

ABBREVIATIONS USED IN AIRWAY MANUAL

DEFINITIONS

A/A	Air to Air	AIREP	Air-Report
AAF	Army Air Field	AIS	Aeronautical Information Services
AAIM	Aircraft Autonomous Integrity Monitoring	ALA	Aircraft Landing Area
AAIS	Automated Aerodrome Information Service	ALF	Auxiliary Landing Field
AAL	Above Aerodrome Level	ALS	Approach Light System
AAS	Airport Advisory Service	ALS	Low Intensity Approach Lights
AAU	Authorized Approach UNICOM	ALT	Altitude
AB	Air Base	ALTN	Alternate
ABM	Abeam	AMA	Area Minimum Altitude
ABN	Aerodrome Beacon	AMSL	Above Mean Sea Level
AC	Air Carrier	ANGB	Air National Guard Base
ACA	Arctic Control Area	AOE	Airport/Aerodrome of Entry
ACA	Approach Control Area	AOM	Airport Operating Minimums
ACAS	Airborne Collision Avoidance System	AOR	Area of Responsibility
ACARS	Airborne Communications Addressing and Reporting System	APAPI	Abbreviated Precision Approach Path Indicator
ACC	Area Control Center	APC	Area Positive Control
ACFT	Aircraft	APCH	Approach
ACN	Aircraft Classification Number	APP	Approach Control
AD	Aerodrome	APT	Airport
ADA	Advisory Area	APV	Approach Procedure with Vertical Guidance
ADF	Automatic Direction Finding	AR	Authorization Required
ADIZ	Air Defense Identification Zone	ARB	Air Reserve Base
ADNL	Additional	ARINC	Aeronautical Radio, Inc.
ADR	Advisory Route	ARO	Aerodrome Reporting Officer
ADS	Automatic Dependent Surveillance	ARP	Airport Reference Point
ADV	Advisory Area	ARR	Arrival
AEIS	Aeronautical Enroute Information Service	ARTCC	Air Route Traffic Control Center
AER	Approach End of Runway	ASDA	Accelerate Stop Distance Available
AERADIO	Air Radio	ASOS	Automated Surface Observing System
AERO	Aerodrome	ASR	Airport Surveillance Radar
AF Aux	Air Force Auxiliary Field	ATA	Actual Time of Arrival
AFB	Air Force Base	ATCAA	Air Traffic Control Assigned Airspace
AFIS	Aerodrome Flight Information Service	ATCC	Air Traffic Control Center
AFLD	Airfield	ATCT	Air Traffic Control Tower
AFN	American Forces Network	ATD	Actual Time of Departure
AFRS	Armed Forces Radio Stations	ATF	Aerodrome Traffic Frequency
AFRU	Aerodrome Frequency Response Unit	ATFM	Air Traffic Flow Management
AFS	Air Force Station	ATIS	Automatic Terminal Information Service
AFSS	Automated Flight Service Station	ATND SKD	Attended Scheduled Hours
A/G	Air-to-Ground	ATS	Air Traffic Service
AGL	Above Ground Level	ATZ	Aerodrome Traffic Zone
AGNIS	Azimuth Guidance Nose-in-Stand	AU	Approach UNICOM
AH	Alert Height	AUP	Airspace Utilization Plane
AHP	Army Heliport	AUTH	Authorized
AIRAC	Aeronautical Information Regulation and Control	AUW	All-up Weight
		AUX	Auxiliary
		AVBL	Available
		AWIB	Aerodrome Weather Information Broadcast

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AWIS	Aerodrome Weather Information Service	CONTD	Continued
AWOS	Automated Weather Observing System	COORDS	Coordinates
AWSS	Aviation Weather Sensor System	COP	Change Over Point
AWY	Airway	CORR	Corridor
AZM	Azimuth	CP	Command Post
Baro VNAV	Barometric Vertical Navigation	CPDLC	Controller Pilot Data Link Communications
BC	Back Course	Cpt	Clearance (Pre-Taxi Procedure)
BCM	Back Course Marker	CRC	Cyclical Redundancy Check
BCN	Beacon	CRP	Compulsory Reporting Point
BCOB	Broken Clouds or Better	CRS	Course
BCST	Broadcast	CST	Central Standard Time
BDRY	Boundary	CTA	Control Area
BLDG	Building	CTAF	Common Traffic Advisory Frequency
BM	Back Marker	CTL	Control
BRG	Bearing	CTOT	Calculated Take-off Time
B-RNAV	Basic RNAV	CTR	Control Zone
BS	Broadcast Station (Commercial)	CVFP	Chartered Visual Flight Procedure
C	ATC IFR Flight Plan Clearance Delivery Frequency	CVFR	Controlled VFR
CADIZ	Canadian Air Defense Identification Zone	D	Day
CAE	Control Area Extension	DA	Decision Altitude
CA/GRS	Certified Air/Ground Radio Service	DA (H)	Decision Altitude (Height)
CANPA	Constant Angle Non-Precision Approach	D-ATIS	Digital ATIS
CARS	Community Aerodrome Radio Station	DCL	Data Link Departure Clearance Service
CAT	Category	DCT	Direct
CBA	Cross Border Area	DECSND	Decommissioned
CDFA	Continuous Descent Final Approach	DEG	Degree
CDI	Course Deviation Indicator	DEP	Departure Control/Departure Procedures
CDR	Conditional Route	DER	Departure End of Runway
CDT	Central Daylight Time	DEWIZ	Distance Early Warning Identification Zone
CEIL	Ceiling	DF	Direction Finder
CERAP	Combined Center/Radar Approach Control	DISPL THRESH	Displaced Threshold
CFIT	Controlled Flight Into Terrain	DIST	Distance
CGAS	Coast Guard Air Station	DME	Distance-Measuring Equipment
CGL	Circling Guidance Lights	DOD	Department of Defense
CH	Channel	DOM	Domestic
CH	Critical Height	DP	Obstacle Departure Procedure
CHGD	Changed	DRCO	Dial-up Remote Communications Outlet
CL	Centerline Lights	E	East or Eastern
CMNPS	Canadian Minimum Navigation Performance Specification	EAT	Expected Approach Time
CMV	Converted Met Visibility	ECOMS	Jeppesen Explanation of Common Minimum Specifications
CNF	Computer Navigation Fix	EDT	Eastern Daylight Time
CO	County	EET	Estimated Elapsed Time
COMLO	Compass Locator	EFAS	Enroute Flight Advisory Service
COMMS	Communications	EFF	Effective
CONT	Continuous	EFVS	Enhanced Flight Vision System

**ABBREVIATIONS USED IN AIRWAY MANUAL**

EH	Eastern Hemisphere	GLONASS	Global Orbiting Navigation Satellite System
ELEV	Elevation	GLS	Global Navigation Satellite System [GNSS] Landing System
EMAS	Engineered Materials Arresting System	GMT	Greenwich Mean Time
EMERG	Emergency	GND	Ground Control
ENG	Engine	GND	Surface of the Earth (either land or water)
EOBT	Estimated Off Block Time	GNSS	Global Navigation Satellite System
EST	Eastern Standard Time	GP	Glidepath
EST	Estimated	GPA	Glidepath Angle
ETA	Estimated Time of Arrival	GPS	Global Positioning System
ETD	Estimated Time of Departure	GPWS	Ground Proximity Warning System
ETE	Estimated Time Enroute	GS	Glide Slope
ETOPS	Extended Range Operation with two-engine airplanes	G/S	Ground Speed
EVS	Enhanced Vision System	GWT	Gross Weight
FAA	Federal Aviation Administration	H	Non-Directional Radio Beacon or High Altitude
FACF	Final Approach Course Fix	H24	24 Hour Service
FAF	Final Approach Fix	HAA	Height Above Airport
FAIL	Failure	HALS	High Approach Landing System
FANS	Future Air Navigation System	HAS	Height Above Site
FAP	Final Approach Point	HAT	Height Above Touchdown
FAR	Federal Aviation Regulation	HC	Critical Height
FAS DB	Final Approach Segment Datablock	HDG	Heading
FAT	Final Approach Track	HF	High Frequency (3-30 MHz)
FATO	Final Approach and Take-off Area	HGS	Head-up Guidance System
FCP	Final Control Point	HI	High (altitude)
FIA	Flight Information Area	HI	High Intensity (lights)
FIC	Flight Information Center	HIALS	High Intensity Approach Light System
FIR	Flight Information Region	HIRL	High Intensity Runway Edge Lights
FIS	Flight Information Service	HIRO	High Intensity Runway Operations
FL	Flight Level (Altitude)	HIWAS	Hazardous Inflight Weather Advisory Service
FLARES	Flare Pots or Goosenecks	HJ	Sunrise to Sunset
FLD	Field	HN	Sunset to Sunrise
FLG	Flashing	HO	By Operational Requirements
FLT	Flight	hPa	Hectopascal (one hectopascal = one millibar)
FM	Fan Marker	HR	Hours (period of time)
FMC	Flight Management Computer	HS	During Hours of Scheduled Operations
FMS	Flight Management System	HST	High Speed Taxiway Turn-off
FPM	Feet Per Minute	HUD	Head-up Display
FPR	Flight Planning Requirements	HUDLS	Head-Up Display Landing System
FRA	Free Route Airspace	HX	No Specific Working Hours
FREQ	Frequency	Hz	Hertz (cycles per second)
FSS	Flight Service Station	I	Island
FT	Feet	IAC	Instrument Approach Chart
FTS	Flexible Track System	IAF	Initial Approach Fix
G	Guards only (radio frequencies)	IAML	Integrity Monitor Alarm
GA	General Aviation	IAP	Instrument Approach Procedure
GBAS	Ground-Based Augmentation System	IAS	Indicated Airspeed
GCA	Ground Controlled Approach (radar)		
GCO	Ground Communication Outlet		
GEN	General		

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IATA	International Air Transport Association	Lctr	Locator (Compass)
IAWP	Initial Approach Waypoint	LDA	Landing Distance Available
IBN	Identification Beacon	LDA	Localizer-type Directional Aid
ICAO	International Civil Aviation Organization	LDI	Landing Direction Indicator
IDENT	Identification	LDIN	Lead-in Light System
IF	Intermediate Fix	LGTH	Length
IFBP	Inflight Broadcast Procedure	LIM	Locator Inner Marker
IFR	Instrument Flight Rules	LIRL	Low Intensity Runway Lights
IGS	Instrument Guidance System	LLWAS	Low Level Wind Shear Alert System
ILS	Instrument Landing System	LMM	Locator Middle Marker
IM	Inner Marker	LNAV	Lateral Navigation
IMAL	Integrity Monitor Alarm	LNDG	Landing
IMC	Instrument Meteorological Conditions	LO	Locator at Outer Marker Site
IMTA	Intensive Military Training Area	LOC	Localizer
INDEFINELY	Indefinitely	LOM	Locator Outer Marker
IN or INS	Inches	LONG	Longitude
INFO	Information	LPV	Localizer Performance with Vertical Guidance
INOP	Inoperative	LSALT	Lowest Safe Altitude
INS	Inertial Navigation System	LT	Local Time
INT	Intersection	LTP	Landing Threshold Point
INTL	International	LTS	Lights
IORRA	Indian Ocean Random RNAV Area	LVP	Low Visibility Procedures
IR	Instrument Restricted Controlled Airspace	LWIS	Limited Weather Information System
IS	Islands	M	Meters
ITWS	Integrated Terminal Weather System	MAA	Maximum Authorized Altitude
I/V	Instrument/Visual Controlled Airspace	MAG	Magnetic
JAA	Joint Aviation Authorities	MAHF	Missed Approach Holding Fix
JAR-OPS	Joint Aviation Requirements—Operations	MALS	Medium Intensity Approach Light System
KGS	Kilograms	MALSF	Medium Intensity Approach Light System with Sequenced Flashing Lights
kHz	Kilohertz	MALSR	Medium Intensity Approach Light System with Runway Alignment Indicator Lights
KLAS	Knots Indicated Airspeed	MAP	Missed Approach Point
KM	Kilometers	MAX	Maximum
KMH	Kilometer(s) per Hour	MB	Millibars
KT	Knots	MCA	Minimum Crossing Altitude
KTAS	Knots True Airspeed	MCAF	Marine Corps Air Facility
L	Locator (Compass)	MCAS	Marine Corps Air Station
LAA	Local Airport Advisory	MCTA	Military Controlled Airspace
LAAS	Local Area Augmentation System	MDA	Minimum Descent Altitude
LACFT	Large Aircraft	MDA(H)	Minimum Descent Altitude (Height)
LAHSO	Land and Hold Short Operations	MDT	Mountain Daylight Time
LAT	Latitude	MEA	Minimum Enroute Altitude
LBCM	Locator Back Course Marker	MEHT	Minimum Eye Height Over Threshold
LBM	Locator Back Marker	MEML	Memorial
LBS	Pounds (Weight)	MET	Meteorological
LCG	Load Classification Group	MF	Mandatory Frequency
LCN	Load Classification Number		

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MFA	Minimum Flight Altitude	NDB	Non-Directional Beacon/Radio Beacon
MHA	Minimum Holding Altitude	NE	Northeast
MHz	Megahertz	NM	Nautical Mile(s)
MI	Medium Intensity (lights)	No	Number
MIALS	Medium Intensity Approach Light System	NoPT	No Procedure Turn
MIL	Military	NOTAM	Notices to Airmen
MIM	Minimum	NPA	Non-Precision Approach
MIN	Minute	NW	Northwest
MIRL	Medium Intensity Runway Edge Lights	NWC	Naval Weapons Center
MKR	Marker Radio Beacon	OAC	Oceanic Area Control
MLS	Microwave Landing System	OAS	Obstacle Assessment Surface
MM	Middle Marker	OCA	Oceanic Control Area
MNM	Minimum	OCA (H)	Obstacle Clearance Altitude (Height)
MNPS	Minimum Navigation Performance Specifications	OCL	Obstacle Clearance Limit
MOA	Military Operation Area	OCNL	Occasional
MOCA	Minimum Obstruction Clearance Altitude	OCTA	Oceanic Control Area
MORA	Minimum Off-Route Altitude (Grid or Route)	ODALS	Omni-Directional Approach Light System
MRA	Minimum Reception Altitude	ODP	Obstacle Departure Procedure
MROT	Minimum Runway Occupancy Time	OFZ	Obstacle Free Zone
MSA	Minimum Safe/Sector Altitude	OM	Outer Marker
MSL	Mean Sea Level	OPS	Operations or Operates
MST	Mountain Standard Time	O/R	On Request
MTA	Military Training Area	O/T	Other Times
MTAF	Mandatory Traffic Advisory Frequency	OTR	Oceanic Transition Route
MTCA	Minimum Terrain Clearance Altitude	OTS	Out-of-Service
MTMA	Military Terminal Control Area	PA	Precision Approach
MTOW	Maximum Take-off Weight	PAL	Pilot Activated Lighting
MUN	Municipal	PANS-OPS	Procedures for Air Navigation Services - Aircraft Operations
MVA	Minimum Vectoring Altitude	PAPI	Precision Approach Path Indicator
N	Night, North or Northern	PAR	Precision Approach Radar
NA	Not Authorized	PARK	Parking
NAAS	Naval Auxiliary Air Station	PCL	Pilot Controlled Lighting
NADC	Naval Air Development Center	PCN	Pavement Classification Number
NAEC	Naval Air Engineering Center	PCZ	Positive Control Zone
NAF	Naval Air Facility	PDC	Pre-Departure Clearance
NALF	Naval Auxiliary Landing Field	PDG	Procedure Design Gradient
NAP	Noise Abatement Procedure	PDT	Pacific Daylight Time
NAR	North American Routes	PERF	Performance
NAS	Naval Air Station	PERM	Permanent
NAT	North Atlantic Traffic	PinS	Point In Space
NAT/OTS	North Atlantic Traffic/Organized Track System	PISTON	Piston Aircraft
NATL	National	PJE	Parachute Jumping Exercise
NAVAID	Navigational Aid	PLASI	Pulsating Visual Approach Slope Indicator
NCA	Northern Control Area	PNR	Prior Notice Required
NCRP	Non-Compulsory Reporting Point	POFZ	Precision Obstacle Free Zone
		PPO	Prior Permission Only
		PPR	Prior Permission Required
		PRA	Precision Radar Approach

