

SUBCHAPTER A—GENERAL

PART 400—BASIS AND SCOPE

Sec.

400.1 Basis.

400.2 Scope.

AUTHORITY: 49 U.S.C. 70101–70121.

SOURCE: Docket No. 43810, 53 FR 11013, Apr. 4, 1988, unless otherwise noted.

§ 400.1 Basis.

The basis for the regulations in this chapter is the Commercial Space Launch Act of 1984, and applicable treaties and international agreements to which the United States is party.

§ 400.2 Scope.

These regulations set forth the procedures and requirements applicable to the authorization and supervision under 49 U.S.C. Subtitle IX, chapter 701, of commercial space transportation activities conducted in the United States or by a U.S. citizen. The regulations in this chapter do not apply to amateur rocket activities or to space activities carried out by the United States Government on behalf of the United States Government.

[Doc. No. FAA–4999–5535, 65 FR 56656, Sept. 19, 2000]

PART 401—ORGANIZATION AND DEFINITIONS

Sec.

401.1 The Office of Commercial Space Transportation.

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401.5 Definitions.

AUTHORITY: 49 U.S.C. 70101–70121.

SOURCE: Docket No. 43810, 53 FR 11013, Apr. 4, 1988, unless otherwise noted.

§ 401.1 The Office of Commercial Space Transportation.

The Office of Commercial Space Transportation, referred to in these regulations as the “Office,” is a line of business within the Federal Aviation Administration and is located in the Federal Aviation Administration Head-

quarters, 800 Independence Avenue, SW., Room 331, Washington, DC 20591.

[Amdt. 401–3, 68 FR 35289, June 13, 2003]

§ 401.3 The Associate Administrator for Commercial Space Transportation.

The Office is headed by an Associate Administrator to exercise the Secretary’s authority to license or permit and otherwise regulate commercial space transportation and to discharge the Secretary’s responsibility to encourage, facilitate, and promote commercial space transportation by the United States private sector.

[Doc. No. FAA–2006–24197, 72 FR 17016, Apr. 6, 2007]

§ 401.5 Definitions.

As used in this chapter—

Act means 49 U.S.C. Subtitle IX, Commercial Space Transportation, ch. 701—Commercial Space Launch Activities, 49 U.S.C. 70101–70121.

Amateur rocket activities means unmanned launch activities conducted at private sites involving rockets—

(1) Powered by a motor or motors having a total impulse of 200,000 pound-seconds or less;

(2) Powered by a motor or motors having a total burning or operating time of less than 15 seconds; and

(3) Having a ballistic coefficient—that is, gross weight in pounds divided by frontal area of rocket vehicle—less than 12 pounds per square inch.

Associate Administrator means the Associate Administrator for Commercial Space Transportation, Federal Aviation Administration, or any person designated by the Associate Administrator to exercise the authority or discharge the responsibilities of the Associate Administrator.

Casualty means serious injury or death.

Contingency abort means cessation of vehicle flight during ascent or descent in a manner that does not jeopardize public health and safety and the safety of property, in accordance with mission rules and procedures. Contingency

abort includes landing at an alternative location that has been designated as a contingency abort location in advance of vehicle flight.

Crew means any employee or independent contractor of a licensee, transferee, or permittee, or of a contractor or subcontractor of a licensee, transferee, or permittee, who performs activities in the course of that employment or contract directly relating to the launch, reentry, or other operation of or in a launch vehicle or reentry vehicle that carries human beings. A crew consists of flight crew and any remote operator.

Emergency abort means cessation of vehicle flight during ascent or descent in a manner that minimizes risk to public health and safety and the safety of property. Emergency abort involves failure of a vehicle, safety-critical system, or flight safety system such that contingency abort is not possible.

Equivalent level of safety means an approximately equal level of safety as determined by qualitative or quantitative means.

Expendable launch vehicle means a launch vehicle whose propulsive stages are flown only once.

Experimental permit or *permit* means an authorization by the FAA to a person to launch or reenter a reusable sub-orbital rocket.

Federal launch range means a launch site, from which launches routinely take place, that is owned and operated by the government of the United States.

Flight crew means crew that is on board a vehicle during a launch or reentry.

Flight safety system means a system designed to limit or restrict the hazards to public health and safety and the safety of property presented by a launch vehicle or reentry vehicle while in flight by initiating and accomplishing a controlled ending to vehicle flight. A flight safety system may be destructive resulting in intentional break up of a vehicle or non-destructive, such as engine thrust termination enabling vehicle landing or safe abort capability.

