CAP
GEN

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CANADA AIR PILOT

Instrument Procedures

GENERAL PAGES

AIP Canada (ICAO) Part 3 – Aerodromes (AD)

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NAV CANADA

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Preface

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A

AAE	Above Aerodrome Elevation
AB	Alberta
ACC	Area Control Centre
acft	aircraft
A/D	Aerodrome
AD	Aerodrome
ADF	Automatic Direction Finding
adj	adjacent
advsy	advisory
AFB	Air Force Base
A/G	Air/Ground
AGL	Above Ground Level
AIP	Aeronautical Information Publication
alt	altitude
altm	altimeter
altn	alternate
APAPI	Abbreviated Precision Approach Path Indicator
apch	approach
APD	Aircraft Parking/Docking
APGM	Airport General Manager
aprt	airport
aprx	approximately
APV	Approach Procedure with Vertical Guidance
AR	Authorization Required
ARCAL	Aircraft Radio Control of Aerodrome Lighting
ARP	Aerodrome Reference Point
ARR	Arrival
ASDA	Accelerate Stop Distance Available
ASDE	Aerodrome Surface Detection Equipment
ASL	Above Sea Level
A-SMGCS	Advanced Surface Movement Guidance and Control System
ASR	Airport Surveillance Radar
ATB	Airport Terminal Building
ATC	Air Traffic Control
ATD	Along Track Distance
ATF	Aerodrome Traffic Frequency
ATIS	Automatic Terminal Information Service
ATS	Air Traffic Services
AU	Approach UNICOM
auth	authorized/authorization
AUTO	Automated Weather Observation System (Not owned by NAV CANADA or DND)
AVASIS	Abbreviated Visual Approach Slope Indicator System
avbl	available
AWOS	Automated Weather Observation System (Owned by NAV CANADA or DND)

B

Baro	Barometric
BC	British Columbia
bcst	broadcast
bil	bilingual
bldg	building
BM	Back Marker
BPOC	Before Proceeding On Course
brg	bearing

C

C	Celsius
CAP	Canada Air Pilot
CAR	Canadian Aviation Regulation
CARS	Community Aerodrome Radio Station
cat/CAT	category
ccw	counter-clockwise
CDA	Constant Descent Angle
CDF	Central De-Icing Facility
CDI	Course Deviation Indicator
CFS	Canada Flight Supplement
ch	channel

clb	climb
clnc	clearance
clsd	closed
co	county
comm	communicate/communications
cont	continuous/continue
coord	coordinate/coordinates/ coordination
crs	course
ctc	contact
ctl	control, controlled
ctr	centre
cw	clockwise
CYA	Advisory Area
CYR	Restricted Area
cz	control zone

D

D/D/I	DME/DME/IRU
DA	Decision Altitude
dct	direct
del	delivery
dep	departure
DH	Decision Height
direc	direct or directional
dist	distance
DME	Distance Measuring Equipment
DND	Department of National Defence
DP	Departure Procedure
DRCO	Dial-up Remote Communications Outlet
DT	Daylight Saving Time
DTW	Downwind Termination Waypoint

E

E	East
EET	Estimated Elapsed Time
eff	effective
elev	elevation
emerg	emergency
En	English
Eng	English
ETA	Estimated Time of Arrival

F

FACF	Final Approach Course Fix
FAF	Final Approach Fix
FAS	Flight Advisory Service
FATO	Final Approach and Take-Off Area
FAWP	Final Approach Waypoint
FL	Flight Level
FMS	Flight Management System
FOD	Foreign Object Damage
fpm	feet per minute
Fr	French
freq	frequency
FSS	Flight Service Station
ft	feet

G

G	Grid
GFA	Graphic Area Forecast
GM	Ground Movement
gnd	ground
GND ADV	Ground Advisory Service
GNSS	Global Navigation Satellite System
GP	Glide Path
GPA	Glide Path Angle
GPH	DND Flight Information Publication
GPS	Global Positioning System
GS	Glide Slope