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PRM	Precision Radar Monitor	RTF	Radiotelephony
P-RNAV	Precision RNAV	RTS	Return to Service
PROC	Procedure	RVR	Runway Visual Range
PROP	Propeller Aircraft	RVSM	Reduced Vertical Separation Minimum
PSP	Pierced Steel Planking	RVV	Runway Visibility Values
PST	Pacific Standard Time	RW	Runway
PTO	Part Time Operation	RWSL	Runway Status Lights
PVT	Private Operator	RWY	Runway
QDM	Magnetic bearing to facility	S	South or Southern
QDR	Magnetic bearing from facility	SAAAR	Special Aircraft and Aircrew Authorization Required
QFE	Height above airport elevation (or runway threshold elevation) based on local station pressure	SALS	Short Approach Light System
QNE	Altimeter setting 29.92" Hg or 1013.2 Mb.	SALSF	Short Approach Light System with Sequenced Flashing Lights
QNH	Altitude above sea level based on local station pressure	SAP	Stabilized Approach
R	R-063 or 063R Magnetic Course (radial) measured as 063 from a VOR station. Flight can be inbound or outbound on this line.	SAR	Search and Rescue
RA	Radio Altimeter	SATCOM	Satellite voice air-ground calling
RAI	Runway Alignment Indicator	SAWRS	Supplementary Aviation Weather Reporting Station
RAIL	Runway Alignment Indicator Lights	SBAS	Satellite-Based Augmentation System
RAIM	Receiver Autonomous Integrity Monitoring	SCA	Southern Control Area
RAPCON	Radar Approach Control	SCOB	Scattered Clouds or Better
RASS	Remote Altimeter Source	SDF	Simplified Directional Facility
RCAG	Remote Communications Air Ground	SE	Southeast
RCC	Rescue Coordination Center	SEC	Seconds
RCL	Runway Centerline	SELCAL	Selective Call System
RCLM	Runway Center Line Markings	SFC	Surface of the earth (either land or water)
RCO	Remote Communications Outlet	SFL	Sequenced Flashing Lights
REF	Reference	SFL-V	Sequenced Flashing Lights - Variable Light Intensity
REIL	Runway End Identifier Lights	SID	Standard Instrument Departure
REP	Reporting Point	SIWL	Single Isolated Wheel Load
RESA	Runway End Safety Area	SKD	Scheduled
REV	Reverse	SLP	Speed Limiting Point
REP	Ramp Entrance Point	SM	Statute Miles
RF	Radius to Fix	SMA	Segment Minimum Altitude
RL	Runway (edge) Lights	SMGCS	Surface Movement Guidance and Control System
RNAV	Area Navigation	SMSA	Segment Minimum Safe Altitude
RNP	Required Navigation Performance	SOC	Start of Climb
RNP AR	Required Navigation Performance Authorization Required	SODALS	Simplified Omnidirectional Approach Lighting System
RNPC	Required Navigation Performance Capability	SPAR	French Light Precision Approach Radar
ROC	Rate of Climb	SRA	Special Rules Area
RON	Remain Overnight	SRA	Surveillance Radar Approach
RPT	Regular Public Transport	SRE	Surveillance Radar Element
RSA	Runway Safety Area	SR-SS	Sunrise-Sunset
RTE	Route	SSALF	Simplified Short Approach Light System with Sequenced Flashing Lights

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SSALR	Simplified Short Approach Light System with Runway Alignment Indicator Lights	TODA	Take-off Distance Available
SSALS	Simplified Short Approach Light System	TORA	Take-off Run Available
SSB	Single Sideband	TP	Turning Point
SSR	Secondary Surveillance Radar (in U.S.A. ATCRBS)	TRA	Temporary Reserved Airspace
STAR	Standard Terminal Arrival Route (USA)	TRACON	Terminal Radar Approach Control
	Standard Instrument Arrival (ICAO)	TRANS	Transition(s)
STD	Indication of an altimeter set to 29.92" Hg or 1013.2 hPa (Mb) without temperature correction	TRANS ALT	Transition Altitude
Std	Standard	TRANS LEVEL	Transition Level
ST-IN	Straight-in	TRCV	Tri-Color Visual Approach Slope Indicator
STOL	Short Take-off and Landing	TSA	Temporary Segregated Area
SUPP	Supplemental/Supplementary	TVOR	Terminal VOR
SW	Single Wheel Landing Gear	TWEB	Transcribed Weather Broadcast
SW	Southwest	TWIP	Terminal Weather Information for Pilots
SYS	System	TWR	Tower (Aerodrome Control)
°T	True (degrees)	TWY	Taxiway
T	Terrain clearance altitude (MOCA)	U	Unspecified
T	Transmits only (radio frequencies)	U	UNICOM
T-VASI	Tee Visual Approach Slope Indicator	UAS	Unmanned Aerial System
TA	Transition Altitude	UAV	Unmanned Aerial Vehicle
TAA	Terminal Arrival Area (FAA)	UFN	Until Further Notice
TAA	Terminal Arrival Altitude (ICAO)	UHF	Ultra High Frequency (300-3000 MHz)
TACAN	Tactical Air Navigation (bearing and distance station)	UIR	Upper Flight Information Region
TAR	Terminal Area Surveillance Radar	UNCTL	Uncontrolled
TAS	True Air Speed	UNICOM	Aeronautical Advisory Service
TCA	Terminal Control Area	UNICOM (A)	Automated UNICOM
TCAS	Traffic Alert and Collision Avoidance System	UNL	Unlimited
TCH	Threshold Crossing Height	U/S	Unserviceable
TCTA	Transcontinental Control Area	USAF	US Air Force
TDWR	Terminal Doppler Weather Radar	USB	Upper Sideband
TDZ	Touchdown Zone	USN	US Navy
TDZE	Touchdown Zone Elevation	UTA	Upper Control Area
TEMP	Temporary	UTC	Coordinated Universal Time
TERPS	United States Standard for Terminal Instrument Procedure	VAL	Vertical Alert Limit
THR	Threshold	VAR	Magnetic Variation
TIBA	Traffic Information Broadcast by Aircraft	VASI	Visual Approach Slope Indicator
TIZ	Traffic Information Zone	VDA	Vertical Descent Angle
TL	Transition Level	VDP	Visual Descent Point
TMA	Terminal Control Area	VE	Visual Exempted
TML	Terminal	VFR	Visual Flight Rules
TMN	Terminates	VGSI	Visual Glide Slope Indicator
TMZ	Transponder Mandatory Zone	VHA	Volcanic Hazard Area
TNA	Transition Area	VHF	Very High Frequency (30-300 MHz)
		VIBAL	Visibilité Balise (RVR taken by a human observer)
		VIS	Visibility
		VMC	Visual Meteorological Conditions
		VNAP	Vertical Noise Abatement Procedures

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VNAV	Vertical Navigation
VOLMET	Meteorological Information for Aircraft in Flight
VOR	VHF Omnidirectional Range
VORTAC	VOR and TACAN co-located
VOT	Radiated Test Signal VOR
VPA	Vertical Path Angle
VV	Vertical Visibility
V/V	Vertical Velocity or speed
W	West or Western
WAAS	Wide Area Augmentation System
WATIR	Weather and Terminal Information Reciter
WH	Western Hemisphere
W/O	Without
WP	Area Navigation (RNAV) Waypoint
WSP	Weather Systems Processor
WX	Weather
X	On Request
Z	Zulu Time/Coordinated Universal Time (UTC)



**GLOSSARY**

This glossary provides definitions that are unique and abbreviations commonly used in Jeppesen publications. No attempt has been made to list all the terms of basic aeronautical nomenclature.

Because of the international nature of flying, terms used by the FAA (USA) are included when they differ from International Civil Aviation Organization (ICAO) definitions. A vertical bar, that is omitted on all new pages, tables of contents, tabular listings and graphics, indicates changes.

**DEFINITIONS**

**ACCELERATE STOP DISTANCE AVAILABLE (ASDA)** — The length of the take-off run available plus the length of the stopway, if provided.

**ACROBATIC FLIGHT** — Manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed.

**ADEQUATE VIS REF (Adequate Visual Reference)** — Runway markings or runway lighting that provides the pilot with adequate visual reference to continuously identify the take-off surface and maintain directional control throughout the take-off run.

**ADS AGREEMENT** — An ADS reporting plan which establishes the conditions of ADS data reporting (i.e., data required by the air traffic services unit and frequency of ADS reports which have to be agreed to prior to the provision of the ADS services).

*NOTE: The terms of the agreement will be exchanged between the ground system and the aircraft by means of a contract, or a series of contracts.*

**ADS-C AGREEMENT** — A reporting plan which establishes the conditions of ADS-C data reporting (i.e. data required by the air traffic services unit and frequency of ADS-C reports which have to be agreed to prior to using ADS-C in the provision of air traffic services).

*NOTE: The terms of the agreement will be exchanged between the ground system and the aircraft by means of a contract, or a series of contracts.*

**ADS CONTRACT** — A means by which the terms of an ADS agreement will be exchanged between the ground system and the aircraft, specifying under what conditions ADS reports would be initiated, and what data would be contained in the reports.

*NOTE: The term "ADS contract" is a generic term meaning variously, ADS event contract, ADS demand contract, ADS periodic contract or an emergency mode. Ground forwarding of ADS reports may be implemented between ground systems.*

**ADVISORY AIRSPACE** — An airspace of defined dimensions, or designated route, within which air traffic advisory service is available.

**ADVISORY ROUTE (ADR)** — A designated route along which air traffic advisory service is available.

*NOTE: Air traffic control service provides a much more complete service than air traffic advisory service; advisory areas and routes are therefore not*

*established within controlled airspace, but air traffic advisory service may be provided below and above control areas.*

**ADVISORY SERVICE** — Advice and information provided by a facility to assist pilots in the safe conduct of flight and aircraft movement.

**AERODROME** — A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

*NOTE: The term "aerodrome" where used in the provisions relating to flight plans and ATS messages is intended to cover also sites other than aerodromes which may be used by certain types of aircraft; e.g., helicopters or balloons.*

**AERODROME CLIMATOLOGICAL SUMMARY** — Concise summary of specified meteorological elements at an aerodrome, based on statistical data.

**AERODROME CLIMATOLOGICAL TABLE** — Table providing statistical data on the observed occurrence of one or more meteorological elements at an aerodrome.

**AERODROME CONTROL SERVICE** — Air traffic control service for aerodrome traffic.

**AERODROME CONTROL TOWER** — A unit established to provide air traffic control service to aerodrome traffic.

**AERODROME ELEVATION** — The elevation of the highest point of the landing area.

**AERODROME FLIGHT INFORMATION SERVICE (AFIS)** — A directed traffic information and operational information service provided within an aerodrome flight information zone, to all radio equipped aircraft, to assist in the safe and efficient conduct of flight.

**AERODROME METEOROLOGICAL OFFICE** — An office, located at an aerodrome, designated to provide meteorological service for international air navigation.

**AERODROME REFERENCE CODE** — A simple method for interrelating the numerous specifications concerning the characteristics of aerodromes so as to provide a series of aerodromes facilities that are suitable for the aeroplanes that are intended to operate at the aerodrome. The aerodrome reference code — code number and letter, which are selected for aerodrome planning purposes, have the meanings assigned to them as indicated in the table below:

Code Element 1			Code Element 2	
Code Number	Aeroplane Reference Field Length	Code Letter	Wing Span	Outer Main Gear Wheel Span <sup>a)</sup>
(1)	(2)	(3)	(4)	(5)
1	Less than 800m	A	Up to but not including 15m	Up to but not including 4.5m

## GLOSSARY

Code Element 1			Code Element 2	
Code Number	Aeroplane Reference Field Length	Code Letter	Wing Span	Outer Main Gear Wheel Span <sup>a)</sup>
(1)	(2)	(3)	(4)	(5)
2	800m up to but not including 1200m	B	15m up to but not including 24m	4.5m up to but not including 6m
3	1200m up to but not including 1800m	C	24m up to but not including 36m	6m up to but not including 9m
4	1800m and over	D	36m up to but not including 52m	9m up to but not including 14m
		E	52m up to but not including 65m	9m up to but not including 14m
		F	65m up to but not including 80m	14m up to but not including 16m

<sup>a)</sup> Distance between the outside edges of the main gear wheels.

*NOTE: Guidance on planning for aeroplanes with wing spans greater than 80m is given in the ICAO Doc. 9157 "Aerodrome Design Manual," Parts 1 and 2.*

**AERODROME TRAFFIC** — All traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome.

*NOTE: An aircraft is in the vicinity of an aerodrome when it is in, entering or leaving an aerodrome traffic circuit.*

**AERODROME TRAFFIC CIRCUIT** — The specified path to be flown by aircraft operating in the vicinity of an aerodrome.

**AERODROME TRAFFIC FREQUENCY (ATF)** — A frequency designated at an uncontrolled airport. An ATF is used to ensure all radio equipped aircraft operating within the area, normally within a 5NM radius of the airport, are listening on a common frequency. The ATF is normally the ground station frequency. Where a ground station does not exist, a common frequency is designated. Radio call sign is that of the ground station, or where no ground station exists, a broadcast is made with the call sign "Traffic Advisory." Jeppesen charts list the frequency and the area of use when other than the standard 5NM.

**AERODROME TRAFFIC ZONE (ATZ)** — An airspace of detailed dimensions established around an aerodrome for the protection of aerodrome traffic.

**AERONAUTICAL FIXED SERVICE (AFS)** — A telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air services.

**AERONAUTICAL FIXED STATION** — A station in the aeronautical fixed service.

**AERONAUTICAL FIXED TELECOMMUNICATION NETWORK (AFTN)** — A world-wide system of aeronautical fixed circuits provided, as part of the aeronautical fixed service, for the exchange of messages and/or digital data between aeronautical fixed stations having the same or compatible communication characteristics.

**AERONAUTICAL GROUND LIGHT** — Any light specially provided as an aid to air navigation, other than a light displayed on an aircraft.

**AERONAUTICAL INFORMATION PUBLICATION (AIP)** — A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

**AERONAUTICAL METEOROLOGICAL STATION** — A station designated to make observations and meteorological reports for use in international air navigation.

**AERONAUTICAL MOBILE SERVICE** — A mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies.

**AERONAUTICAL RADIO, INCORPORATED (ARINC)** — An international radio network providing air-to-ground communications available on a subscription (fee) basis.

**AERONAUTICAL STATION** — A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea.

**AERONAUTICAL TELECOMMUNICATION SERVICE** — A telecommunication service provided for any aeronautical purpose.

**AERONAUTICAL TELECOMMUNICATION STATION** — A station in the aeronautical telecommunication service.

**AIRBORNE COLLISION AVOIDANCE SYSTEM (ACAS)** — An aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders.

**AIRCRAFT** — Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

**AIRCRAFT ADDRESS** — A unique combination of 24 bits available for assignment to an aircraft for the purpose of air-ground communications, navigation and surveillance.

