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For Comments Only

BUREAU OF INDIAN STANDARDS

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भारतीय मानक **मसौदा**

वैमानिकी और खगोलीय शब्दों की शब्दावली
भाग 2 विमान की गति

*(***आई एस** 7879 **का** ***पहला पुनरीक्षण****)*

Draft *Indian Standard*

GLOSSARY OF AERONAUTICAL AND ASTRONAUTICAL TERMS
PART 2 MOTION OF AIRCRAFT

(First Revision of IS 7879*)*

ICS: 49.020

Air and Space Vehicles Sectional Committee, TED 14	**Last date for receipt of comments is 9/07/2024**

FOREWORD

(Formal Clause to be added later)

This standard was first published in 1975. The present revision has been taken up with a view to incorporating the modifications found necessary as a result of experience gained on the use of this standard. Also, in this revision, the standard has been brought into the latest style and format of Indian Standard, and references to Indian Standards, wherever applicable have been updated. The following major modifications have been incorporated in this revision of the standard:

a) Amendment incorporated in this Standard.

This standard is one of a series of Indian Standards on the glossary of Aeronautical and Astronautical terms. Other standards in this series are:

IS 7879 (Part 1): 1975 Under revision (Doc No. 20706)	Glossary of Aeronautical and Astronautical Terms: Part 1 General
IS 7879 (Part 3): 1975 Under revision (Doc No. 20757)	Glossary of Aeronautical and Astronautical Terms: Part 3 Structure
IS 7879 (Part 4): 1980 Under revision (Doc No. 20759)	Glossary of Aeronautical and Astronautical Terms: Part 4 Aerodynamics
IS 7879 (Part 5): 1982 Under revision (Doc No. 20760)	Glossary of Aeronautical and Astronautical Terms: Part 4 Aerodynes (Heavier - Than - Air - Aircraft)
IS 7879 (Part 6): 1978 Under revision (Doc No. 20763)	Glossary of Aeronautical and Astronautical Terms: Part 6 Space Terms
IS 7879 (Part 7): 1984 Under revision (Doc No. 21135)	Glossary of Aeronautical and Astronautical Terms: Part 7 Air Traffic and Ground Services
IS 7879 (Part 8): 1987 Under revision (Doc No. 20768)	Glossary of Aeronautical and Astronautical Terms: Part 8 Power Plant

Provides standard definitions of technical terms peculiar to aeronautics, astronautics and related subjects. Terms in general use in other branches of engineering are also included where they have some special relevance to aeronautics or astronautics.

This standard consists of a series of parts, each part covering terms specific to a particular feature, type of aircraft, equipment, service, etc.

Each term has been assigned a 4-digit or 5-digit number. The first one (or two) digit, in the thousandth place, represents the part number. This part number with the following digit in the hundredth place represents the section. The last two digits represent the position of the definition within a section. Thus the term 3405 is the 5^{th} definition of Section 34, which is in Part 3.

Where two or more synonymous terms are in use, the term, which is favored, is given first, with the intention that it should gradually displace the others. The alternative terms are given below the preferred terms in less prominent type.

An Indian Standard Glossary of space terms covering definitions pertaining to rockets, missiles, etc., is also under preparation.

Assistance has been derived from BS: 185 ‘Aeronautical and Astronautical Terms’ issued by the British Standards Institution, in the preparation of this Indian Standard.

The composition of the Committee responsible for the formulation of this standard will be added later.

Draft *Indian Standard*

GLOSSARY OF AERONAUTICAL AND ASTRONAUTICAL TERMS
PART 2 MOTION OF AIRCRAFT

(First Revision)

1 SCOPE

This part covers the standard definitions for terms relating to motion of aircraft.

2 REFERENCES

This standard does not contain any cross reference.

3 TERMINOLOGY

SECTION 21 – GENERAL

No.	Term	Definition
2101	Air Launch	The act of launching an object from a vehicle in flight.
2102	Attitude	The orientation of an aircraft relative to a datum line in a datum plane, usually but not necessarily, horizontal.
2103	Flight Path	The path of the centre of gravity of an aircraft relative to the Earth.
2104	Gliding Angle	The angle between the flight path in a glide in still air and the horizontal.
2105	Ground Launch	The act of launching an object from the Earth's surface.
2106	Heave	Motion of an aircraft, relative to the ambient undisturbed air, which has a component of velocity along the normal axis.
2107	JATO	Abbreviation for 'jet-assisted take-off'.
2108	Jet-Borne Flight	Flight in which the aircraft supported primarily by vertical thrust.
2109	Nose Heaviness	The tendency of an aircraft to pitch nose down in flight.

<table>
<tr><th>No.</th><th>Term</th><th>Definition</th></tr>
<tr><td>2110</td><td>Pitching</td><td>Angular motion about the transverse axis.</td></tr>
<tr><td>2111</td><td>RATO</td><td>Abbreviation for 'rocket-assisted take-off'.</td></tr>
<tr><td>2112</td><td>Rolling</td><td>Angular motion about the longitudinal axis.</td></tr>
<tr><td>2113</td><td>Side-Slipping</td><td>Motion of an aircraft, relative to the ambient undisturbed air, which has a component of velocity along the transverse axis.</td></tr>
<tr><td>2114</td><td>Snaking</td><td>A yawing' oscillation, the amplitude of which remains approximately constant.</td></tr>
<tr><td>2115</td><td>Tail Heaviness</td><td>The tendency of an aircraft to pitch nose up in flight.</td></tr>
<tr><td>2116</td><td>Tail Slide</td><td>Rearward motion of an aircraft along its longitudinal axis from a vertical, or near vertical, stalled attitude.</td></tr>
<tr><td>2117</td><td>V/STOL Operations</td><td>Abbreviations as given below are used for the various modes of take-off (TO) and landing (L) of V/STOL aircraft:

C for conventional. The required lift is derive from forward speed alone.

