>(5)</sup>, the Planning (Hazardous Substances) (Scotland) Act 1997<sup>(6)</sup> or the Planning Act (Northern Ireland) 2011<sup>(7)</sup> by regulations made under those Acts<sup>(8)</sup>;

“hazardous material storage facility” has the meaning given in regulation 158<sup>(1)</sup>;

“hazardous pre-flight and post-flight operations” means any operation or activity at a spaceport, the carrying out of which involves a risk to any person from blast overpressure, fragmentation debris, thermal radiation or toxic release;

“Her Majesty’s forces” has the same meaning as in the Armed Forces Act 2006<sup>(9)</sup>;

“horizontal spaceport” means a spaceport from which spaceflight activities requiring the use of a runway may be carried out by virtue of a spaceport licence<sup>(10)</sup>;

“human factors” means the human and individual capabilities, characteristics and limitations which influence behaviour or the performance of tasks in a way which may affect the safety of licensed activities;

“human occupant” means a member of the crew or a spaceflight participant;

“intelligence service” means—

- (a) the Security Service;
- (b) the Secret Intelligence Service;
- (c) the Government Communications Headquarters;
- (d) any part of Her Majesty’s forces, or of the Ministry of Defence, which engages in intelligence activities;

<sup>(4)</sup> See section 3(2) and (3) of the Space Industry Act 2018 for the definition of “spaceport”.

<sup>(5)</sup> 1990 c. 10; see section 39(2) for the definition of “prescribed”. Section 39(2) was amended by section 162 of, and Schedule 16 to, the Environmental Protection Act 1990 (c. 43).

<sup>(6)</sup> 1997 c. 10; see section 38(2) for the definition of “prescribed”. Section 38(2) was amended by section 76(7) of the Utilities Act 2000 (c. 27).

<sup>(7)</sup> 2011 c. 25; see section 250(1) for the definition of “prescribed”.

<sup>(8)</sup> In relation to England, the Planning (Hazardous Substances) Regulations 2015 (S.I. 2015/627) are made under section 5 of the Planning (Hazardous Substances) Act 1990, and regulation 3 of S.I. 2015/627 specifies the substances that are hazardous substances for the purposes of that Act. Equivalent provision is made in relation to Wales by the Planning (Hazardous Substances) (Wales) Regulations 2015 (S.I. 2015/1597 (W. 196)). In relation to Scotland, the Town and Country Planning (Hazardous Substances) (Scotland) Regulations 2015 are made under section 3 of the Planning (Hazardous Substances) (Scotland) Act 1997, and regulation 3 of those Regulations specifies the substances that are hazardous substances for the purposes of that Act. In relation to Northern Ireland, the Planning (Hazardous Substances) (No. 2) Regulations (Northern Ireland) 2015 (S.R. 2015 No. 344) are made under section 108(4) of the Planning Act (Northern Ireland) 2011, and regulation 3 of those Regulations specifies the substances that are hazardous substances for the purposes of that Act.

<sup>(9)</sup> 2006 c. 52.

<sup>(10)</sup> See section 3(2) of the Space Industry Act 2018 for the definition of “spaceport licence”.

“investigator-in-charge” means an individual charged, on the basis of the individual’s qualifications, with responsibility for the organisation, conduct and control of a safety investigation;

“launch director” means the individual appointed by the holder of a launch operator licence under regulation 9(3)(a);

“launch operator licence” means an operator licence(11) which authorises a person to carry out spaceflight activities that include launching a launch vehicle or launching a carrier aircraft and a launch vehicle;

“launch operator licensee” means the holder of a launch operator licence;

“launch vehicle”, other than in references to a “US launch vehicle”, means—

(a) a craft to which section 1(5) applies and the component parts of that craft, or

(b) a space object(12) 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;

“licensed activities”, except in Parts 5 and 10 and in Schedule 4, means the activities which a person is authorised to carry out by virtue of an operator licence, a spaceport licence or a range control licence(13);

“licensee” means the holder of an operator licence, a spaceport licence or a range control licence under the Act, except in—

(a) the defined terms—

(i) “launch operator licensee”,

(ii) “proposed spaceport licensee”,

(iii) “range control licensee”,

(iv) “return operator licensee”,

(v) “spaceport licensee”, and

(vi) “US licensee”,

(b) Parts 6 and 7, and

(c) Schedule 4;

“major accident” means—

(a) for the purposes of Parts 4, 8, Schedule 1 and Schedule 4 in so far as it relates to a spaceflight operator, an accident arising out of, or in the course of, spaceflight activities or preparation for spaceflight activities that is highly likely to—

(i) cause death or serious injury to, or

(ii) destroy or seriously damage the property of, persons who are not human occupants;

(b) for the purposes of Parts 5 and 10, regulation 181(2)(e) and Schedule 4 in so far as it relates to a spaceport licensee, an accident at the spaceport that is highly likely to—

(i) cause death or serious injury to any person, or

(ii) destroy or seriously damage the property of members of the public;

(11) See section 3(2) of the Space Industry Act 2018 for the definition of “operator licence”.

(12) Space object is defined in section 69(1) of the Space Industry Act 2018, by reference to the Outer Space Act 1986 (c. 38). The definition is given in section 13(1) of that Act. It “includes the component parts of a space object, its launch vehicle and the component parts of that”.

(13) See section 7(2) of the Space Industry Act 2018 for the definition of “range control licence”.