**AIRCRAFT APPROACH CATEGORY (US TERPS)** — A grouping of aircraft based on a speed of  $V_{ref}$ , if specified, or if  $V_{ref}$  is not specified,  $1.3 V_{S0}$  at the maximum certificated landing weight.  $V_{ref}$ ,  $V_{S0}$ , and the maximum certificated landing weight

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are those values as established for the aircraft by the certification authority of the country of registry. An aircraft shall fit in only one category. If it is necessary to maneuver at speeds in excess of the upper limit of a speed range for a category, the minimums for the next higher category must be used. For example, an aircraft which falls in Category A, but is circling to land at a speed in excess of 91 knots, should use the approach Category B minimums when circling to land. The categories are as follows:

Category A	Speed less than 91KT.
Category B	Speed 91KT or more but less than 121KT.
Category C	Speed 121KT or more but less than 141KT.
Category D	Speed 141KT or more but less than 166KT.
Category E	Speed 166KT or more.

**AIRCRAFT APPROACH CATEGORY (ICAO)** — The ICAO table, depicted in the ATC section-200 series, indicates the specified range of handling speeds (IAS in Knots) for each category of aircraft to perform the maneuvers specified. These speed ranges have been assumed for use in calculating airspace and obstacle clearance for each procedure.

**AIRCRAFT IDENTIFICATION** — A group of letters, figures or combination thereof which is either identical to, or the coded equivalent of, the aircraft call sign to be used in air-ground communications, and which is used to identify the aircraft in ground-ground air traffic services communications.

**AIRCRAFT – LARGE AIRCRAFT (LACFT)** — Term used when referring to ICAO aircraft category DL standard dimensions:

- wing span – more than 65m/213ft (max 80m/262ft); and/or
- vertical distance between the flight parts of the wheels and the glide path antenna – more than 7m/23ft (max 8m/26ft).

For precision approach procedures, the dimensions of the aircraft are also a factor for the calculation of the OCH.

For category DL aircraft, additional OCA/H is provided, when necessary.

**AIRCRAFT OBSERVATION** — The evaluation of one or more meteorological elements made from an aircraft in flight.

**AIRCRAFT PROXIMITY** — A situation in which, in the opinion of a pilot or air traffic services personnel, the distance between aircraft as well as their relative positions and speed have been such that the safety of the aircraft involved may have been compromised. An aircraft proximity is classified as follows:

**Risk of Collision** — The risk classification of an aircraft proximity in which serious risk of collision has existed.

**Safety not Assured** — The risk classification of an aircraft proximity in which the safety of the aircraft may have been compromised.

**No Risk of Collision** — The risk classification of an aircraft proximity in which no risk of collision has existed.

**Risk not Determined** — The risk classification of an aircraft proximity in which insufficient information was available to determine the risk involved, or inconclusive or conflicting evidence precluded such determination.

**AIRCRAFT STATION** — A mobile station in the aeronautical mobile service, other than a survival craft station, located on board an aircraft.

**AIR DEFENSE IDENTIFICATION ZONE (ADIZ)** — The area of airspace over land or water, extending upward from the surface, within which the ready identification, the location, and the control of aircraft are required in the interest of national security.

**AIR-GROUND COMMUNICATION** — Two-way communication between aircraft and stations or locations on the surface of the earth.

**AIR-GROUND CONTROL RADIO STATION** — An aeronautical telecommunication station having primary responsibility for handling communications pertaining to the operation and control of aircraft in a given area.

**AIRMET INFORMATION** — Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en route weather phenomena which may affect the safety of low-level aircraft operations and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof.

**AIRPORT** — An area on land or water that is used or intended to be used for the landing and take-off of aircraft and includes its buildings and facilities, if any.

**AIRPORT ELEVATION/FIELD ELEVATION** — The highest point of an airports usable runways measured in feet from mean sea level. In a few countries, the airport elevation is determined at the airport reference point.

**AIRPORT REFERENCE POINT (ARP)** — A point on the airport designated as the official airport location.

**AIRPORT SURVEILLANCE RADAR (ASR)** — Approach control radar used to detect and display an aircraft's position in the terminal area. ASR provides range and azimuth information but does not provide elevation data. Coverage of the ASR can extend up to 60 miles.

**AIRPROX** — The code word used in an air traffic incident report to designate aircraft proximity.

**AIR-REPORT** — A report from an aircraft in flight prepared in conformity with requirements for position and operational and/or meteorological reporting.

*NOTE: Details of the AIREP form are given in PANSATM (Doc 4444) and ATC section.*

**AIR-TAXIING** — Movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 20KT (37kmh).

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*NOTE: The actual height may vary, and some helicopters may require air-taxiing above 25ft (8m) AGL to reduce ground effect turbulence or provide clearance for cargo slingloads.*

**AIR-TO-GROUND COMMUNICATION** — One-way communication from aircraft to stations or locations on the surface of the earth.

**AIR TRAFFIC** — All aircraft in flight or operating on the manoeuvring area of an aerodrome.

**AIR TRAFFIC ADVISORY SERVICE** — A service provided within advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on IFR flight plans.

**AIR TRAFFIC CONTROL ASSIGNED AIRSPACE (ATCAA)** — Airspace of defined vertical/lateral limits, assigned by ATC, for the purpose of providing air traffic segregation between the specified activities being conducted within the assigned airspace and other IFR air traffic.

**AIR TRAFFIC CONTROL CLEARANCE** — Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

*NOTE 1: For convenience, the term "air traffic control clearance" is frequently abbreviated to "clearance" when used in appropriate contexts.*

*NOTE 2: The abbreviated term "clearance" may be prefixed by the words "taxi," "take-off," "departure," "en route," "approach" or "landing" to indicate the particular portion of flight to which the air traffic control clearance relates.*

**AIR TRAFFIC CONTROL INSTRUCTION** — Directives issued by air traffic control for the purpose of requiring a pilot to take a specific action.

**AIR TRAFFIC CONTROL SERVICE** — A service provided for the purpose of:

- a. preventing collisions:
  1. between aircraft; and
  2. on the manoeuvring area between aircraft and obstructions; and
- b. expediting and maintaining an orderly flow of air traffic.

**AIR TRAFFIC CONTROL UNIT** — A generic term meaning variously, area control centre, approach control office or aerodrome control tower.

**AIR TRAFFIC SERVICE (ATS)** — A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).

**AIR TRAFFIC SERVICES AIRSPACES** — Airspaces of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified.

*NOTE: ATS airspaces are classified as Class "A" to "G."*

**AIR TRAFFIC SERVICES REPORTING OFFICE** — A unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure.

*NOTE: An air traffic services reporting office may be established as a separate unit or combined with an existing unit, such as another air traffic services unit, or a unit of the aeronautical information service.*

**AIR TRAFFIC SERVICES (ATS) ROUTE** — A specified route designated for channeling the flow of traffic as necessary for provision of air traffic services.

*NOTE: The term "ATS Route" is used to mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure route, etc.*

**AIR TRAFFIC SERVICES (ATS) ROUTE (USA)** — A generic term that includes 'VOR Federal airways', 'colored Federal airways', 'jet routes', 'Military Training Routes', 'named routes', and 'RNAV routes.'

**AIR TRAFFIC SERVICES UNIT** — A generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office.

**AIRWAY (ICAO)** — A control area or portion thereof established in the form of a corridor equipped with radio navigation aids.

**AIRWAY (USA)** — A Class "E" airspace area established in the form of a corridor, the centerline of which is defined by radio navigational aids.

**ALERFA** — The code word used to designate an alert phase.

**ALERT AREA (USA)** — [see SPECIAL USE AIRSPACE (SUA)].

**ALERTING SERVICE** — A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

**ALERT PHASE** — A situation wherein apprehension exists as to the safety of an aircraft and its occupants.

**ALLOCATION, ALLOCATE** — Distribution of frequencies, SSR Codes, etc. to a State, unit or service, Distribution of 24-bit aircraft addresses to a State or common mark registering authority.

**ALONG TRACK DISTANCE** — The distance measured from a point-in-space by systems using area navigation reference capabilities that are not subject to slant range errors.

**ALPHANUMERIC CHARACTERS (Alphanumeric)** — A collective term for letters and figures (digits).

**ALTERNATE AERODROME (ICAO)** — An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing. Alternate aerodromes include the following:

**Take-Off Alternate** — An alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.

**En Route Alternate** — An aerodrome at which an aircraft would be able to land after experiencing an abnormal or emergency condition while en route.

**Destination Alternate** — An alternate aerodrome to which an aircraft may proceed should it become impossible or inadvisable to land at the aerodrome of intended landing.

## GLOSSARY

*NOTE: The aerodrome from which a flight departs may also be an en route or a destination alternate aerodrome for that flight.*

**ETOPS En Route Alternate** — A suitable and appropriate alternate aerodrome at which an aeroplane would be able to land after experiencing an engine shutdown or other abnormal or emergency condition while en route in an ETOPS operation.

**ALTERNATE AIRPORT (USA)** — An airport at which an aircraft may land if a landing at the intended airport becomes inadvisable.

**ALTIMETER SETTING** — The barometric pressure reading used to adjust a pressure altimeter for variations in existing atmospheric pressure or to the standard altimeter setting (29.92 inches of mercury, 1013.2 hectopascals or 1013.2 millibars).

**QFE** — The atmospheric pressure setting which, when set in the aircraft's altimeter, will cause the altimeter to read zero when at the reference datum of the airfield.

**QNE** — The constant atmospheric pressure related to a reference datum of 29.92 inches of mercury or 1013.25 hectopascals or 1013.25 millibars, used for expressing flight levels.

**QNH** — The atmospheric pressure setting which, when set in the aircraft's altimeter, will cause the altimeter to read altitudes referenced to mean sea level.

**ALTITUDE (ICAO)** — The vertical distance of a level, a point, or an object considered as a point, measured from Mean Sea Level (MSL).

**ALTITUDE (USA)** — The height of a level, point or object measured in feet Above Ground Level (AGL) or from Mean Sea Level (MSL).

- AGL Altitude — Altitude expressed in feet measured above ground level (QFE).
- MSL Altitude — Altitude expressed in feet measured from mean sea level (QNH).
- Indicated Altitude — The Altitude as shown by an altimeter. On a pressure barometric altimeter it is altitude as shown uncorrected for instrument error and uncompensated for variation from standard atmospheric conditions.

**APPROACH BAN** — An approach procedure, for which continuation is prohibited beyond a specific point, and or specified height, if the reported visibility or RVR is below the minimum specified for that approach.

**APPROACH CONTROL OFFICE** — A unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes.

**APPROACH CONTROL SERVICE** — Air traffic control service for arriving or departing controlled flights.

**APPROACH CONTROL UNIT** — A unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes.

**APPROACH FUNNEL** — A specified airspace around a nominal approach path within which an aircraft approaching to land is considered to be making a normal approach.

**APPROACH PROCEDURE WITH VERTICAL GUIDANCE (APV)** — [see INSTRUMENT APPROACH PROCEDURE (IAP)].

**APPROACH SEQUENCE** — The order in which two or more aircraft are cleared to approach to land at the aerodrome.

**APPROPRIATE ATS AUTHORITY** — The relevant authority designated by the State responsible for providing air traffic services in the airspace concerned.

**APPROPRIATE AUTHORITY** —

- Regarding flight over the high seas:** The relevant authority of the State of Registry.
- Regarding flight other than over the high seas:** The relevant authority of the State having sovereignty over the territory being overflown.

**APRON** — A defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fueling, parking or maintenance.

**AREA CONTROL CENTRE** — A unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction.

**AREA CONTROL SERVICE** — Air traffic control service for controlled flights in control areas.

**AREA MINIMUM ALTITUDE (AMA)** — The minimum altitude to be used under instrument meteorological conditions (IMC), that provides a minimum obstacle clearance within a specified area, normally formed by parallels and meridians.

**AREA NAVIGATION/RNAV** — A method of navigation which permits aircraft operation on any desired flight path within the coverage of the station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

**AREA NAVIGATION ROUTE** — An ATS route established for the use of aircraft capable of employing area navigation.

**ARRIVAL ROUTES** — Routes on an instrument approach procedure by which aircraft may proceed from the enroute phase of flight to the initial approach fix.

**ASSIGNMENT, ASSIGN** — Distribution of frequencies to stations. Distribution of SSR Codes or 24-bit addresses to aircraft.

**ATIS — ASOS INTERFACE** — A switch that allows ASOS weather observations to be appended to the ATIS broadcast, making weather information available on the same (ATIS) frequency H24. When the tower is open, ATIS information and the hourly weather will be broadcast. When the tower is closed, one-minute weather information updates are broadcast, and the controller can add overnight ATIS information to the ASOS automated voice weather message.

**ATS ROUTE** — A specified route designed for channeling the flow of traffic as necessary for the provision of air traffic services.

## GLOSSARY

*NOTE 1: The term "ATS route" is used to mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure route, etc.*

*NOTE 2: An ATS route is defined by route specifications which include an ATS route designator, the track to or from significant points (way-points), distance between significant points, reporting requirements and, as determined by the appropriate ATS authority, the lowest safe altitude.*

**ATS SURVEILLANCE SERVICE** — A term used to indicate a service provided directly by means of an ATS surveillance system.

**ATS SURVEILLANCE SYSTEM** — A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.

*NOTE: A comparable ground-based system is one that has been demonstrated, by comparative assessment or other methodology, to have a level of safety and performance equal to or better than monopulse SSR.*

**AUTOMATIC DEPENDENT SURVEILLANCE (ADS)** — A surveillance technique, in which aircraft automatically provide, via a data link, data derived from on-board navigation and position fixing systems, including aircraft identification, four-dimensional position and additional data as appropriate.

**AUTOMATIC DEPENDENT SURVEILLANCE — BROADCAST (ADS-B)** — A means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link.

**AUTOMATIC DEPENDENT SURVEILLANCE — CONTRACT (ADS-C)** — A means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports.

*NOTE: The abbreviated term "ADS" contract is commonly used to refer to ADS event contract, ADS demand contract or an emergency mode.*

**AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS)** — The automatic provision of current, routine information to arriving and departing aircraft throughout 24 hours or a specified portion thereof:

- Data link-automatic terminal information service (D-ATIS). The provision of ATIS via data link.
- Voice-automatic terminal information service (Voice-ATIS). The provision of ATIS by means of continuous and repetitive voice broadcasts.

**AUTOMATED SURFACE OBSERVATION SYSTEM (ASOS)** — The Automated Surface Observation System, in the United States, is a surface weather observing system implemented by the National Weather Service, the Federal Aviation Administration and the Department of Defense. It is designed to support aviation operations and weather forecast activities. The ASOS provides continuous minute-by-minute observations and performs the basic observing functions necessary to generate an aviation routine weather report (METAR) and other

aviation weather information. ASOS information may be transmitted over a discrete VHF radio frequency or the voice portion of a local navaid.

**AUTOMATED WEATHER OBSERVING SYSTEM (AWOS)** — An automated weather reporting system which transmits local real-time weather data directly to the pilot.

- AWOS-A Only reports altimeter setting.
- AWOS-A/V Reports altimeter setting plus visibility.
- AWOS-1 Usually reports altimeter setting, wind data, temperature, dewpoint and density altitude.
- AWOS-2 Reports same as AWOS-1 plus visibility.
- AWOS-3 Reports the same as AWOS-2 plus cloud/ceiling data.

**AUTOMATED WEATHER SENSOR SYSTEM (AWSS)** — A surface weather observing system similar to AWOS and ASOS, providing all the weather information furnished by ASOS systems. The AWSS sensor suite automatically collects, measures, processes, and broadcasts surface weather data including altimeter setting, temperature and dew point, cloud height and coverage, visibility, present weather (rain, drizzle, snow), rain accumulation, freezing rain, thunderstorms, fog, mist, haze, freezing fog, as well as wind speed, direction, and gusts.