H

HAA	Height Above Aerodrome
HAS	Height Above the Surface
HAT	Height Above TDZE
HATh	Height Above Threshold
hdg	heading
HI	Enroute High Altitude Chart
HIAL	High Intensity Approach Lighting

HIRO	High Intensity Runway Operations
HJ	Sunrise to Sunset
HN	Sunset to Sunrise
HP	Heliport
hr	hours
HRP	Heliport Reference Point
HS	Hot Spot

I

IAF	Initial Approach Fix
IAIP	Integrated Aeronautical Information Package
IAP	Instrument Approach Procedure
IAWP	Initial Approach Waypoint
IAWPC	Initial Approach Waypoint Centre
IAWPL	Initial Approach Waypoint Left
IAWPR	Initial Approach Waypoint Right
ICAO	International Civil Aviation Organization
ident	identification
IDF	Initial Departure Fix
IF	Intermediate Fix
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
inbd/ INBD	inbound
inop	inoperative
INS	Inertial Navigation System
intl	international
INTRM	Interim
intxn	intersection
IRS	Inertial Reference System
IRU	Inertial Reference Unit
ISA	International Standard Atmosphere
IWP	Intermediate Waypoint

K

kg	kilograms
KIAS	Knots Indicated Airspeed
kt	knots

L

LB	Lead Bearing
lb	pounds
lczr	localizer
LDA	Landing Distance Available
lgt	light or lighting
lgtd	lighted
LNAV	Lateral Navigation
LO	Enroute Low Altitude Chart
LOC	Localizer (For non-precision approach procedures predicated on a localizer facility)
LP	Localizer Performance
LPV	Localizer Performance with Vertical Guidance
LR	Lead Radial
lt	left
ltd	limited
LVO	Low Visibility Operations
LWIS	Limited Weather Information System

M

m	metres
MAA	Maximum Authorized Altitude
mag/M	magnetic
MAHWP	Missed Approach Holding Waypoint
maint	maintenance
MAP	Missed Approach Point
MATWP	Missed Approach Turning Waypoint
MAWP	Missed Approach Waypoint

max	maximum
MB	Manitoba
MDA	Minimum Descent Altitude
MEA	Minimum Enroute Altitude
MEHT	Minimum Eye Height Over Threshold
MF	Mandatory Frequency
Mil	Military
min	minimum
min	minutes of time
misd	missed
MOCA	Minimum Obstacle Clearance Altitude
MSA	Minimum Sector Altitudes
muni	municipal

N

N	North
N/A	Not Applicable
NAD	North Americam Datum
NADP	Noise Abatement Departure Procedure
nav	navigation
NAVAID	Navigational Aid
NB	New Brunswick
NCP	Night Circuit Procedure
NDA	Northern Domestic Airspace
NDB	Non-Directional Beacon
NDHQ	National Defence Headquarters
NE	North East
NL	Newfoundland & Labrador
NM	Nautical Miles
NOR	Noise Operating Restriction
nr	number
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
nu	not usable
NW	North West
NWS	North Warning System

O

obd/OBD	outbound
obst	obstruction
OCL	Obstruction Clearance Limit
OCSL	Occasional
OM	Outer Marker
ON	Ontario
ops	operations
O/R	On Request
O/T	Other Times

P

PAL	Peripheral station
PAPI	Precision Approach Path Indicator
PAR	Precision Approach Radar
PBN	Performance Based Navigation
PE	Prince Edward Island
PinS	Point-in-Space
PPR	Prior Permission Required
Proc	Procedure
Prop	Propeller
PSR	Primary Surveillance Radar
PT	Procedure Turn
pvt	private