Hazardous materials means hazardous materials as defined in 49 CFR 172.101.

Human space flight incident means an unplanned event that poses a high risk of causing a serious or fatal injury to a space flight participant or crew.

Instantaneous impact point means an impact point, following thrust termination of a launch vehicle, calculated in the absence of atmospheric drag effects.

Launch means to place or try to place a launch vehicle or reentry vehicle and any payload from Earth in a suborbital trajectory, in Earth orbit in outer space, or otherwise in outer space, and includes preparing a launch vehicle for flight at a launch site in the United States. Launch includes the flight of a launch vehicle and includes pre- and post-flight ground operations as follows:

(1) *Beginning of launch.* (i) Under a license, launch begins with the arrival of a launch vehicle or payload at a U.S. launch site.

(ii) Under a permit, launch begins when any pre-flight ground operation at a U.S. launch site meets all of the following criteria:

(A) Is closely proximate in time to flight,

(B) Entails critical steps preparatory to initiating flight,

(C) Is unique to space launch, and

(D) Is inherently so hazardous as to warrant the FAA's regulatory oversight.

(2) *End of launch.* (i) For launch of an orbital expendable launch vehicle (ELV), launch ends after the licensee's last exercise of control over its launch vehicle.

(ii) For launch of an orbital reusable launch vehicle (RLV) with a payload, launch ends after deployment of the payload. For any other orbital RLV, launch ends upon completion of the first sustained, steady-state orbit of an RLV at its intended location.

(iii) For a suborbital ELV or RLV launch, launch ends after reaching apogee if the flight includes a reentry, or otherwise after vehicle landing or impact on Earth, and after activities necessary to return the vehicle to a safe condition on the ground.

Launch accident means

(1) An event that causes a fatality or serious injury (as defined in 49 CFR

830.2) to any person who is not associated with the flight;

(2) An event that causes damage estimated to exceed \$25,000 to property not associated with the flight that is not located at the launch site or designated recovery area;

(3) An unplanned event occurring during the flight of a launch vehicle resulting in the impact of a launch vehicle, its payload or any component thereof:

(i) For an expendable launch vehicle, outside designated impact limit lines; and

(ii) For a reusable launch vehicle, outside a designated landing site.

(4) For a launch that takes place with a person on board, a fatality or serious injury to a space flight participant or crew member.

Launch incident means an unplanned event during the flight of a launch vehicle, other than a launch accident, involving a malfunction of a flight safety system or safety-critical system, or a failure of the licensee's or permittee's safety organization, design, or operations.

Launch operator means a person who conducts or who will conduct the launch of a launch vehicle and any payload.

Launch site means the location on Earth from which a launch takes place (as defined in a license the Secretary issues or transfers under this chapter) and necessary facilities at that location.

Launch site safety assessment means an FAA assessment of a Federal launch range to determine if the range meets FAA safety requirements. A difference between range practice and FAA requirements is documented in the LSSA.

Launch vehicle means a vehicle built to operate in, or place a payload in, outer space or a suborbital rocket.

Mishap means a launch or reentry accident, launch or reentry incident, launch site accident, failure to complete a launch or reentry as planned, or an unplanned event or series of events resulting in a fatality or serious injury (as defined in 49 CFR 830.2), or resulting in greater than \$25,000 worth of damage to a payload, a launch or reentry vehicle, a launch or reentry sup-

port facility or government property located on the launch or reentry site.

Nominal means, in reference to launch vehicle performance, trajectory, or stage impact point, a launch vehicle flight where all vehicle aerodynamic parameters are as expected, all vehicle internal and external systems perform exactly as planned, and there are no external perturbing influences other than atmospheric drag and gravity.

Operation of a launch site means the conduct of approved safety operations at a permanent site to support the launching of vehicles and payloads.

Operation of a reentry site means the conduct of safety operations at a permanent site on Earth at which a reentry vehicle and its payload, if any, is intended to land.

Operator means a holder of a license or permit under 49 U.S.C. Subtitle IX, chapter 701.

Payload means an object that a person undertakes to place in outer space by means of a launch vehicle, including components of the vehicle specifically designed or adapted for that object.

Person means an individual or an entity organized or existing under the laws of a state or country.

Populated area means—

(1) An outdoor location, structure, or cluster of structures that may be occupied by people;

(2) Sections of roadways and waterways that are frequented by automobile and boat traffic; or

(3) Agricultural lands, if routinely occupied by field workers.

Pilot means a flight crew member who has the ability to control, in real time, a launch or reentry vehicle's flight path.