**BALKED LANDING** — A landing manoeuvre that is unexpectedly discontinued below DA(H)/MDA(H) or beyond MAP.

**BASE TURN** — A turn executed by the aircraft during the initial approach between the end of the outbound track and the beginning of the intermediate or final approach track. The tracks are not reciprocal.

*NOTE: Base turns may be designated as being made either in level flight or while descending, according to the circumstances of each individual procedure.*

**BLIND TRANSMISSION** — A transmission from one station to another station in circumstances where two-way communication cannot be established but where it is believed that the called station is able to receive the transmission.

**BRAKING ACTION (GOOD, FAIR, POOR, NIL)** — A report of conditions on the airport movement area providing a pilot with a degree/quality of braking that might be expected. Braking action is reported in terms of good, fair, poor, or nil.

**BRIEFING** — Oral commentary on existing and/or expected conditions.

**BROADCAST** — A transmission of information relating to air navigation that is not addressed to a specific station or stations.

**CARDINAL ALTITUDES OR FLIGHT LEVELS** — "Odd" or "Even" thousand-foot altitudes or flight levels; e.g., 5000, 6000, 7000, FL60, FL250, FL260, FL270.

**CATCH POINT** — A fix/waypoint that serves as a transition point from the high altitude waypoint navigation structure to the low altitude structure or an arrival procedure (STAR).

## GLOSSARY

**CEILING (ICAO)** — The height above the ground or water of the base of the lowest layer of cloud below 6000m (20,000ft) covering more than half the sky.

**CEILING (USA)** — The height above the earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken", "overcast", or "obscuration", and not classified as "thin", or "partial".

**CHANGE-OVER POINT** — The point at which an aircraft navigating on an ATS route segment defined by reference to very high frequency omnidirectional radio ranges is expected to transfer its primary navigational reference from the facility behind the aircraft to the next facility ahead of the aircraft.

*NOTE: Change-over points are established to provide the optimum balance in respect of signal strength and quality between facilities at all levels to be used and to ensure a common source of azimuth guidance for all aircraft operating along the same portion of a route segment.*

**CHART CHANGE NOTICES** — Jeppesen Chart Change Notices include significant information changes affecting Enroute, Area, and Terminal charts. Entries are published until the temporary condition no longer exists, or until the permanent change appears on revised charts. Enroute chart numbers/panel numbers/letters and area chart identifiers are included for each entry in the enroute portion of the Chart Change Notices. To avoid duplication of information in combined Enroute and Terminal Chart Change Notices, navaid conditions, except for ILS components, are listed only in the Enroute portion of the Chart Change Notices. All times are local unless otherwise indicated. Vertical bars indicate new or revised information. Chart Change Notices are only an *abbreviated* service. Always ask for pertinent NOTAMs prior to flight.

**CIRCLING APPROACH / CIRCLE-TO-LAND MANEUVER** — An extension of an instrument approach procedure which provides for visual circling of the aerodrome prior to landing.

**CLEARANCE LIMIT** — The point to which an aircraft is granted an air traffic control clearance.

**CLEARWAY** — An area beyond the take-off runway under the control of airport authorities within which terrain or fixed obstacles may not extend above specified limits. These areas may be required for certain turbine-powered operations and the size and upward slope of the clearway will differ depending on when the aircraft was certified.

**CLOUD OF OPERATIONAL SIGNIFICANCE** — A cloud with the height of cloud base below 5000ft (1500m) or below the highest minimum sector altitude, whichever is greater, or a cumulonimbus cloud or a towering cumulus cloud at any height.

**CODE (SSR CODE)** — The number assigned to a particular multiple pulse reply signal transmitted by a transponder in Mode A or Mode C.

**COMMON TRAFFIC ADVISORY FREQUENCY (CTAF) (USA)** — A frequency designed for the purpose of carrying out airport advisory practices while operating to or from an uncontrolled airport. The CTAF may be a UNICOM, Multicom, FSS, or tower frequency.

**COMMUNITY AERODROME RADIO STATION (CARS)** — An aerodrome radio that provides weather, field conditions, accepts flight plans and position reports.

**COMPULSORY REPORTING POINTS** — Reporting points which must be reported to ATC. They are designated on aeronautical charts by solid triangles or filed in a flight plan as fixes selected to define direct routes. These points are geographical locations which are defined by navigation aids/fixes. Pilots should discontinue position reporting over compulsory reporting points when informed by ATC that their aircraft is in "radar contact."

**COMPUTER** — A device which performs sequences of arithmetical and logical steps upon data without human intervention.

*NOTE: When the word "computer" is used in this document it may denote a computer complex, which includes one or more computers and peripheral equipment.*

**CONDITIONAL ROUTES (CDR) (Europe)** — Category 1,2,3.

Category 1: Permanently plannable CDR during designated times.

Category 2: Plannable only during times designated in the Conditional Route Availability Message (CRAM) published at 1500 for the 24 hour period starting at 0600 the next day.

Category 3: Not plannable. Usable only when directed by ATC.

**CONTROL AREA (ICAO)** — A controlled airspace extending upwards from a specified limit above the earth.

**CONTROLLED AERODROME** — An aerodrome at which air traffic control service is provided to aerodrome traffic.

*NOTE: The term "controlled aerodrome" indicates that air traffic control service is provided to aerodrome traffic but does not necessarily imply that a control zone exists.*

**CONTROLLED AIRSPACE** — An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

*NOTE: Controlled airspace is a generic term which covers ATS airspace Classes "A", "B", "C", "D", and "E".*

**CONTROLLED FIRING AREA (USA)** — [see SPECIAL USE AIRSPACE (SUA)].

**CONTROLLED FLIGHT** — Any flight which is subject to an air traffic control clearance.

**CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC)** — A means of communication between controller and pilot, using data link for ATC communications.

**CONTROL ZONE (CTR) (ICAO)** — A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

## GLOSSARY

**COURSE —**

- The intended direction of flight in the horizontal plane measured in degrees from north.
- The ILS localizer signal pattern usually specified as front course or back course.
- The intended track along a straight, curved, or segmented MLS path.

**CRITICAL HEIGHT —** Lowest height in relation to an aerodrome specified level below which an approach procedure cannot be continued in a safe manner solely by the aid of instruments.

**CRUISE CLIMB —** An aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases.

**CRUISING LEVEL —** A level maintained during a significant portion of a flight.

**CURRENT FLIGHT PLAN (CPL) —** The flight plan, including changes, if any, brought about by subsequent clearances.

**DANGER AREA (ICAO) —** [see SPECIAL USE AIRSPACE (SUA)].

**DATA CONVENTION —** An agreed set of rules governing the manner or sequence in which a set of data may be combined into a meaningful communication.

**DATA LINK COMMUNICATIONS —** A form of communication intended for the exchange of messages via a data link.

**DATA LINK INITIATION CAPABILITY (DLIC) —** A data link application that provides the ability to exchange addresses, names and version numbers necessary to initiate data link applications.

**DEAD RECKONING (DR) NAVIGATION —** The estimating or determining of position by advancing an earlier known position by the application of direction, time and speed data.

**DECISION ALTITUDE (DA) or DECISION HEIGHT (DH) (ICAO) —** A specified altitude or height in the precision approach or approach with vertical guidance at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

**NOTE:**

- Decision altitude (DA) is referenced to mean sea level (MSL) and decision height (DH) is referenced to the threshold elevation.*
- The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In Category III operations with a decision height the required visual reference is that specified for the particular procedure and operation.*
- For convenience where both expressions are used they may be written in the form "decision altitude/height" and abbreviated "DA/H."*

**DECISION ALTITUDE/HEIGHT (DA/H) (FAA) —** Is a specified altitude/height in an instrument approach procedure at which the pilot must decide whether to initiate an immediate missed approach if the pilot

does not see the required visual reference, or to continue the approach. Decision altitude/height is expressed in feet above mean sea level/ground level.

*NOTE: Jeppesen approach charts use the abbreviation DA(H). The decision altitude "DA" is referenced to mean sea level (MSL) and the parenthetical decision height (DH) is referenced to the TDZE or threshold elevation. A DA(H) of 1440ft (200ft is a Decision Altitude of 1440ft and a Decision Height of 200ft.*

**DEPARTURE CLEARANCE VIA DATA LINK (DCL) —** Provides assistance for requesting and delivering information and clearance, with the objective of reducing aircrew and controller workload. The DCL service shall be initiated by the aircrew at a suitable time between T<sub>i</sub> and T<sub>t</sub> where:


- T<sub>i</sub> – the earliest time at which a DCL service can be initiated;
- T<sub>t</sub> – the latest time after which an aircrew, having not completed the DCL service, is still able to receive by voice procedures and in due time, the vocal departure clearance.

The third time parameter of the DCL acknowledgment procedure is T<sub>1</sub> where:

- T<sub>1</sub> – timer implemented in the ATS ground system between the sending by ATS ground system of the DCL clearance message and the reception by it of the read-back of DCL clearance message.

**DEPENDENT PARALLEL APPROACHES —** Simultaneous approaches to parallel or near-parallel instrument runways where radar separation minima between aircraft on adjacent extended runway centre lines are prescribed.

**DETRESFA —** The code word used to designate a distress phase.

**DIRECT ROUTE - ** — A requested route published on a Jeppesen Enroute or Area chart to assist pilots who have previous knowledge of acceptance of these routes by ATC. Use of a Direct route may require prior ATC approval and may not provide ATC or Advisory services, or be acceptable in flight plans.

**DISCRETE CODE —** A four-digit SSR Code with the last two digits not being "00."

**DISPLACED THRESHOLD —** A threshold that is located at a point on the runway other than the designated beginning of the runway.

**DISTRESS —** A condition of being threatened by serious and/or imminent danger and of requiring immediate assistance.

**DISTRESS PHASE —** A situation wherein there is a reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance.

**DME DISTANCE —** The line of sight distance (slant range) from the source of a DME signal to the receiving antenna.



## GLOSSARY

**EFFECTIVE DATE/TIME —**

**FAA and Canada:** Aeronautical information in the U.S. and its territories is generally effective on the designated effective date at 09:01 Coordinated Universal Time (UTC). The effective time applies to airspace, airways and flight procedures. It allows for implementation between 01:00 and 06:00 local standard time in the U.S. Local authorities may change the date or time of implementation due to local operational considerations. Check NOTAMs and contact local ATC for information.

**International:** The International Civil Aviation Organization (ICAO) guidance specifies that aeronautical information should be effective on the designated effective date at 00:00 Coordinated Universal Time (UTC). However national and local authorities often change the effective time to allow for implementation during the local night or at other times due to local operational considerations. When an effective time other than 00:00 UTC is used, ICAO requires that it be published in the official Aeronautical Information Publication (AIP) of the country. Check NOTAMs and contact local ATC for information.

**ELEVATION —** The vertical distance of a point or a level, on or affixed to the surface of the earth, measured from mean sea level.

**EMERGENCY PHASE —** A generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.

**ENGINEERED MATERIALS ARRESTING SYSTEM (EMAS) —** High-energy-absorbing material located in the runway overrun that is designed to crush under the weight of an aircraft as the material exerts deceleration forces on the aircraft landing gear.

**ENROUTE FLIGHT ADVISORY SERVICE (FLIGHT WATCH) —** A service specifically designed to provide, upon pilot request, timely weather information pertinent to the type of flight, intended route of flight, and altitude. The FSSs providing this service are indicated on Jeppesen Enroute and Area charts.

**ESTIMATED ELAPSED TIME —** The estimated time required to proceed from one significant point to another.

**ESTIMATED OFF-BLOCK TIME —** The estimated time at which the aircraft will commence movement associated with departure.

**ESTIMATED TIME OF ARRIVAL —** For IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome.

**EXPECTED APPROACH TIME —** The time at which ATC expects that an arriving aircraft, following a delay, will leave the holding point to complete its approach for a landing.

*NOTE: The actual time of leaving the holding point will depend upon the approach clearance.*

**EXTENDED OPERATION (ETOPS) —** Any flight by an aeroplane with two turbine power-units where the flight time at the one power-unit inoperative cruise speed (in ISA and still air conditions), from a point on the route to an adequate alternate aerodrome, is greater than the threshold time approved by the State of the Operator.

**FAA AIR CARRIER OPERATIONS SPECIFICATIONS —** Document issued to users operating under Federal Aviation Administration Regulations (FAR) Parts 121, 125, 127, 129, and 135. Operations Specifications are established and formalized by FARs. The primary purpose of FAA Air Carrier Operations Specifications is to provide a legally enforceable means of prescribing an authorization, limitation and/or procedures for a specific operator. Operations Specifications are subject to expeditious changes. These changes are usually too time critical to adopt through the regulatory process.

**FEEDER FIX —** The fix depicted on instrument approach procedure charts which establishes the starting point of the feeder route.

**FEEDER ROUTE —** Routes depicted on instrument approach procedure charts to designate routes for aircraft to proceed from the enroute structure to the initial approach fix (IAF).

**FILED FLIGHT PLAN (FPL) —** The flight plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes.

**FINAL APPROACH COURSE —** A bearing/radial/track of an instrument approach leading to a runway or an extended runway centerline all without regard to distance.

**FINAL APPROACH (ICAO) —** That part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified,

- at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or
- at the point of interception of the last track specified in the approach procedure; and ends at a point in the vicinity of an aerodrome from which:
  - a landing can be made; or
  - a missed approach procedure is initiated.

**FINAL APPROACH AND TAKE-OFF AREA (FATO) —** A defined area over which the final phase of the approach manoeuvre to hover or landing is completed and from which the take-off manoeuvre is commenced. Where the FATO is to be used by performance Class 1 helicopters, the defined area includes the rejected take-off area available.

**FINAL APPROACH FIX (FAF) —** The fix from which the final approach (IFR) to an airport is executed and which identifies the beginning of the final approach segment. It is designated in the profile view of Jeppesen Terminal charts by the Maltese Cross symbol for non-precision approaches and by the glide slope/path intercept point on precision approaches. The glide slope/path symbol starts at

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the FAF. When ATC directs a lower-than-published Glide Slope/Path Intercept Altitude, it is the resultant actual point of the glide slope/path intercept.

**FINAL APPROACH FIX (FAF) (AUSTRALIA)** — A specified point on a non-precision approach which identifies the commencement of the final segment. The FAF is designated in the profile view of Jeppesen Terminal charts by the Maltese Cross symbol.

**FINAL APPROACH FIX (FAF) OR POINT (FAP) (ICAO)** — That fix or point of an instrument approach procedure where the final approach segment commences.

**FINAL APPROACH — IFR (USA)** — The flight path of an aircraft which is inbound to an airport on a final instrument approach course, beginning at the final approach fix or point and extending to the airport or the point where a circling approach/circle-to-land maneuver or a missed approach is executed.

**FINAL APPROACH POINT (FAP) (USA)** — The point, applicable only to a non-precision approach with no depicted FAF (such as an on-airport VOR), where the aircraft is established inbound on the final approach course from the procedure turn and where the final approach descent may be commenced. The FAP serves as the FAF and identifies the beginning of the final approach segment.

**FINAL APPROACH POINT (FAP) (AUSTRALIA)** — A specified point on the glide path of a precision instrument approach which identifies the commencement of the final segment.

*NOTE: The FAP is co-incident with the FAF of a localizer-based non-precision approach.*

**FINAL APPROACH SEGMENT (FAS)** — That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.

**FLIGHT CREW MEMBER** — A licensed crew member charged with duties essential to the operation of an aircraft during flight time.

**FLIGHT DOCUMENTATION** — Written or printed documents, including charts or forms, containing meteorological information for a flight.