Q

QC	Quebec

R

R	radial
RA	Radio Altimeter
RAIM	Receiver autonomous integrity monitoring
RASS	Remote Altimeter Setting Source
RCAP	Restricted Canada Air Pilot
RCO	Remote Communications Outlet
rdo	radio
RNAV	Area Navigation
RNP	Required Navigation Performance

rt	right
RVO	Reduced Visibility Operations
RVR	Runway Visual Range
Rwy/rwy	Runway

S

S	South
SA	Special Authorization/Specific Approval
SA CAT I	Special Authorization Category I
SA CAT II	Special Authorization Category II
SAC	Strategic Air Command
SDA	Southern Domestic Airspace
SDWP	Step Down Waypoint
SE	South East
sec	seconds of time
SFC	Surface
SID	Standard Instrument Departure
simul	simultaneously
SK	Saskatchewan
SM	Statute Miles
SMGCS	Surface Movement Guidance and Control System
spec	specification
SPEC	Specified
SPEC VIS	Specified Take-off Minimum Visibility
SR	Sunrise
SS	Sunset
STAR	Standard Terminal Arrival
str	straight
SW	South West

T

T	True or Terminal Area Chart
TAA	Terminal Arrival Area
TACAN	Tactical Air Navigation
TAF	Aerodrome Forecast
TC	Transport Canada
TCH	Threshold Crossing Height
TDZ	Touchdown Zone
TDZE	Touchdown Zone Elevation
TDZL	Touchdown Zone Lighting
temp	temperature
tempo	temporary/ily
TFC	Traffic
thld	threshold
TLOF	Touchdown and Lift-Off Area
tml	terminal
TODA	Take-off Distance Available
TORA	Take-off Run Available
TP	Transport Canada Publication
trk	track
twr/TWR	control tower/tower
twy	taxiway

U

UK	Unknown
UNICOM	Universal Communications (Private Advisory Station)

V

V2	Take-off Safety Speed
VAC	Visual Approach Chart
VAGS	Visual Alignment Guidance System
VAP	Visual Approach Procedure
var	variation
VASIS	Visual Approach Slope Indicator System
VFR	Visual Flight Rules
VGM	Voice Generator Module
VGSI	Visual Glide Slope Indicator
VHF	Very High Frequency
VIP	Very Important Person
vis	visibility
VLF	Very Low Frequency
VNAV	Vertical Navigation
VOR	VHF Omnidirectional Range
VORTAC	Combination of VOR and TACAN

VPA	Vertical Path Angle
V/V	Vertical Velocity
VZF	Zero Flap Minimum Safe Manoeuvring Speed

W

W	West
WAAS	Wide Area Augmentation System
WGS	World Geodetic System
win	winter
WP	Waypoint
wx	weather

Y

YT	Yukon Territory

Z

Z	Coordinated Universal Time

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

AERODROME:
Any area of land, water (including the frozen surface thereof) or other supporting surface used, designed, prepared, equipped or set apart for use, either in whole or in part, for the arrival, departure, movement or servicing of aircraft: This includes any buildings, installations and equipment situated thereon or associated therewith.

AERODROME ELEVATION:
The elevation of the highest point of the landing area.

AERODROME TRAFFIC FREQUENCY AREA (ATF):
An area within which a VHF frequency is designated to ensure that all radio equipped aircraft operating on the ground or within the specified area are listening on a common frequency and following a common reporting procedure.

APRON:
That part of an aerodrome, other than the manoeuvring area, intended to accommodate the loading and unloading of passengers and cargo; the refuelling, servicing, maintenance and parking of aircraft; and any movement of aircraft, vehicles and pedestrians engaged in services for such purposes.

BEFORE PROCEEDING ON COURSE (BPOC):
A term used to indicate that a specified procedure must be completed prior to taking action to intercept the desired course.

CLEARWAY:
A defined rectangular area on the ground or water under the control of the appropriate authority selected or prepared as a suitable area over which an aeroplane may make a portion of its initial climb to a specified height (TODA-TORA).

