

SCHEDULE 5

Regulation 90

Safety operations manual

1. Where the operator's spaceflight activities are authorised by—
 - (a) a launch operator licence, the safety operations manual must contain the matters set out in paragraphs 2 to 27;
 - (b) a return operator licence, the safety operations manual must contain the matters set out in paragraphs 3 to 6, 7(1)(1), 8, 9, 14, 15, 17 and 20 to 27,

in so far as relevant to the operator's spaceflight activities which are authorised by the launch operator licence or the return operator licence.

2. The manual must—
 - (a) where necessary, include or refer to information relating to the instructions and procedures referred to in this Schedule, and
 - (b) take into account any human factors relevant to the performance of those procedures and instructions by members of the operating staff and, if the launch vehicle has a spaceflight participant on board, that participant.

Fatigue and other human factors

3. Instructions and procedures that take account of the effects of fatigue and other human factors related to the ability of any member of the operating staff to carry out their spaceflight duties safely.

4. If the launch vehicle has a crew, information about the limitations on flight time, flight duty periods and rest periods for members of the crew and any other matter intended to manage the effects of spaceflight on the human body and to ensure that the crew comply with the requirement in regulation 74.

5. If the launch vehicle has a remote pilot, information about the limitations on flight time, flight duty periods and rest periods for remote pilots and to ensure that the remote pilot complies with the requirement in regulation 74.

6. Details of the safety management system which the spaceflight operator has put in place and which satisfies the requirements in regulation 85 and Schedule 4.

Preparations for launch, return and other operations

- 7.—(1) Instructions and procedures about—
 - (a) the arrival of the launch vehicle at the spaceport or other place from which the launch is to take place;
 - (b) storing the launch vehicle at the spaceport or other place from which the launch is to take place;
 - (c) the assembly and integration of any component parts of the launch vehicle including any instructions from the design authority or a person who manufactured the launch vehicle or any of its component parts;
 - (d) if a launch vehicle is to be reused, satisfying the requirements in regulations 91 to 93;
 - (e) the verification and validation of the launch vehicle to satisfy the requirement in regulation 94;
 - (f) the integration of any payload with the launch vehicle;
 - (g) the loading of any hazardous material onto the launch vehicle;

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- (h) the meteorological and environmental conditions needed to safely load such material;
- (i) the preparations for the use of any carrier aircraft;
- (j) moving the launch vehicle to the place of launch at the spaceport or other place from which the launch is to take place and finally preparing the launch vehicle;
- (k) carrying out safety, technical and organisational reviews, including joint procedures for carrying out such reviews, to check—
 - (i) the progress of launch preparations,
 - (ii) the fitness of the launch vehicle for the operator’s spaceflight activities,
 - (iii) the fitness of the ground support equipment for supporting those activities, and
 - (iv) the readiness for use of any flight safety system or any necessary equipment for providing range control services;
- (l) to ensure the requirements in regulation 96 are satisfied, coordinating and communicating, including joint procedures for coordinating and communicating, with—
 - (i) the range control service provider and any site or other place used in connection with the provision of range control services,
 - (ii) the spaceport licensee,
 - (iii) the relevant meteorological service providers,
 - (iv) the relevant air navigation service providers, and
 - (v) the relevant emergency services.

(2) In this paragraph “design authority” means the person with responsibility for the design of the launch vehicle.

8. Instructions and procedures for complying with the operator security programme.

9. Instructions about the functions and procedures of a mission management facility or ground control at a spaceport or other place and how such functions and procedures affect the duties of a member of the operating staff.

10. Instructions and procedures for ground operating staff about the types of dangerous conditions or events necessitating such staff to cease work on the launch vehicle or its ground support equipment and withdraw to a safe location.

11. Instructions and procedures for monitoring the progress of the preparations for readiness to launch.

12. Procedures for notifying the regulator about planned operator’s spaceflight activities and for arranging and cooperating with any inspections by the regulator of the launch vehicle, carrier aircraft, any ground support equipment or other equipment.

13. Instructions as to the order of the activities and safety procedures to be followed by ground operating staff on the day of the launch.

14. Instructions and procedures about recording in writing the environmental and meteorological information referred to in regulation 97, including the source of that information.

Launch and other operations

15. Instructions and procedures about the conditions referred to in regulation 99 and how to satisfy them.

16. Instructions and procedures about the steps to be taken if a launch cannot safely commence.

17. Instructions and procedures about the steps to be followed during each phase of the flight of the launch vehicle and other operator's spaceflight activities, including any phase when that vehicle is in orbit, to ensure that the spaceflight operator satisfies the requirements in regulations 100 and 101.

18. Instructions about the process to be followed before a flight termination decision is made in accordance with regulation 100(2).

19. If there is a flight safety system—

- (a) instructions and procedures to ensure that the system is capable of operating correctly and of being activated at any time in accordance with sub-paragraphs (c) to (e);
- (b) instructions and procedures about how to separate flight termination decisions and the actions of flight termination personnel relating to those decisions from the decisions and actions of other operating staff during launch and flight;
- (c) instructions to flight termination personnel relating to any time that a launch vehicle malfunctions and that malfunction prevents the operator's spaceflight activities being carried out safely;
- (d) instructions relating to any time that a system—
 - (i) used to monitor whether or not the launch vehicle remains fit for the operator's spaceflight activities, or
 - (ii) used to detect a malfunction,fails and that failure threatens the carrying out of the operator's spaceflight activities safely;
- (e) instructions relating to any time that it is necessary to make a flight termination decision for any reason other than one referred to in sub-paragraph (c) or (d) which threatens or prevents the carrying out of the operator's spaceflight activities safely;
- (f) instructions to the flight termination personnel on making a flight termination decision and the actions that such personnel must perform to terminate the flight.

20. If part of the mission, instructions and procedures about returning the launch vehicle to earth including a re-entry from orbit.

21. If the launch vehicle is reusable, instructions and procedures about recovering the launch vehicle to the earth's surface, rendering it safe from major accident hazards and enabling the planned landing.

22. Instructions and procedures about the steps to be followed on successful completion of the flight of the launch vehicle or other operator's spaceflight activities.

Launch vehicles with crew or a remote pilot

23. Instructions and procedures for members of the crew and any remote pilot to satisfy any requirements in these Regulations which apply to such members or pilot.

Emergency response

24. The emergency response plan satisfying the requirements in regulation 104 and instructions and procedures to implement that plan.

25. Procedures to ensure that the emergency response plan is tested, reviewed and revised as required by regulation 104(3) and that the results of a test of that plan and details of any revisions to that plan are supplied to the regulator as required by regulation 104(4).

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Ground support equipment

26. Instructions and procedures for using, maintaining, verifying and validating, repairing and servicing any ground support equipment.

Making, collecting and retaining information

27. Instructions and procedures about—

- (a) making recordings referred to in regulation 103(1), and
- (b) collecting and retaining the information referred to in regulation 103(2).