**FLIGHT INFORMATION CENTRE** — A unit established to provide flight information service and alerting service.

**FLIGHT INFORMATION REGION (FIR, UIR)** — An airspace of defined dimensions within which Flight Information Service and Alerting Service are provided.

**FLIGHT INFORMATION SERVICE (FIS)** — A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

**FLIGHT LEVEL (FL)** — A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.

*NOTE 1: A pressure type altimeter calibrated in accordance with the Standard Atmosphere:*

- a. when set to a QNH altimeter setting, will indicate altitude;
- b. when set to a QFE altimeter setting, will indicate height above the QFE reference datum;

c. when set to a pressure of 1013.2 hectopascals (hPa), may be used to indicate flight levels.

*NOTE 2: The terms "height" and "altitude," used in NOTE 1 above, indicate altimetric rather than geometric heights and altitudes.*

**FLIGHT PATH MONITORING** — The use of ATS surveillance systems for the purpose of providing aircraft with information and advice relative to significant deviations from nominal flight path, including deviations from the terms of their air traffic control clearances.

*NOTE: Some applications may require a specific technology, e.g. radar, to support the function of flight path monitoring.*

**FLIGHT PLAN** — Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

*NOTE: Specifications for flight plans are contained in ICAO Rules of the Air, Annex 2. A Model Flight Form is contained in ICAO Rules of the Air and Air Traffic Services, PANS-RAC (Doc 4444), Appendix 2 and ATC section.*

**FLIGHT VISIBILITY** — The visibility forward from the cockpit of an aircraft in flight.

**FLIGHT WATCH (USA)** — A shortened term for use in air-ground contacts to identify the flight service station providing Enroute Flight Advisory Service; e.g., "Oakland Flight Watch."

**FLOW CONTROL** — Measures designed to adjust the flow of traffic into a given airspace, along a given route, or bound for a given aerodrome, so as to ensure the most effective utilization of the airspace.

**FORECAST** — A statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace.

**GAMET AREA FORECAST** — An area forecast in abbreviated plain language for low-level flights for a flight information region or sub-area thereof, prepared by the meteorological office designated by the meteorological authority concerned and exchanged with meteorological offices in adjacent flight information regions, as agreed between the meteorological authorities concerned.

**GBAS-LANDING SYSTEM (GLS)** — A system for Approach and Landing operations utilizing GNSS, augmented by a Ground-Based Augmentation System (GBAS), as the primary navigational reference.

**GLIDE PATH (GP) (ICAO)** — A descent profile determined for vertical guidance during a final approach.

**GLIDE SLOPE (GS) (USA)** — Provides vertical guidance for aircraft during approach and landing. The glide slope/glidepath is based on the following:

- a. Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS/MLS; or
- b. Visual ground aids, such as VASI, which provide vertical guidance for a VFR approach or for the visual portion of an instrument approach and landing.

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- c. PAR, used by ATC to inform an aircraft making a PAR approach of its vertical position (elevation) relative to the descent profile.

**GLIDE SLOPE/GLIDE PATH INTERCEPT ALTITUDE** — The minimum altitude to intercept the glide slope/path on a precision approach. The intersection of the published intercept altitude with the glide slope/path, designated on Jeppesen Terminal charts by the start of the glide slope/path symbol, is the precision FAF; however, when ATC directs a lower altitude, the resultant lower intercept position is then the FAF.

**GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS)** — An “umbrella” term adopted by the International Civil Aviation Organization (ICAO) to encompass any independent satellite navigation system used by a pilot to perform onboard position determinations from the satellite data.

**GLOBAL POSITIONING SYSTEM (GPS)** — A space-based radio positioning, navigation, and time-transfer system. The system provides highly accurate position and velocity information, and precise time, on a continuous global basis, to an unlimited number of properly equipped users. The system is unaffected by weather, and provides a worldwide common grid reference system. The GPS concept is predicated upon accurate and continuous knowledge of the spatial position of each satellite in the system with respect to time and distance from a transmitting satellite to the user. The GPS receiver automatically selects appropriate signals from the satellites in view and translates these into a three-dimensional position, velocity, and time. System accuracy for civil users is normally 100 meters horizontally.

**GRID MINIMUM OFF-ROUTE ALTITUDE (Grid MORA)** — An altitude derived by Jeppesen or provided by State Authorities. The Grid MORA altitude provides terrain and man-made structure clearance within the section outlined by latitude and longitude lines. MORA does not provide for navaid signal coverage or communication coverage.

- a. Grid MORA values derived by Jeppesen clear all terrain and man-made structures by 1000ft in areas where the highest elevations are 5000ft MSL or lower. MORA values clear all terrain and man-made structures by 2000ft in areas where the highest elevations are 5001ft MSL or higher. When a Grid MORA is shown as “Unsurveyed” it is due to incomplete or insufficient information. Grid MORA values followed by a +/- denote doubtful accuracy, but are believed to provide sufficient reference point clearance.
- b. Grid MORA (State) altitude supplied by the State Authority provides 2000ft clearance in mountainous areas and 1000ft in non-mountainous areas.

**GRID POINT DATA IN DIGITAL FORM** — Computer processed meteorological data for a set of regularly spaced points on a chart, for transmission from a meteorological computer to another computer in a code form suitable for automated use.

*NOTE: In most cases such data are transmitted on medium or high speed telecommunications channels.*

**GRIP-FLEX MICRO-SURFACING** — A thermoplastic compound that uses highly refined, environmentally safe coal tar derivative for anti-oxidation and fuel-resistance qualities to create a stable wearing surface for pavements.

**GROUND COMMUNICATIONS OUTLET (GCO) (USA)** — An unstaffed, remotely controlled ground / ground communications facility. Pilots at uncontrolled airports may contact ATC and FSS via VHF to a telephone connection to obtain an instrument clearance or close a VFR or IFR flight plan. They may also get an updated weather briefing prior to take-off. Pilots will use four “key clicks” on the VHF radio to contact the appropriate ATC facility, or six “key clicks” to contact FSS. The GCO system is intended to be used only on the ground.

**GROUND EFFECT** — A condition of improved performance (lift) due to the interference of the surface with the airflow pattern of the rotor system when a helicopter or other VTOL aircraft is operating near the ground.

*NOTE: Rotor efficiency is increased by ground effect to a height of about one rotor diameter for most helicopters.*

**GROUND VISIBILITY** — The visibility at an aerodrome, as reported by an accredited observer.

**HEADING** — The direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid).

**HEIGHT** — The vertical distance of a level, a point or an object considered as a point, measured from a specified datum.

**HEIGHT ABOVE AIRPORT (HAA)** — The height of the Minimum Descent Altitude (MDA) above the published airport elevation. This is published in conjunction with circling minimums.

**HEIGHT ABOVE TOUCHDOWN (HAT)** — The height of the Decision Height or Minimum Descent Altitude above the highest runway elevation in the touchdown zone of the runway. HAT is published on instrument approach charts in conjunction with all straight-in minimums.

**HIGH FREQUENCY COMMUNICATIONS** — High radio frequencies (HF) between 3 and 30MHz used for air-to-ground voice communication in overseas operations.

**HIGH SPEED TAXIWAY / TURNOFF (HST)** — A long radius taxiway designed and provided with lighting or marking to define the path of an aircraft, traveling at high speed (up to 60KT), from the runway center to a point on the center of a taxiway. Also referred to as long radius exit or turnoff taxiway. The high speed taxiway is designed to expedite aircraft turning off the runway after landing, thus reducing runway occupancy time.

**HOLDING FIX, HOLDING POINT** — A specified location, identified by visual or other means, in the vicinity of which the position of an aircraft in flight is maintained in accordance with air traffic control clearances.

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**HOLD / HOLDING PROCEDURE** — A predetermined maneuver which keeps aircraft within a specified airspace while awaiting further clearance from air traffic control. Also used during ground operations to keep aircraft within a specified area or at a specified point while awaiting further clearance from air traffic control.

**HOT SPOT** — A location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary.

**HUMAN FACTORS PRINCIPLES** — Principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.

**HUMAN PERFORMANCE** — Human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.

**IFR FLIGHT** — A flight conducted in accordance with the instrument flight rules.

### ILS CATEGORIES (ICAO) —

- a. ILS Category I — An ILS approach procedure which provides for an approach to a decision height not lower than 60m (200ft) and a visibility not less than 800m (2400ft) or a runway visual range not less than 550m (1800ft).
- b. ILS Category II (Special authorization required) — An ILS approach procedure which provides for an approach to a decision height lower than 60m (200ft) but not lower than 30m (100ft) and a runway visual range not less than 300m (1000ft) for aircraft categories A, B, C (D with auto landing), and not less than 350m (1200ft) for aircraft category D without auto landing.
- c. ILS Category III (Special authorization required) —
  1. IIIA — An ILS approach procedure which provides for approach with either a decision height lower than 30m (100ft) or with no decision height and with a runway visual range of not less than 175m (574ft).
  2. IIIB — An ILS approach procedure which provides for approach with either a decision height lower than 15m (50ft) or with no decision height and with a runway visual range of less than 175m (574ft) but not less than 50m (150ft).
  3. IIIC — An ILS approach procedure which provides for approach with no decision height and no runway visual range limitations.
- d. Some areas require special authorization for ILS Category I approaches. In these areas, an additional category of approach called ILS is available without special authorization. These ILS approaches have minimums higher than a decision height of 200ft and a runway visual range value of 2600ft. Jeppesen approach charts, at these locations, will have a notation in the chart heading or in the minimum box titles.

### ILS CATEGORIES (USA) —

- a. ILS Category I — An ILS approach procedure which provides for approach to a height above touchdown of not less than 200ft and with runway visual range of not less than 1800ft.
- b. ILS Category II — An ILS approach procedure which provides for approach to a height above touchdown of not less than 100ft and with runway visual range of not less than 1200ft.
- c. ILS Category III —
  1. IIIA — An ILS approach procedure which provides for approach without a decision height minimum and with runway visual range of not less than 700ft.
  2. IIIB — An ILS approach procedure which provides for approach without a decision height minimum and with runway visual range of not less than 150ft.
  3. IIIC — An ILS approach procedure which provides for approach without a decision height minimum and without runway visual range minimum.

**INCERFA** — The code word used to designate an uncertainty phase.

**INDEPENDENT PARALLEL APPROACHES** — Simultaneous approaches to parallel or near-parallel instrument runways where radar separation minima between aircraft on adjacent extended runway centre lines are not prescribed.

**INDEPENDENT PARALLEL DEPARTURES** — Simultaneous departures from parallel or near-parallel instrument runways.

**INITIAL APPROACH FIX (IAF)** — A fix that marks the beginning of the initial segment and the end of the arrival segment, if applicable. In RNAV applications this fix is normally defined by a fly-by waypoint.

**INITIAL APPROACH SEGMENT** — That segment of an instrument approach procedure between the initial approach fix and the intermediate approach fix or, where applicable, the final approach fix or point.

**INSTRUMENT APPROACH PROCEDURE (IAP)** — A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:

- Non-precision approach (NPA) procedure. An instrument approach procedure which utilizes lateral guidance but does not utilize vertical guidance.
- Approach procedure with vertical guidance (APV). An instrument approach based on a navigation system that is not required to meet the precision approach standards of ICAO Annex 10 but provides course and glide path deviation information (sometimes referred to as "semi-precision"). Baro-VNAV, LDA with glide path, LNAV/VNAV and LPV are examples of APV approaches.

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– Precision approach (PA) procedure. An instrument approach procedure using precision lateral and vertical guidance with minima as determined by the category of operation.

*NOTE: Lateral and vertical guidance refers to the guidance provided either by:*

- a. a ground-based navigation aid; or
- b. computer-generated navigation data.

**INSTRUMENT DEPARTURE PROCEDURE (DP) (USA)** — A preplanned instrument flight rule (IFR) air traffic control departure procedure printed for pilot use in graphic and/or textual form. DPs provide transition from the terminal to the appropriate enroute structure.

**INSTRUMENT METEOROLOGICAL CONDITIONS (IMC)** — Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions.

*NOTE 1: The specified minima for visual meteorological conditions are contained in ICAO Rules of the Air, Annex 2, Chapter 4.*

*NOTE 2: In a control zone, a VFR flight may proceed under instrument meteorological conditions if and as authorized by air traffic control.*

**INTERMEDIATE APPROACH SEGMENT** — That segment of an instrument approach procedure between either the intermediate approach fix and the final approach fix or point, or between the end of a reversal, racetrack or dead reckoning track procedure and the final approach fix or point, as appropriate.

**INTERMEDIATE FIX (IF)** — A fix that marks the end of an initial segment and the beginning of the intermediate segment. In RNAV applications this fix is normally defined by a fly-by waypoint.

**INTERNATIONAL AIRPORT (ICAO)** — Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

**INTERNATIONAL AIRPORT (USA)** — Relating to international flight, it means:

- a. An airport of entry which has been designated by the Secretary of Treasury or Commissioner of Customs as an international airport for customs service.
- b. A landing rights airport at which specific permission to land must be obtained from customs authorities in advance of contemplated use.
- c. Airports designated under the Convention on International Civil Aviation as an airport for use by international air transport and/or international general aviation.

**INTERNATIONAL AIRWAYS VOLCANO WATCH (IAVW)** — International arrangements for monitoring and providing warnings to aircraft of volcanic ash in the atmosphere.

*NOTE: The IAVW is based on the co-operation of aviation and non-aviation operational units using information derived from observing sources and networks*

*that are provided by States. The watch is coordinated by ICAO with the co-operation of other concerned international organizations.*

**INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO)** — A specialized agency of the United Nations whose objective is to develop the principles and techniques of international air navigation and to foster planning and development of international civil air transport.

**LAND AND HOLD SHORT OPERATIONS (LAHSO)** — Operations which include simultaneous take-offs and landings and/or simultaneous landings when a landing aircraft is able and is instructed by the controller to hold short of the intersecting runway / taxiway or designated hold short point. Pilots are expected to promptly inform the controller if the hold short clearance cannot be accepted.

**LANDING AREA** — That part of a movement area intended for the landing or take-off of aircraft.

**LANDING DISTANCE AVAILABLE (LDA) (ICAO)** — The length of runway which is declared available and suitable for the ground run of an airplane landing.

**LATERAL NAVIGATION (LNAV)** — Provides the same level of service as the present GPS stand-alone approaches. LNAV minimums support the following navigation systems: WAAS, when the navigation solution will not support vertical navigation; and, GPS navigation systems which are presently authorized to conduct GPS/GNSS approaches.

**LATERAL NAVIGATION / VERTICAL NAVIGATION (LNAV/VNAV)** — Identifies APV minimums developed to accommodate an RNAV IAP with vertical guidance, usually provided by approach certified Baro-VNAV, but with lateral and vertical integrity limits larger than a precision approach or LPV. LNAV stands for Lateral Navigation; VNAV stands for Vertical Navigation. These minimums can be flown by aircraft with a statement in the Aircraft Flight Manual (AFM) that the installed equipment supports GPS approaches and has an approach-approved barometric VNAV, or if the aircraft has been demonstrated to support LNAV/VNAV approaches. This includes Class 2, 3 and 4 TSO-C146 WAAS equipment. Aircraft using LNAV/VNAV minimums will descend to landing via an internally generated descent path based on satellite or other approach approved VNAV systems. WAAS equipment may revert to this mode of operation when the signal does not support “precision” or LPV integrity.

**LEVEL** — A generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level.

**LOCAL AIRPORT ADVISORY (LAA)** — A service provided by flight service stations or the military at airports not serviced by an operating control tower. This service consists of providing information to arriving and departing aircraft concerning wind direction and speed, favored runway, altimeter setting, pertinent known traffic, pertinent known field conditions, airport taxi routes and traffic patterns, and authorized instrument approach procedures. This information is advisory in nature and does not constitute an ATC clearance.