S for short. The ground run is reduce substantially by powered lift or other means.

V for vertical. Powered lift alone is use with no intentional ground run.

RV for rolling. Essentially vertical but with a slow forward speed to ayoid ingestion of hot gases or debris.

These letters are placed at the beginning with TO and/or Ladded thus:

<table><tr><td>VTOL</td><td>STOL</td><td>CTOL</td><td>RVTOL</td></tr><tr><td>VTO</td><td>STO</td><td>CTO</td><td>RVTO</td></tr><tr><td>VL</td><td>SL</td><td>CL</td><td>RVL</td></tr></table></td></tr>
<tr><td>2118</td><td>Yawing</td><td>Angular motion about the normal axis.</td></tr>
<tr><td colspan="3">SECTION 22 — MOTION IN FLIGHT</td></tr>
</table>

No.	Term	Definition
2201	Aerobatics	Manoeuvres intentionally performed with aircraft, other than those required for normal flight (*see* **2215**).
2202	Bank, To	To cause the transverse axis of an aircraft to take up an angle to the horizontal.
2203	Bunt	A manoeuvre in which an aircraft performs part of an inverted loop.
2204	Conversion	Of a V/STOL aircraft. The act of making any necessary adjustments to effect transition.
2205	Dive	A steep descent, with or without power.
2206	Terminal Nose-Dive	A dive during which an aircraft reaches its terminal velocity.
2207	Falling Leaf Descent	An aerobatic manoeuvre in which aeroplane rolls from side to side while still facing in the same direction.
2208	Flare-Out (Flattening-Out Rounding-Out)	The change in flight path between the approach and the landing.
2209	Float, To	To travel horizontally after flare-out and before lending.
2210	Glide	A gradual descent with little or no thrust.
2211	Spiral Glide	A benked continuous gilding turn.
2212	Hover, To	Of a heavier-than-air aircraft. To remain approximately stationary in relation to the ground or to the air mass. Sometimes called position hover when related to the ground.
2213	Loop	A closed flight path of an aeroplane in a vertical plane. Normally the dorsal surfaces remain on the inside of the curved flight path.
2214	Inverted Loop	A loop in which the dorsal surfaces remain on the outside of the curved flight path.
2215	Normal Flight	All flight regimes necessary for travel from point to point, that is taking-off, climbing, straight and level flight, descending, turning, sideslipping and landing provided it does not entail

No.	Term	Definition
		abrupt variations in height or in attitude of the aircraft (*see* **2201**).
2216	Overshoot, To	a) To land beyond the intended area (*see* **2237**); and b) To break off a final approach.
2217	Pull-Out	Recovery from a dive.
2218	Recovery	The process of returning to substantially straight and level flight from a manoeuvre.
2219	Roll	A partial or complete rotation of an aircraft about its longitudinal axis.
2220	Dutch Roll	A lateral oscillation of an aircraft, particularly one in which the ratio of the rolling to yawing motion is appreciable.
2221	Flick-Roll	A rapidly executed roll in which autorotation of the wing may be used to speed up the manoeuvre.
2222	Roll-Off-the-Top	A half loop followed by a half roll with the aeroplane flying in the opposite direction.
2223	Spin	A continuous spiral descent in which the mean angle of incidence exceeds the angle of stall.
2224	Flat Spin	A spin at a large mean angle of incidence, with the longitudinal axis more nearly horizontal than vertical.
2225	Inverted Spin	A spin in which the aircraft is invert and the wing incidence exceeds the negative stalling incidence.
2226	Oscillatory Spin	A spin in which sustained oscillations are present, the most marked being in roll and pitch, for example, the rate of roll changes from zero to a high value and back again in each cycle.
2227	Screen Height	A height of 15 metres used for determination of take-off distance. For low-speed aircraft, a screen height of 11 metres also is in common use.
2228	Speed, Climb Away	Speed at which the steady climb is initiate and maintain. It is equal to or higher than the unstick speed.

No.	Term	Definition
2229	Speed, Rotation	Speed at which the pilot pulls the control column back, so that the aircraft starts rotating in order to get airborne.
2230	Speed, Unstick	Speed at which the aircraft gets airborne.
2231	Stall, To	a) To bring an aircraft into the flight condition in which the wings are stalled; and b) To have reached such a condition.
2232	Stalling	The act of flying an aircraft to the condition at which it stalls.
2233	Stall Turn	A manoeuvre in which an aircraft is pulled up into a steep climb until about to stall, when one wing is allowed to drop and the aircraft falls into a dive.
2234	Transition	a) Of a V/STOL aircraft. Passage from hovering to flight in which the aircraft is mainly supported by the aerodynamic lift derived from forward motion, or vice versa; b) Of a supersonic aircraft. Passage from subsonic to supersonic flight or vice versa; and c) This is the phase between the point where the aircraft just leaves the ground and the point where it sets into a steady climb to achieve a height of 15 metres.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

WILL BE ADDED LATER