(c) for the purposes of Part 16, an accident of the types referred to in paragraphs (a) or (b) as appropriate;

“major accident hazard” means a hazard that could cause a major accident;

“malfunctions” means the launch vehicle deviates from operating within its flight envelope or otherwise ceases to operate normally and “malfunction” means the deviation of such a vehicle from that envelope;

“NASP” means National Aviation Security Programme<sup>(14)</sup>;

“occurrence”, other than in Part 11, has the meaning given in regulation 270;

“occurrence report” means a report referred to in regulation 271(1);

“operator” means the holder of an operator licence;

“operator security programme” means the programme specified in regulation 171(1);

“operator’s spaceflight activities” means spaceflight activities which are authorised by an operator licence and which are any of—

(a) launching a launch vehicle;

(b) launching a carrier aircraft;

(c) operating the launch vehicle or a carrier aircraft whose launch is authorised by the operator licence, in so far as necessary for one or more of the following assignments—

(i) to carry a spaceflight participant,

(ii) to carry a payload until its release or separation from the launch vehicle,

(iii) to carry out sub-orbital activities, or

(iv) to return to earth and complete its flight,

including orbital activities only in so far as they are necessary to complete such an assignment;

(d) operating a launch vehicle whose launch is not authorised by the operator licence, in order to cause that vehicle to land in the United Kingdom;

“orbital activities” means spaceflight activities using a launch vehicle which has reached a stable orbit;

“pilot in command” means the pilot who—

(a) takes part in the operator’s spaceflight activities on board the launch vehicle, and

(b) is designated by the spaceflight operator as being in command and charged with the safe conduct of its flight, without being under the direction of any other pilot;

“proposed spaceflight activities” means any of the spaceflight activities mentioned in paragraphs (a) to (d) of the definition of “operator’s spaceflight activities” which would be authorised by the operator licence that the applicant is applying for, if granted;

“qualifying health and safety authority” has the meaning given in section 21(2);

“range control licensee” means the holder of a range control licence;

“range operations manager” means the individual appointed under regulation 11(1)(b);

“range safety manager” means the individual appointed under regulation 11(1)(a);

“remote pilot” means an individual who—

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(14) The National Aviation Security Programme relates to the security regime applicable for civil aviation. It provides a comprehensive security framework incorporating the baseline security requirements retained from EU law, as well as additional more stringent measures which are set out in directions issued by the Secretary of State to industry under Part 2 of the Aviation Security Act 1982 (c. 16).

- (a) has the ability to control, in real time, the flight path of the launch vehicle, and
- (b) is not on board that launch vehicle;

“return operator licence” means an operator licence which is not a launch operator licence and which authorises a person to operate a launch vehicle, launched elsewhere than the United Kingdom, in order to cause that vehicle to land in the United Kingdom;

“return operator licensee” means the holder of a return operator licence;

“safety investigation” means a process conducted by SAIA, or other relevant national or international body, for the purposes of spaceflight accident prevention, which—

- (a) includes the gathering and analysis of information,
- (b) the drawing of conclusions, including the determination of causes and contributing factors, and
- (c) when appropriate, the making of safety recommendations;

“safety management system” in respect of a spaceflight operator and a spaceport licensee is to be construed in accordance with Schedule 4;

“safety manager” means the individual appointed under regulation 7(1)(b) or 9(1);

“safety recommendation” means a proposal of SAIA, based on information derived from a safety investigation or other sources such as safety studies, made with the intention of preventing spaceflight accidents;

“SAIA” means the space accident investigation authority nominated by the Secretary of State under regulation 5 of the Spaceflight Activities (Investigation of Spaceflight Accidents) Regulations 2021;

“security manager” means the individual appointed under regulation 7(1)(c), 9(3)(c), 10(2) or 11(1)(d);

“ship” means every description of vessel whether or not used in navigation;

“spaceflight operator” means the holder of a launch operator licence or a return operator licence;

“spaceflight participant” means an individual, other than a member of the crew, who is to be carried on board a launch vehicle with the spaceflight operator’s permission;

“spaceport licensee” means the holder of a spaceport licence;

“space site security programme” means the programme specified in regulation 170(1);

“stable orbit” means an orbit where a launch vehicle—

- (a) has started to travel in an orbit of a minimum perigee of 130 kilometres taking account of any natural influences such as the forces of drag acting on that vehicle, and
- (b) is capable of continuing to travel in that orbit for at least one orbit of the earth;

“technical requirements”, except in the definition of “Aircrew Regulation” and in paragraph 11 of Schedule 1, means the requirements described in the current safety case as required by paragraph 11 of Schedule 1;

“Technology Safeguards Agreement” means the Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland on technology safeguards associated with United States’ participation in space launches from the United Kingdom entered into on 16th June 2020<sup>(15)</sup>;

(15) CP 307. The agreement may be obtained in hard copy from the Commercial Space Directorate, UK Space Agency, 10 Victoria Street, London, SW1H 0NN or found on the Foreign, Commonwealth & Development Office treaties database at <https://www.gov.uk/government/publications/ukusa-agreement-in-the-form-of-an-exchange-of-notes-between-the-united-kingdom-and-the-united-states-of-america-on-technology-safeguards-associated>.

“thermal radiation” means energy emitted as electromagnetic radiation caused by an explosion or deflagration that can be experienced as light or heat;

“toxic release” means the release of a substance that is toxic to humans;

“training manager” means the individual appointed under regulation 9(3)(b) or 11(1)(e);

“US technical data” has the meaning given in the Technology Safeguards Agreement.

(2) For the purposes of these Regulations references to “space site” are to be treated as if they include references to a ship—

- (a) from which a launch vehicle or carrier aircraft is launched or is to be launched,
- (b) on which a launch vehicle, or a carrier aircraft to which the exemption referred to in regulation 15(1) does not apply, has landed or is to be landed,
- (c) from which spaceflight activities are controlled or are to be controlled,
- (d) from which range control services are provided or are to be provided, or
- (e) from or on which one or more of the activities in sub-paragraphs (a) to (d) are carried out or are to be carried out.