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**LOCALIZER PERFORMANCE WITH VERTICAL GUIDANCE (LPV)** — Identifies the APV minimums that incorporate electronic lateral and vertical guidance. The lateral guidance is equivalent to localizer, and the protected area is considerably smaller than the protected area for the present LNAV and LNAV/VNAV lateral protection. Aircraft can fly these minimums with a statement in the Aircraft Flight Manual (AFM) that the installed equipment supports LPV approaches. This includes Class 3 and 4 TSO-C146 WAAS equipment, and future LAAS equipment. The label LPV denotes minima lines associated with APV-I or APV-II performance on approach charts.

**LOCATION INDICATOR** — A four-letter code group formulated in accordance with rules prescribed by ICAO and assigned to the location of an aeronautical fixed station.

**LOW ALTITUDE AIRWAY STRUCTURE / FEDERAL AIRWAYS (USA)** — The network of airways serving aircraft operations up to but not including 18,000ft MSL.

**LOW FREQUENCY (LF)** — The frequency band between 30 and 300kHz.

**MAGNETIC VARIATION (VAR)** — The orientation of a horizontal magnetic compass with respect to true north. Because there is a continuous small change of direction of lines of magnetic force over the surface of the earth, magnetic variation at most locations is not constant over long periods of time.

**MANDATORY ALTITUDE** — An altitude depicted on an instrument approach procedure chart requiring the aircraft to maintain altitude at the depicted value.

**MANDATORY FREQUENCY (MF)** — A frequency designated at selected airports that are uncontrolled during certain hours only. Aircraft operating within the designated MF Area, normally 5NM radius of the airport, must be equipped with a functioning radio capable of maintaining two-way communications. Jeppesen charts list the MF frequency and the area when other than the standard 5NM.

**MANOEUVRING AREA** — That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

**MAXIMUM AUTHORIZED ALTITUDE (MAA)** — A published altitude representing the maximum usable altitude or flight level for an airspace structure or route segment.

**MEDIUM FREQUENCY (MF)** — The frequencies between 300kHz and 3MHz.

**METEOROLOGICAL AUTHORITY** — The authority providing or arranging for the provision of meteorological service for international air navigation on behalf of a Contracting State.

**METEOROLOGICAL BULLETIN** — A text comprising meteorological information preceded by an appropriate heading.

**METEOROLOGICAL INFORMATION** — Meteorological report, analysis, forecast, and any other statement relating to existing or expected meteorological conditions.

**METEOROLOGICAL OFFICE** — An office designated to provide meteorological service for international air navigation.

**METEOROLOGICAL REPORT** — A statement of observed meteorological conditions related to a specified time and location.

**METEOROLOGICAL SATELLITE** — An artificial earth satellite making meteorological observations and transmitting these observations to earth.

**MILITARY OPERATIONS AREA (MOA) (USA)** — [see SPECIAL USE AIRSPACE (SUA)].

**MINIMUM CROSSING ALTITUDE (MCA)** — The lowest altitude at certain fixes at which an aircraft must cross when proceeding in the direction of a higher minimum enroute IFR altitude (MEA).

**MINIMUM DESCENT ALTITUDE (MDA) (FAA)** — Is the lowest altitude specified in an instrument approach procedure, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering until the pilot sees the required visual references for the heliport or runway of intended landing.

**MINIMUM DESCENT ALTITUDE (MDA) OR MINIMUM DESCENT HEIGHT (MDH) (ICAO)** — A specified altitude or height in a non-precision approach or circling approach below which descent must not be made without the required visual reference.

*NOTE 1: Minimum descent altitude (MDA) is referenced to mean sea level and minimum descent height (MDH) is referenced to the aerodrome elevation or to the threshold elevation if that is more than 2m (7ft) below the aerodrome elevation. A minimum descent height for a circling approach is referenced to the aerodrome elevation.*

*NOTE 2: The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach the required visual reference is the runway environment.*

*NOTE 3: For convenience when both expressions are used they may be written in the form "minimum descent altitude/height" abbreviated "MDA/H."*

**MINIMUM ENROUTE IFR ALTITUDE (MEA)** — The lowest published altitude between radio fixes that meets obstacle clearance requirements between those fixes and in many countries assures acceptable navigational signal coverage. The MEA applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route.

**MINIMUM FUEL** — The term used to describe a situation in which an aircraft's fuel supply has reached a state where little or no delay can be accepted.

*NOTE: This is not an emergency situation but merely indicates that an emergency situation is possible, should any undue delay occur.*

**MINIMUM IFR ALTITUDES (USA)** — Minimum altitudes for IFR operations are published on aeronautical charts for airways, routes, and for standard instru-

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ment approach procedures. Within the USA, if no applicable minimum altitude is prescribed the following minimum IFR altitudes apply.

- In designated mountainous areas, 2000ft above the highest obstacle within a horizontal distance of 4NM from the course to be flown; or
- Other than mountainous areas, 1000ft above the highest obstacle within a horizontal distance of 4NM from the course to be flown; or
- As otherwise authorized by the Administrator or assigned by ATC.

**MINIMUM OBSTRUCTION CLEARANCE ALTITUDE (MOCA)** — The lowest published altitude in effect between radio fixes on VOR airways, off airway routes, or route segments which meets obstacle clearance requirements for the entire route segment and in the USA assures acceptable navigational signal coverage only within 22NM of a VOR.

**MINIMUM OFF-ROUTE ALTITUDE (MORA)** — This is an altitude derived by Jeppesen. The MORA provides known obstruction clearance 10NM either side of the route centerline including a 10NM radius beyond the radio fix reporting or mileage break defining the route segment. For terrain and man-made structure clearance refer to Grid MORA.

**MINIMUM RECEPTION ALTITUDE (MRA)** — The lowest altitude at which an intersection can be determined.

**MINIMUM SAFE/SECTOR ALTITUDE (MSA) (FAA)** — Altitude depicted on an instrument chart and identified as the minimum safe altitude which provides 1000ft of obstacle clearance within a 25NM radius from the navigational facility upon which the MSA is predicated. If the radius limit is other than 25NM, it is stated. This altitude is for EMERGENCY USE ONLY and does not necessarily guarantee navaid reception. When the MSA is divided into sectors, with each sector a different altitude, the altitudes in these sectors are referred to as "minimum sector altitudes".

**MINIMUM SECTOR ALTITUDE (MSA) (ICAO)** — The lowest altitude which may be used which will provide a minimum clearance of 300m (1000ft) above all objects located in an area contained within a sector of a circle of 46km (25NM) radius centered on a radio aid to navigation.

**MINIMUM STABILIZATION DISTANCE (MSD)** — The minimum distance to complete a turn manoeuvre and after which a new manoeuvre can be initiated. The minimum stabilization distance is used to compute the minimum distance between waypoints.

**MINIMUM VECTORING ALTITUDE (MVA)** — The lowest MSL altitude at which an IFR aircraft will be vectored by a radar controller, except as otherwise authorized for radar approaches, departures and missed approaches. The altitude meets IFR obstacle clearance criteria. It may be lower than the published MEA along an airway of J-route segment. It may be utilized for radar vectoring only upon the controller's determination that an adequate radar return is being received from the aircraft being controlled.

**MISSED APPROACH —**

- A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. The route of flight and altitude are shown on instrument approach procedure charts. A pilot executing a missed approach prior to the Missed Approach Point (MAP) must continue along the final approach to the MAP. The pilot may climb immediately to the altitude specified in the missed approach procedure.
- A term used by the pilot to inform ATC that he/she is executing the missed approach.
- At locations where ATC radar service is provided the pilot should conform to radar vectors, when provided by ATC, in lieu of the published missed approach procedure.

**MISSED APPROACH HOLDING FIX (MAHF)** — A fix used in RNAV applications that marks the end of the missed approach segment and the centre point for the missed approach holding.

**MISSED APPROACH POINT (MAP) (ICAO)** — That point in an instrument approach procedure at or before which the prescribed missed approach procedure must be initiated in order to ensure that the minimum obstacle clearance is not infringed.

**MISSED APPROACH POINT (MAP) (USA)** — A point prescribed in each instrument approach procedure at which a missed approach procedure shall be executed if the required visual reference does not exist.

**MISSED APPROACH PROCEDURE** — The procedure to be followed if the approach cannot be continued.

**MODE (SSR)** — The conventional identifier related to specific functions of the interrogation signals transmitted by an SSR interrogator. There are four modes specified in ICAO Annex 10 (not published herein): A, C, S and intermode.

**MOUNTAINOUS AREA (ICAO)** — An area of changing terrain profile where the changes of terrain elevation exceed 900m (3000ft) within a distance of 10NM.

**MOVEMENT AREA** — That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).

**NEAR-PARALLEL RUNWAYS** — Non-intersecting runways whose extended centre lines have an angle of convergence/divergence of 15 degrees or less.

**NON PRECISION APPROACH (NPA) PROCEDURE** — [see INSTRUMENT APPROACH PROCEDURE (IAP)]

**NO PROCEDURE TURN (NoPT)** — No procedure turn is required nor authorized.

**NORMAL OPERATING ZONE (NOZ)** — Airspace of defined dimensions extending to either side of an ILS localizer course and/or MLS final approach track. Only the inner half of the normal operating zone is taken into account in independent parallel approaches.

**NOTAM (ICAO)** — A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any

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aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

**NO-TRANSGRESSION ZONE (NTZ)** — In the context of independent parallel approaches, a corridor of airspace of defined dimensions located centrally between the two extended runway centre lines, where a penetration by an aircraft requires a controller intervention to manoeuvre any threatened aircraft on the adjacent approach.

**OBSERVATION (METEOROLOGICAL)** — The evaluation of one or more meteorological elements.

**OBSTACLE ASSESSMENT SURFACE (OAS)** — A defined surface intended for the purpose of determining those obstacles to be considered in the calculation of obstacle clearance altitude/height for a specific APV or precision approach procedure.

**OBSTACLE CLEARANCE ALTITUDE (OCA) OR OBSTACLE CLEARANCE HEIGHT (OCH)** — The lowest altitude or the lowest height above the elevation of the relevant runway threshold or the aerodrome elevation as applicable, used in establishing compliance with appropriate obstacle clearance criteria.

*NOTE 1: Obstacle clearance altitude is referenced to mean sea level and obstacle clearance height is referenced to the threshold elevation or in the case of non-precision approaches to the aerodrome elevation or the threshold elevation if that is more than 7ft (2m) below the aerodrome elevation. An obstacle clearance height for a circling approach is referenced to the aerodrome elevation.*

*NOTE 2: For convenience when both expressions are used they may be written in the form "obstacle clearance altitude/height" and abbreviated "OCA/H."*

**OBSTACLE FREE ZONE (OFZ) (ICAO)** — The airspace above the inner approach surface, inner transitional surfaces, and balked landing surface and that portion of the strip bounded by these surfaces, which is not penetrated by any fixed obstacle other than a low-mass and frangibly mounted one required for air navigation purposes.

**OBSTRUCTION CLEARANCE LIMIT (OCL)** — The height above aerodrome elevation below which the minimum prescribed vertical clearance cannot be maintained either on approach or in the event of a missed approach.

**OPERATIONAL CONTROL** — The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of the flight.

**OPERATOR** — A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

**PILOT CONTROLLED LIGHTING (PCL) (USA)** — (For other states see Air Traffic Control Rules and Procedures.)

Radio control of lighting is available at selected airports to provide airborne control of lights by keying the aircraft's microphone. The control system consists of a 3-step control responsive to 7, 5, and/or 3 microphone clicks. The 3-step and 2-step lighting

facilities can be altered in intensity. All lighting is illuminated for a period of 15min (except for 1-step and 2-step REILs which may be turned off by keying the mike 5 or 3 times, respectively).

Suggested use is to always initially key the mike 7 times; this assures that all controlled lights are turned on to the maximum available intensity. If desired, adjustment can then be made, where the capability is provided, to a lower intensity (or the REIL turned off) by keying the mike 5 and/or three times. Approved lighting systems may be activated by keying the mike as indicated below:

KEY MIKE	FUNCTION
7 times within 5 seconds	Highest intensity available
5 times within 5 seconds	Medium or lower intensity (Lower REIL or REIL Off)
3 times within 5 seconds	Lowest intensity available (Lower REIL or REIL Off)

Due to the close proximity of airports using the same frequency, radio controlled lighting receivers may be set at a low sensitivity requiring the aircraft to be relatively close to activate the system. Consequently, even when lights are on, always key mike as directed when overflying an airport of intended landing or just prior to entering the final segment of an approach. This will assure the aircraft is close enough to activate the system and a full 15min lighting duration is available.

**PILOT-IN-COMMAND (PIC)** — The pilot responsible for the operation and safety of the aircraft during flight time.

**PITCH POINT** — A fix/waypoint that serves as a transition point from a departure procedure or the low altitude ground-based navigation structure into the high altitude waypoint system.

**POINT-IN-SPACE APPROACH (PinS)** — The point-in-space approach is based on a basic GNSS non-precision approach procedure designed for helicopters only. It is aligned with a reference point located to permit subsequent flight manoeuvring or approach and landing using visual manoeuvring in adequate visual conditions to see and avoid obstacles.

**POINT-IN-SPACE REFERENCE POINT (PRP)** — Reference point for the point-in-space approach as identified by the latitude and longitude of the MAPT.

**PRECISION APPROACH (PA) PROCEDURE** — [see INSTRUMENT APPROACH PROCEDURE (IAP)].

**PRECISION APPROACH RADAR (PAR)** — Primary radar equipment used to determine the position of an aircraft during final approach, in terms of lateral and vertical deviations relative to a nominal approach path, and in range relative to touchdown.

*NOTE: Precision approach radars are designated to enable pilots of aircraft to be given guidance by radio communication during the final stages of the approach to land.*



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**PRECISION OBJECT FREE ZONE (POFZ) (FAA)**

— A volume of airspace above an area beginning at the runway threshold, at the threshold elevation, and entered on the extended runway centerline. The standard POFZ is 200ft (60m) long and 800ft (240m) wide. The POFZ must be kept clear when an aircraft on a vertically guided final approach is within two nautical miles (NM) of the runway threshold and the reported ceiling is below 250ft and/or visibility less than  $\frac{3}{4}$  statute miles (SM) (or runway visual range below 4000ft). The POFZ is considered clear even if the wing of the aircraft holding on a taxiway waiting for runway clearance penetrates the POFZ; however, neither the fuselage nor the tail may infringe on the POFZ. For approaching aircraft, in the event that a taxiing/parked aircraft or vehicle is not clear of the POFZ, air traffic control will provide advisories to the approaching aircraft regarding the position of the offending aircraft/vehicle. In this case the pilot of the approaching aircraft must decide to continue or abort the approach. When the reported ceiling is below 800ft or visibility less than 2SM, departing aircraft must do the following. When there is an air traffic control tower (ATCT) in operation, plan to hold at the ILS hold line and hold as directed by air traffic control. When there is no operating ATCT, honor the ILS hold line and do not taxi into position and take-off if there is an approaching aircraft within 2NM of the runway threshold.

**PRE-DEPARTURE CLEARANCE (PDC)** — An automated Clearance Delivery system relaying ATC departure clearances from the FAA to the user network computer for subsequent delivery to the cockpit via ACARS (Airline/Aviation VHF data link) where aircraft are appropriately equipped, or to gate printers for pilot pickup.

**PRESSURE ALTITUDE** — An atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere.

**PREVAILING VISIBILITY** — The greatest visibility value, observed in accordance with the definition "visibility", which is reached within at least half the horizon circle or within at least half of the surface of the aerodrome. These areas could comprise contiguous or non-contiguous sectors.