Public safety means, for a particular licensed launch, the safety of people and property that are not involved in supporting the launch and includes those people and property that may be located within the boundary of a launch site, such as visitors, individuals providing goods or services not related to launch processing or flight, and any other launch operator and its personnel.

Reenter; reentry means to return or attempt to return, purposefully, a reentry vehicle and its payload, if any,

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from Earth orbit or from outer space to Earth. The term “reenter; reentry” includes activities conducted in Earth orbit or outer space to determine reentry readiness and that are critical to ensuring public health and safety and the safety of property during reentry flight. The term “reenter; reentry” also includes activities conducted on the ground after vehicle landing on Earth to ensure the reentry vehicle does not pose a threat to public health and safety or the safety of property.

Reentry accident means

(1) Any unplanned event occurring during the reentry of a reentry vehicle resulting in the impact of the reentry vehicle, its payload, or any component thereof, outside a designated reentry site;

(2) An event that causes a fatality or serious injury (as defined in 49 CFR 830.2) to any person who is not associated with the reentry;

(3) An event that causes damage estimated to exceed \$25,000 to property not associated with the reentry and not located within a designated reentry site; and

(4) For a reentry that takes place with a person on board, a fatality or serious injury to a space flight participant or crew member.

Reentry incident means any unplanned event occurring during the reentry of a reentry vehicle, other than a reentry accident, involving a malfunction of a reentry safety-critical system or failure of the licensee’s or permittee’s safety organization, procedures, or operations.

Reentry operator means a person responsible for conducting the reentry of a reentry vehicle as specified in a license issued by the FAA.

Reentry site means the location on Earth where a reentry vehicle is intended to return. It includes the area within three standard deviations of the intended landing point (the predicted three-sigma footprint).

Reentry vehicle means a vehicle designed to return from Earth orbit or outer space to Earth substantially intact. A reusable launch vehicle that is designed to return from Earth orbit or outer space to Earth substantially intact is a reentry vehicle.

Remote operator means a crew member who

(1) Has the ability to control, in real time, a launch or reentry vehicle’s flight path, and

(2) Is not on board the controlled vehicle.

Reusable launch vehicle (RLV) means a launch vehicle that is designed to return to Earth substantially intact and therefore may be launched more than one time or that contains vehicle stages that may be recovered by a launch operator for future use in the operation of a substantially similar launch vehicle.

Risk means a measure that accounts for both the probability of occurrence of a hazardous event and the consequence of that event to persons or property.

Safety critical means essential to safe performance or operation. A safety critical system, subsystem, component, condition, event, operation, process, or item is one whose proper recognition, control, performance, or tolerance is essential to ensuring public safety. Something that is safety critical item creates a safety hazard or provide protection from a safety hazard.

Sigma means a single standard deviation from a fixed value, such as a mean.

Space flight participant means an individual, who is not crew, carried aboard a launch vehicle or reentry vehicle.

State and United States means, when used in a geographical sense, the several States, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the United States Virgin Islands, Guam, and any other commonwealth, territory, or possession of the United States; and

United States citizen means:

(1) Any individual who is a citizen of the United States;

(2) Any corporation, partnership, joint venture, association, or other entity organized or existing under the laws of the United States or any State; and

(3) Any corporation, partnership, joint venture, association, or other entity which is organized or exists under the laws of a foreign nation, if the controlling interest in such entity is held by an individual or entity described in

paragraph (1) or (2) of this definition. *Controlling interest* means ownership of an amount of equity in such entity sufficient to direct management of the entity or to void transactions entered into by management. Ownership of at least fifty-one percent of the equity in an entity by persons described in paragraph (1) or (2) of this definition creates a rebuttable presumption that such interest is controlling.

Suborbital rocket means a vehicle, rocket-propelled in whole or in part, intended for flight on a suborbital trajectory, and the thrust of which is greater than its lift for the majority of the rocket-powered portion of its ascent.

Suborbital trajectory means the intentional flight path of a launch vehicle, reentry vehicle, or any portion thereof, whose vacuum instantaneous impact point does not leave the surface of the Earth.

Validation means an evaluation to determine that each safety measure de-

rived from a system safety process is correct, complete, consistent, unambiguous, verifiable, and technically feasible. Validation ensures that the right safety measure is implemented, and that the safety measure is well understood.

Vehicle safety operations personnel means those persons whose job performance is critical to public health and safety or the safety of property during RLV or reentry operations.

Verification means an evaluation to determine that safety measures derived from a system safety process are effective and have been properly implemented. Verification provides measurable evidence that a safety measure reduces risk to acceptable levels.

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