

INTERNATIONAL
STANDARD

ISO
1151-7

Second edition

**Flight dynamics — Vocabulary —
Part 7:
Flight points and flight envelopes**

Dynamique de vol – Vocabulaire —

Partie 7: Points de vol et domaines de vol

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Reference number
ISO 1151-7:2023(E)

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 8, *Aerospace terminology*.

This second edition cancels and replaces the first edition (ISO 1151-7:1985), which has been technically revised.

The main changes are as follows:

- new terms for subclause “Types of aircraft motion” have been supplemented.

A list of all parts in the ISO 1151 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Flight dynamics — Vocabulary —

Part 7: Flight points and flight envelopes

1 Scope

This document defines the concepts and terms used in flight dynamics studies to specify aircraft flight conditions and envelopes.

This document applies to the analysis of operational, experimental or simulated flights for the purposes of safety analyses and qualification, taking into account potential failures and likely environmental conditions.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 Accomplishment of a mission

3.1.1 mission

purpose of a flight achieved while respecting constraints, among others, of time and of space

Note 1 to entry: The objective and the constraints can be specified in a flight plan.

3.1.2 flight program

preschedule of intermediate objectives required to fulfil the *mission* (3.1.1) within an *authorized flight envelope* (3.7.1)

Note 1 to entry: Provision can be made in the flight programme for some conditional changes of intermediate objectives according to circumstances arising during the flight (failure, meteorology, traffic, etc.).

3.1.3 phase flight phase

portion of the flight characterized by an intermediate objective

Note 1 to entry: The intermediate objective is defined with some tolerance as to the accuracy with which the objective is considered to have been achieved, such that the following phase can be initiated under conditions that allow it to be executed.

Note 2 to entry: Examples of flight phases are: take-off, climb, cruise, descent, approach, landing.

3.1.4
sub-phase
flight sub-phase

portion of a *phase* (3.1.3) characterized by an elementary objective

EXAMPLE "Ground run" in the "take-off" phase, "flare" and "ground run" in the "landing" phase.

Note 1 to entry: The elementary objective is defined with some tolerance as to the accuracy with which the objective is considered to have been achieved, such that the following sub-phase can be initiated under conditions that allow it to be executed.

Note 2 to entry: Following the breakdown of a phase into sub-phases, certain parameters can often be considered as constants during the sub-phase [e.g. mass characteristics of the aircraft, *state of the atmosphere* (3.4.1)].

3.2 Controls, geometric configuration and condition of systems

3.2.1
control

element located in the cockpit and operated by the crew to fly the aircraft

EXAMPLE Stick; throttles; undercarriage and flap selection levers; switches to engage autopilot or dampers; pressurization and air conditioning controls.

Note 1 to entry: The same control can be a *piloting control* (3.2.1.1) during one *sub-phase* (3.1.4) and a *selector* (3.2.1.2) during another sub-phase; for example, the throttle is a selector during the "take-off" phase and a piloting control during the "approach" phase.

3.2.1.1
piloting control

control (3.2.1) operated by the pilot, in a continuous or intermittent manner, during a *sub-phase* (3.1.4) in order to comply with the *piloting rules* (3.5.1) and to achieve the objective of that sub-phase

3.2.1.2
selector

control (3.2.1) put into a position by the crew, as laid down in the flight manual, at the beginning of a *sub-phase* (3.1.4) and which remains in that position throughout that sub-phase

3.2.2
configuration
geometric configuration

set of quantities characterizing the relative positions of the various components of the aircraft, that can be controlled by *selectors* (3.2.1.2)

Note 1 to entry: See ISO 1151-6:1982, 6.0.2.

Note 2 to entry: The list of quantities is restricted to those involved in the problem under consideration.

Note 3 to entry: The geometric configuration shall not be confused with the geometric state (see ISO 1151-1-6:1982, 6.1.17) of which it forms only a part.

3.2.3
situation of the systems

set of parameters defining the operating behaviour of the aircraft systems concerned with flight dynamics

Note 1 to entry: The list of parameters is restricted to those involved in the problem under consideration.