*NOTE: This value may be assessed by human observation and/or instrumented systems. When instruments are installed, they are used to obtain the best estimate of the prevailing visibility.*

**PRIMARY AREA** — A defined area symmetrically disposed about the nominal flight track in which full obstacle clearance is provided. (See also **SECONDARY AREA**.)

**PRIMARY RADAR** — A radar system which uses reflected radio signals.

**PRIMARY SURVEILLANCE RADAR (PSR)** — A surveillance radar system which uses reflected radio signals.

**PROCEDURE ALTITUDE/HEIGHT** — Are recommended altitudes/heights developed in coordination with Air Traffic Control requirements flown operationally at or above the minimum altitude/height and established to accommodate a stabilized descent at a prescribed descent gradient/angle in the inter-

mediate/final approach segment. Procedure altitudes/heights are never below the Segment Minimum Altitude (SMA) or Segment Minimum Safe Altitude (SMSA).

**PROCEDURE TURN (PT) (ICAO)** — A maneuver in which a turn is made away from a designated track followed by a turn in the opposite direction to permit the aircraft to intercept and proceed along the reciprocal of the designated track.

*NOTE 1: Procedure turns are designated "left" or "right" according to the direction of the initial turn.*

*NOTE 2: Procedure turns may be designated as being made either in level flight or while descending, according to the circumstances of each individual procedure.*

**PROCEDURE TURN (PT) (USA)** — The maneuver prescribed when it is necessary to reverse direction to establish an aircraft on the intermediate approach segment or final approach course. The outbound course, direction of turn, distance within which the turn must be completed, and minimum altitude are specified in the procedure. However, unless otherwise restricted, the point at which the turn may be commenced and the type and rate of turn are at the discretion of the pilot.

**PROCEDURE TURN INBOUND** — That point of a procedure turn maneuver where course reversal has been completed and an aircraft is established inbound on the intermediate approach segment or final approach course. A report of "procedure turn inbound" is normally used by ATC as a position report for separation purposes.

**PROFILE** — The orthogonal projection of a flight path or portion thereof on the vertical surface containing the nominal track.

**PROGNOSTIC CHART** — A forecast of a specified meteorological element(s) for a specified time or period and a specified surface or portion of airspace, depicted graphically on a chart.

**PROHIBITED AREA (ICAO) (USA)** — [see **SPECIAL USE AIRSPACE (SUA)**].

**QFE** — [see **ALTIMETER SETTING**]

**QNE** — [see **ALTIMETER SETTING**]

**QNH** — [see **ALTIMETER SETTING**]

**RACETRACK PROCEDURE (ICAO)** — A procedure designed to enable the aircraft to reduce altitude during the initial approach segment and/or establish the aircraft inbound when the entry into a reversal procedure is not practical.

**RADAR** — A radio detection device which provides information on range, azimuth and/or elevation of objects.

**RADAR APPROACH** — An approach, executed by an aircraft, under the direction of a radar controller.

**RADAR CONTACT** — The situation which exists when the radar position of a particular aircraft is seen and identified on a radar display.

**RADAR SEPARATION** — The separation used when aircraft position information is derived from radar sources.

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**RADAR WEATHER ECHO INTENSITY LEVELS** — Existing radar systems cannot detect turbulence. However, there is a direct correlation between the degree of turbulence and other weather features associated with thunderstorms and the radar weather echo intensity. The National Weather Service has categorized radar weather echo intensity for precipitation into six levels. These levels are sometimes expressed during communications as “VIP LEVEL” 1 through 6 (derived from the component of the radar that produces the information — Video Integrator and Processor). The following list gives the “VIP LEVELS” in relation to the precipitation intensity within a thunderstorm:

Level 1.	WEAK
Level 2.	MODERATE
Level 3.	STRONG
Level 4.	VERY STRONG
Level 5.	INTENSE
Level 6.	EXTREME

**RADIO ALTIMETER / RADAR ALTIMETER** — Aircraft equipment which makes use of the reflection of radio waves from the ground to determine the height of the aircraft above the surface.

**RADIOTELEPHONY** — A form of radio communication primarily intended for the exchange of information in the form of speech.

**RADIOTELEPHONY NETWORK** — A group of radiotelephony aeronautical stations which operate on and guard frequencies from the same family and which support each other in a defined manner to ensure maximum dependability of air-ground communications and dissemination of air-ground traffic.

**REDUCED VERTICAL SEPARATION MINIMUMS (RVSM)** — A reduction in the vertical separation between FL290 – FL410 from 2000ft to 1000ft.

**REGIONAL AIR NAVIGATION AGREEMENT** — Agreement approved by the Council of ICAO normally on the advice of a regional air navigation meeting.

**REPETITIVE FLIGHT PLAN (RPL)** — A flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATS units.

**REPORTING POINT** — A specified geographical location in relation to which the position of an aircraft can be reported.

**REQUIRED NAVIGATION PERFORMANCE (RNP)** — A statement of navigation position accuracy necessary for operation within a defined airspace. RNP is performance-based and not dependent on a specific piece of equipment. RNP includes a descriptive number, the value being an indicator of the size of the containment area (e.g., RNP-0.3, RNP-1, RNP-3, etc.). The different values are assigned to terminal, departure, and enroute operations. Some aircraft have RNP approval in their AFM without a GPS sensor. The lowest level of sensors that the FAA will support for RNP service is DME/DME. However, necessary DME signal may not be available at the

airport of intended operations. For those locations having an RNAV chart published with LNAV/VNAV minimums, a procedure note may be provided such as “DME/DME RNP-0.3 NA.” This means that RNP aircraft dependent on DME/DME to achieve RNP-0.3 are not authorized to conduct this approach. Where DME facility availability is a factor, the note may read “DME/DME RNP-0.3 authorized; ABC and XYZ required.” This means that ABC and XYZ facilities have been determined by flight inspection to be required in the navigation solution to assure RNP-0.3. VOR/DME updating must not be used for approach procedures.

**RESCUE COORDINATION CENTER** — A unit responsible for promoting efficient organization of search and rescue service and for coordinating the conduct of search and rescue operations within a search and rescue region.

**RESCUE UNIT** — A unit composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue.

**RESTRICTED AREA (ICAO) (USA)** — [see SPECIAL USE AIRSPACE (SUA)].

**REVERSAL PROCEDURE** — A procedure designed to enable aircraft to reverse direction during the initial approach segment of an instrument approach procedure. The sequence may include procedure turns or base turns.

**RNAV APPROACH** — An instrument approach procedure which relies on aircraft area navigation equipment for navigation guidance.

**RNP TYPE** — A containment value expressed as a distance in nautical miles from the intended position within which flights would be for at least 95 percent of the total flying time.

EXAMPLE: RNP 4 represents a navigation accuracy of plus or minus 7.4km (4NM) on a 95 percent containment basis.

**ROUTE MINIMUM OFF-ROUTE ALTITUDE (Route MORA)** — This is an altitude derived by Jeppesen. The Route MORA altitude provides reference point clearance within 10NM of the route centerline (regardless of the route width) and end fixes. Route MORA values clear all reference points by 1000ft in areas where the highest reference points are 5000ft MSL or lower. Route MORA values clear all reference points by 2000ft in areas where the highest reference points are 5001ft MSL or higher. When a Route MORA is shown along a route as “unknown” it is due to incomplete or insufficient information.

**RUNWAY** — A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

**RUNWAY EDGE LIGHTS (ICAO)** — Are provided for a runway intended for use at night or for a precision approach runway intended for use by day or night. Runway edge lights shall be fixed lights showing variable white, except that:

- in the case of a displaced threshold, the lights between the beginning of the runway and the displaced threshold shall show red in the approach direction; and

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- b. a section of the lights 600m or one-third of the runway length, whichever is the less, at the remote end of the runway from the end at which the take-off run is started, may show yellow.

**RUNWAY EDGE LIGHTS (USA)** — Lights used to outline the edges of runways during periods of darkness or restricted visibility conditions. The light systems are classified according to the intensity or brightness they are capable of producing: they are the High Intensity Runway Lights (HIRL), Medium Intensity Runway Lights (MIRL), and the Low Intensity Runway Lights (RL). The HIRL and MIRL systems have variable intensity controls, where the RLs normally have one intensity setting.

- a. The runway edge lights are white, except on instrument runways amber replaces white on the last 2000ft or half of the runway length, whichever is less, to form a caution zone for landings.
- b. The lights marking the ends of the runway emit red light toward the runway to indicate the end of runway to a departing aircraft and emit green outward from the runway end to indicate the threshold to landing aircraft.

**RUNWAY HOLDING POSITION** — A designated position intended to protect a runway, an obstacle limitation surface, or an ILS/MLS critical/sensitive area at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorized by the aerodrome control tower.

*NOTE: In radiotelephony phraseologies, the expression "holding point" is used to designate the runway-holding position.*

**RUNWAY INCURSION** — Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft.

**RUNWAY MARKINGS** —

- a. Basic marking — Markings on runways used for operations under visual flight rules consisting of centerline markings and runway direction numbers and, if required, letters.
- b. Instrument marking — Markings on runways served by nonvisual navigation aids and intended for landings under instrument weather conditions, consisting of basic marking plus threshold markings.
- c. All-weather (precision instrument) marking — Marking on runways served by nonvisual precision approach aids and on runways having special operational requirements, consisting of instrument markings plus landing zone markings and side strips.

**RUNWAY STRIP** — A defined area including the runway and stopway, if provided, intended:

- a. to reduce the risk of damage to aircraft running off a runway; and
- b. to protect aircraft flying over it during take-off or landing operations.

**RUNWAY VISUAL RANGE (RVR)** — The range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.

**SAFETY-SENSITIVE PERSONNEL** — Persons who might endanger aviation safety if they perform their duties and functions improperly including, but not limited to, crew members, aircraft maintenance personnel and air traffic controllers.

**SEARCH AND RESCUE SERVICES UNIT** — A generic term meaning, as the case may be, rescue coordination center, rescue subcenter or alerting post.

**SECONDARY AREA** — A defined area on each side of the primary area located along the nominal flight track in which decreasing obstacle clearance is provided. (See also **PRIMARY AREA**).

**SECONDARY RADAR** — A radar system wherein a radio signal transmitted from a radar station initiates the transmission of a radio signal from another station.

**SECONDARY SURVEILLANCE RADAR (SSR)** — A surveillance radar system which uses transmitters/receivers (interrogators) and transponders.

**SEGMENT MINIMUM ALTITUDE (SMA), or SEGMENT MINIMUM SAFE ALTITUDE (SMSA)** — An altitude that provides minimum obstacle clearance in each segment of a non-precision approach. Segment minimum (safe) altitudes can be considered "do not descend below" altitudes and can be lower than *procedure* altitudes which are specifically developed to facilitate a constant rate or stabilized descent.

**SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE** — An instrument approach procedure may have as many as four separate segments depending on how the approach procedure is structured.

**ICAO** —

- a. Initial Approach — That segment of an instrument approach procedure between the initial approach fix and the intermediate approach fix or, where applicable, the final approach fix or point.
- b. Intermediate Approach — That segment of an instrument approach procedure between either the intermediate approach fix and the final approach fix or point, or between the end of a reversal, race track or dead reckoning track procedure and the final approach fix or point, as appropriate.
- c. Final Approach — That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.
- d. Missed Approach Procedure — The procedure to be followed if the approach cannot be continued.

**USA** —

- a. Initial Approach — The segment between the initial approach fix and the intermediate fix or the point where the aircraft is established on the intermediate course or final course.

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- b. Intermediate Approach — The segment between the intermediate fix or point and the final approach fix.
- c. Final Approach — The segment between the final approach fix or point and the runway, airport or missed approach point.
- d. Missed Approach — The segment between the missed approach point, or point of arrival at decision height, and the missed approach fix at the prescribed altitude.

**SEGREGATED PARALLEL OPERATIONS** — Simultaneous operations on parallel or near-parallel instrument runways in which one runway is used exclusively for approaches and the other runway is used exclusively for departures.

**SELECTIVE CALL SYSTEM (SELCAL)** — A system which permits the selective calling of individual aircraft over radiotelephone channels linking a ground station with the aircraft.

**SHORELINE** — A line following the general contour of the shore, except that in cases of inlets or bays less than 30NM in width, the line shall pass directly across the inlet or bay to intersect the general contour on the opposite side.

**SIDESTEP MANEUVER** — A visual maneuver accomplished by a pilot at the completion of an instrument approach to permit a straight-in landing on a parallel runway not more than 1200ft to either side of the runway to which the instrument approach was conducted.

**SIGMET INFORMATION** — Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en route weather phenomena which may affect the safety of aircraft operations.

**SIGNAL AREA** — An area on an aerodrome used for the display of ground signals.

**SIGNIFICANT POINT** — A specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes.

*NOTE: There are three categories of significant points: ground-based navigation aid, intersection and waypoint. In the context of this definition, intersection is a significant point expressed as radials, bearings and/or distances from ground-based navigation aids.*

**SLUSH** — Water-saturated snow which with a heel-and-toe slap-down motion against the ground will be displaced with a splatter; specific gravity: 0.5 up to 0.8.

*NOTE: Combinations of ice, snow and/or standing water may, especially when rain, rain and snow, or snow is falling, produce substances with specific gravities in excess of 0.8. These substances, due to their high water/ice content, will have a transparent rather than a cloudy appearance and, at the higher specific gravities, will be readily distinguishable from slush.*

**SNOW (on the ground) —**

- a. Dry snow. Snow which can be blown if loose or, if compacted by hand, will fall apart upon release; specific gravity: up to but not including 0.35.
- b. Wet snow. Snow which, if compacted by hand, will stick together and tend to or form a snowball; specific gravity: 0.35 up to but not including 0.5.
- c. Compacted snow. Snow which has been compressed into a solid mass that resists further compression and will hold together or break up into lumps if picked up; specific gravity: 0.5 and over.

**SPECIAL USE AIRSPACE** — Airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Types of special use airspace are:

- a. Alert Area (USA) — Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft. Alert Areas are depicted on aeronautical charts for the information of non-participating pilots. All activities within an Alert Area are conducted in accordance with Federal Aviation Regulations, and pilots of participating aircraft as well as pilots transiting the area are equally responsible for collision avoidance.
- b. Controlled Firing Area (USA) — Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to non participating aircraft and to ensure the safety of persons and property on the ground.
- c. Danger Area (ICAO) — An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.
- d. Military Operations Area (MOA) (USA) — A MOA is airspace established outside of a Class "A" airspace area to separate or segregate certain nonhazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted.
- e. Prohibited Area (ICAO) — An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.  
Prohibited Area (USA) — Airspace designated under FAR Part 73 within which no person may operate an aircraft without the permission of the using agency.
- f. Restricted Area (ICAO) — An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

## GLOSSARY

**Restricted Area (USA)** — Airspace designated under Part 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use and IFR/VFR operations in the area may be authorized by the controlling ATC facility when it is not being utilized by the using agency. Restricted areas are depicted on enroute charts. Where joint use is authorized, the name of the ATC controlling facility is also shown.

- g. Warning Area (USA)** — A warning area is airspace of defined dimensions from 3NM outward from the coast of the United States, that contains activity that may be hazardous to nonparticipating aircraft. The purpose of such warning areas is to warn nonparticipating pilots of the potential danger. A warning area may be located over domestic or international waters or both.

**SPECIAL VFR FLIGHT** — A VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC.

**STANDARD INSTRUMENT ARRIVAL (STAR) (ICAO)** — A designated instrument flight rule (IFR) arrival route linking a significant point, normally on an ATS route, with a point from which a published instrument approach procedure can be commenced.

**STANDARD INSTRUMENT DEPARTURE (SID) (ICAO)** — A designated instrument flight rule (IFR) departure route linking the aerodrome or a specified runway of the aerodrome with a specified point, normally on a designated ATS route, at which the enroute phase of a flight commences.

**STANDARD INSTRUMENT DEPARTURE (SID) (USA)** — A preplanned instrument flight rule (IFR) air traffic control departure procedure printed for pilot use in graphic and/or textual form. SIDs provide transition from the terminal to the appropriate enroute structure.

**STANDARD ISOBARIC SURFACE** — An isobaric surface used on a world-wide basis for representing and analyzing the conditions in the atmosphere.

**STANDARD TERMINAL ARRIVAL ROUTE (STAR) (USA)** — A preplanned instrument flight rule (IFR) air traffic control arrival procedure published for pilot use in graphic and/or textual form. STARS provide transition from the enroute structure to an outer fix or an instrument approach fix/arrival waypoint in the terminal area.

**STATION DECLINATION** — The orientation with respect to true north of VHF transmitted signals. The orientation is originally made to agree with the magnetic variation (an uncontrollable global phenomenon) at the site. Hence station declination (fixed by man) may differ from changed magnetic variation until the station is reoriented.

**STOPWAY** — A defined rectangular area on the ground at the end of take-off run available prepared as a suitable area in which an aircraft can be stopped in the case of an abandoned take-off.

**SUBSTITUTE ROUTE** — A route assigned to pilots when any part of an airway or route is unusable because of navaid status.

**SUNSET AND SUNRISE** — The mean solar times of sunset and sunrise as published in the Nautical Almanac, converted to local standard time for the locality concerned. Within Alaska, the end of evening civil twilight and the beginning of morning civil twilight, as defined for each locality.

**SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM (SMGCS) (USA)** — Provisions for guidance and control or regulation for facilities, information, and advice necessary for pilots of aircraft and drivers of ground vehicles to find their way on the airport during low visibility operations and to keep the aircraft or vehicles on the surfaces or within the areas intended for their use. Low visibility operations for this system means reported conditions of RVR 1200 or less.

**SURVEILLANCE APPROACH (ASR)** — An instrument approach wherein the air traffic controller issues instructions, for pilot compliance, based on aircraft position in relation to the final approach course (azimuth), and the distance (range) from the end of the runway as displayed on the controller's radar scope. The controller will provide recommended altitudes on final approach if requested by the pilot.

**SURVEILLANCE RADAR** — Radar equipment used to determine the position of an aircraft in range and azimuth.

**TAKE-OFF DISTANCE AVAILABLE (TODA) (ICAO)** — The length of the take-off run available plus the length of the clearway, if provided.

**TAKE-OFF RUN AVAILABLE (TORA) (ICAO)** — The length of runway declared available and suitable for the ground run of an airplane taking off.

**TAXIING** — Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

**TAXIWAY** — A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

**Aircraft Stand Taxiway** — A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.

**Apron Taxiway** — A portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.

**Rapid Exit Taxiway** — A taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways and thereby minimizing runway occupancy times.

**TERMINAL CONTROL AREA (ICAO)** — A control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes.

**TERMINAL ARRIVAL AREA (FAA) / TERMINAL AREA ALTITUDE (TAA) (ICAO)** — Provides a seamless and efficient transition from the enroute structure to the terminal environment to an underlying

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ing RNAV instrument approach procedure for FMS and/or GPS equipped aircraft. Minimum altitudes depict standard obstacle clearances compatible with the associated instrument approach procedure. TAAs will not be found on all RNAV procedures, particularly in areas with a heavy concentration of air traffic. When the TAA is published, it replaces the MSA for that approach procedure. A standard race-track holding pattern may be provided at the center IAF, and if present may be necessary for course reversal and for altitude adjustment for entry into the procedure. In the latter case, the pattern provides an extended distance for the descent as required by the procedure. The published procedure will be annotated to indicate when the course reversal is not necessary when flying within a particular TAA (e.g., "NoPT"). Otherwise, the pilot is expected to execute the course reversal under the provisions of 14 CFR Section 91.175 (USA). The pilot may elect to use the course reversal pattern when it is not required by the procedure, but must inform air traffic control and receive clearance to do so.

**TERMINAL VFR RADAR SERVICE (USA)** — A national program instituted to extend the terminal radar services provided instrument flight rules (IFR) aircraft to visual flight rules (VFR) aircraft. The program is divided into four types of service referred to as basic radar service, terminal radar service area (TRSA) service, Class "B" service and Class "C" service.

- a. Basic Radar Service — These services are provided for VFR aircraft by all commissioned terminal radar facilities. Basic radar service includes safety alerts, traffic advisories, limited radar vectoring when requested by the pilot, and sequencing at locations where procedures have been established for this purpose and/or when covered by a letter of agreement. The purpose of this service is to adjust the flow of arriving IFR and VFR aircraft into the traffic pattern in a safe and orderly manner and to provide traffic advisories to departing VFR aircraft.
- b. TRSA Service — This service provides, in addition to basic radar service, sequencing of all IFR and participating VFR aircraft to the primary airport and separation between all participating VFR aircraft. The purpose of this service is to provide separation between all participating VFR aircraft and all IFR aircraft operating within the area defined as a TRSA.
- c. Class "B" Service — This service provides, in addition to basic radar service, approved separation of aircraft based on IFR, VFR, and/or weight, and sequencing of VFR arrivals to the primary airport(s).
- d. Class "C" Service — This service provides, in addition to basic radar service, approved separation between IFR and VFR aircraft, and sequencing of VFR arrivals to the primary airport.

**TERMINAL RADAR SERVICE AREA (TRSA) (USA)** — Airspace surrounding designated airports wherein ATC provides radar vectoring, sequencing and separation on a full-time basis for all IFR and

participating VFR aircraft. Service provided in a TRSA is called Stage III Service. Pilots' participation is urged but is not mandatory.

**THRESHOLD (THR)** — The beginning of that portion of the runway usable for landing.

**THRESHOLD CROSSING HEIGHT (TCH)** — The theoretical height above the runway threshold at which the aircraft's glide slope antenna (or equivalent position) would be if the aircraft maintains the trajectory of the ILS glide slope, MLS glide path or charted descent angle.

**TOTAL ESTIMATED ELAPSED TIME** — For IFR flights, the estimated time required from take-off to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights, the estimated time required from take-off to arrive over the destination aerodrome.

**TOUCHDOWN** — The point where the nominal glide path intercepts the runway.

*NOTE: "Touchdown" as defined above is only a datum and is not necessarily the actual point at which the aircraft will touch the runway.*

**TOUCHDOWN ZONE ELEVATION (TDZE)** — The highest elevation in the first 3000ft of the landing surface.

**TRACK** — The projection on the earth's surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid).

**TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS)** — An airborne collision avoidance system based on radar beacon signals which operates independent of ground-based equipment.

TCAS-I generates traffic advisory only;

TCAS-II generates traffic advisories, and resolution (collision avoidance) advisories in the vertical plane.

**TRAFFIC AVOIDANCE ADVICE** — Advice provided by an air traffic services unit specifying manoeuvres to assist a pilot to avoid a collision.

**TRAFFIC INFORMATION** — Information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision.

**TRANSITION ALTITUDE (TA)** — The altitude in the vicinity of an airport at or below which the vertical position of an aircraft is controlled by reference to altitudes (MSL).

**TRANSITION HEIGHT** — The height in the vicinity of an airport at or below which the vertical position of an aircraft is expressed in height above the airport reference datum.

**TRANSITION LAYER** — The airspace between the transition altitude and the transition level. Aircraft descending through the transition layer will use altimeters set to local station pressure, while depart-

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ing aircraft climbing through the layer will be using standard altimeter setting (QNE) of 29.92 inches of Mercury, 1013.2 millibars, or 1013.2 hectopascals.

**TRANSITION LEVEL (TL)** — The lowest flight level available for use above the transition altitude.

**TROPICAL CYCLONE** — Generic term for a non-frontal synoptic-scale cyclone originating over tropical or sub-tropical waters with organized convection and definite cyclonic surface wind circulation.

**TROPICAL CYCLONE ADVISORY CENTRE (TCAC)** — A meteorological centre designated by regional air navigation agreement to provide advisory information to meteorological watch offices, world area forecast centres and international OPMET databanks regarding the position, forecast direction and speed of movement, central pressure and maximum surface wind of tropical cyclones.

**TURN ANTICIPATION** — Turning maneuver initiated prior to reaching the actual airspace fix or turn point that is intended to keep the aircraft within established airway or route boundaries.

**UNCERTAINTY PHASE** — A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

**UNMANNED FREE BALLOON** — A non-power-driven, unmanned, lighter-than-air aircraft in free flight.

*NOTE: Unmanned free balloons are classified as heavy, medium or light in accordance with specifications contained in ICAO Rules of the Air, Annex 2, Appendix 4.*

**UPPER-AIR CHART** — A meteorological chart relating to a specified upper-air surface or layer of the atmosphere.

**URGENCY** — A condition concerning the safety of an aircraft or other vehicle, or of some person on board or within sight, but which does not require immediate assistance.

**VECTORING** — Provision of navigational guidance to aircraft in the form of specific headings, based on the use of an ATS surveillance system.

**VERTICAL NAVIGATION (VNAV)** — That function of RNAV equipment which provides guidance in the vertical plane.

**VERTICAL PATH ANGLE (VPA) (ICAO)** — Angle of the published final approach descent in Baro-VNAV procedures.

**VERTICAL PATH ANGLE (VPA) (USA)** — The descent angle shown on some non-precision approaches describing the geometric descent path from the Final approach fix (FAF), or on occasion from an intervening stepdown fix, to the Threshold Crossing Height (TCH). This angle may or may not coincide with the angle projected by a Visual Glide Slope Indicator (VASI, PAPI, PLASI, etc.)

**VERY HIGH FREQUENCY (VHF)** — The frequencies between 30MHz and 300MHz (200MHz – 3GHz is considered as UHF in the Aviation).

**VFR FLIGHT** — A flight conducted in accordance with the visual flight rules.

**VIBAL** — (Visibilité Balise) Is the method whereby a human observer (or pilot in take-off position) determines the RVR by counting specific markers adjacent to the runway or by counting runway edge lights.

**VISIBILITY (ICAO)** — The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night.

- Flight Visibility — The visibility forward from the cockpit of an aircraft in flight.
- Ground Visibility — The visibility at an aerodrome as reported by an accredited observer.
- Runway Visual Range (RVR) — The range over which the pilot of an aircraft on the centerline of a runway can see the runway surface markings or the lights delineating the runway or identifying its centerline.

**VISIBILITY (USA)** — The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night. Visibility is reported as statute or nautical miles, hundreds of feet or meters.

- Flight Visibility — The average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.
- Ground Visibility — Prevailing horizontal visibility near the earth's surface as reported by the United States National Weather Service or an accredited observer.
- Prevailing Visibility — The greatest horizontal visibility equaled or exceeded throughout at least half the horizon circle which need not necessarily be continuous.
- Runway Visibility Value (RVV) — The visibility determined for a particular runway by a transmissometer. A meter provides a continuous indication of the visibility (reported in miles or fractions of miles) for the runway. RVV is used in lieu of prevailing visibility in determining minimums for a particular runway.
- Runway Visual Range (RVR) — An instrumentally derived value, based on standard calibrations, that represents the horizontal distance a pilot will see down the runway from the approach end; it is based on the sighting of either high intensity runway lights or on the visual contrast of other targets whichever yields the greater visual range. RVR, in contrast to prevailing or runway visibility, is based on what a pilot in a moving aircraft should see looking down the runway. RVR is horizontal visual range, not slant visual range. It is based on the measurement of a transmissometer made near the touchdown point of the instrument runway and is reported in hundreds of feet. RVR is used in lieu of RVV and/or prevailing visibility in determining minimums for a particular runway.

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1. Touchdown RVR — The RVR visibility readout values obtained from RVR equipment serving the runway touchdown zone.
2. Mid-RVR — The RVR readout values obtained from RVR equipment located midfield of the runway.
3. Rollout RVR — The RVR readout values obtained from RVR equipment located nearest the rollout end of the runway.

**VISUAL APPROACH (ICAO)** — An approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain.

**VISUAL APPROACH (USA)** — An approach conducted on an instrument flight rules (IFR) flight plan which authorizes the pilot to proceed visually and clear of clouds to the airport. The pilot must, at all times, have either the airport or the preceding aircraft in sight. This approach must be authorized and under the control of the appropriate air traffic control facility. Reported weather at the airport must be ceiling at or above 1000ft and visibility of 3 miles or greater.

**VISUAL DESCENT POINT (VDP)** — A defined point on the final approach course of a non-precision straight-in approach procedure from which normal descent from the MDA to the runway touchdown point may be commenced, provided the approach threshold of that runway, or approach lights, or other markings identifiable with the approach end of that runway are clearly visible to the pilot.

**VISUAL MANOEUVRING (CIRCLING) AREA** — The area in which obstacle clearance should be taken into consideration for aircraft carrying out a circling approach.

**VISUAL METEOROLOGICAL CONDITIONS (VMC)** — Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling equal to or better than specified minima.

*NOTE: The specified minima are contained in ICAO Rules of the Air, Annex 2, Chapter 4.*

**VOLMET BROADCAST** — Routine broadcast of meteorological information for aircraft in flight.

**VOLCANIC ASH ADVISORY CENTRE (VAAC)** — A meteorological centre designated by regional air navigation agreement to provide advisory information to meteorological watch offices, area control centres, flight information centres, world area forecast centres, relevant regional area forecast centres and international OPMET data banks regarding the lateral and vertical extent and forecast movement of volcanic ash in the atmosphere following volcanic eruptions.

**VOLMET BROADCAST** — Provision of current aerodrome meteorological reports (METAR) and special meteorological reports (SPECI), aerodrome forecasts (TAF), SIGMET by means of continuous and repetitive voice broadcasts for aircraft in flight.

**VOLMET DATA LINK SERVICE (D-VOLMET)** — Provision of current METAR, SPECI, TAF, SIGMET, special air-reports not covered by SIGMET and, where available, AIRMET via data link.

**WARNING AREA (USA)** — [see SPECIAL USE AIRSPACE (SUA)].

**WAYPOINT** — A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either:

**Fly-by waypoint** — A fly-by waypoint requires the use of turn anticipation to avoid overshoot of the next flight segment; or

**Fly-over waypoint** — A fly-over waypoint precludes any turn until the waypoint is overflown and is followed by an intercept maneuver of the next flight segment.

**WEATHER SYSTEMS PROCESSOR (WSP)** — An add-on weather processor to selected Airport Surveillance Radar (ASR)-9 facilities that adds Doppler weather radar capability and provides wind shear and microburst warnings. The system gives controllers timely and accurate warnings for relaying to pilots via radio communications. The WSP also provides controllers with thunderstorm cell locations and movement as well as the predicted future position and intensity of wind shifts that may affect airport operations. The system can also process precipitation data to reduce false severe weather reports caused by anomalous propagation.

**WIDE AREA AUGMENTATION SYSTEM (WAAS)** — WAAS is a navigation system developed for civil aviation that provides extremely accurate horizontal and vertical navigation for all classes of aircraft in all phases of flight - including enroute navigation, airport departures, and airport arrivals. This includes vertically-guided landing approaches in instrument meteorological conditions at all qualified locations.

**WORLD AREA FORECAST CENTRE (WAFc)** — A meteorological centre designated to prepare and issue significant weather forecasts and upper-air forecasts in digital and/or pictorial form on a global basis direct States by appropriate means as part of the aeronautical fixed service.

**WORLD AREA FORECAST SYSTEM (WAFS)** — A world-wide system by which world area forecast centres provide aeronautical meteorological en-route forecasts in uniform standardized formats.