CONTOUR RELIEF:
Smoothed contour lines are depicted on Instrument Approach Procedures, SID and STAR when terrain exceeds 4000 feet above the airport elevation, or when terrain within 6 NM of the Aerodrome Reference Point (ARP) rises to exceed 2000 feet above the aerodrome elevation.

Contour lines, values and tints are printed in brown and will begin at 500 feet above the aerodrome elevation and shall be depicted by smoothed contours in intervals of 1000 feet.

Contour lines and values will not be depicted on SID and STAR charts represented at a scale of 1:1,000,000 or greater, but gradient tints shall be shown. Gradient tints indicate the elevation change between contour intervals. The absence of terrain contour information does not ensure the absence of terrain or structures.

DEAD RECKONING:
The estimating or determining of current position by advancing an earlier known position by the application of direction, time and speed data. Heading information depicted on a dead reckoning segment intercepts the inbound track prior to the IF. The distance shown is the total track distance to the IF. (i.e. “2900 Hdg 238º 10 NM to IF”)

DECISION ALTITUDE (DA):
An altitude specified on a precision approach procedure or an approach procedure with vertical guidance at which the missed approach procedure shall be initiated if the required visual reference necessary to continue the approach to land has not been established.

DECISION HEIGHT (DH):
The height of the DA above the touchdown zone elevation or runway threshold.

DUPLICATE PROCEDURES:
Two or more approach procedures to the same runway that cannot be uniquely distinguished by the navigation type indicator only.

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.

GROUND ADVISORY SERVICE (GND ADV):
At select ATS sites where an MF is in effect and the volume of traffic is such that a second frequency is needed to alleviate congestion on the radio, traffic information services, pre-taxi clearances and other advisory services are provided on a ground advisory (GND ADV) frequency. Following an order from the Minister, the requirements for CAR 602.97(2), 602.98(1) and 602.99 can be waived providing pilots remain on the appropriate frequency while in the MF area. Pilots must still adhere to CAR 602.100 to 602.103 inclusive.

HAZARD BEACON:
An aeronautical beacon used to designate a danger to air navigation.

HEIGHT ABOVE AERODROME (HAA):
The height in feet of the MDA above the aerodrome elevation. HAA is charted for all circling minima.

HEIGHT ABOVE THE SURFACE (HAS):
The height in feet of the MDA above the highest terrain/surface within a 5200 foot radius of the MAP in Point-in-Space helicopter procedures.

HEIGHT ABOVE THRESHOLD (HATh):
The height in feet of the DA or MDA above the runway threshold elevation. HATh is charted for some straight-in minima.

HEIGHT ABOVE TOUCHDOWN ZONE ELEVATION (HAT):
The height in feet of the DA or MDA above the Touchdown Zone Elevation. HAT is charted for some straight-in minima.

HELIPORT:
An aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters.

HOLDING BAY:
A defined area where aircraft can be held, or bypassed, to facilitate efficient surface movement of aircraft.

HOLDING/SHUTTLE PATTERN:
A predetermined manoeuvre which keeps an aircraft within a specified airspace while awaiting further clearance or while climbing/descending to a predetermined altitude. Hold and shuttle patterns depicted with a left hand turn are considered non-standard. When charted, the airspeed shown inside the hold or shuttle pattern indicates the maximum assessed indicated speed.

HOT SPOT:
A location on an aerodrome movement area with a history of or a potential risk for collisions or runway incursions and where heightened attention by pilots is necessary.

INTERSECTION:
A significant point expressed in radials, bearings and/or distances from ground-based navigation aids.

JET AIRCRAFT:
An aircraft powered by jet engines. This does not include propeller powered aircraft. (i.e. A320, B737, CL60)

LANDING DIRECTION INDICATOR:
A device to visually indicate the current direction designated for take-off and landing.

LANDING DISTANCE AVAILABLE (LDA):
The length of runway which is declared available and suitable for the ground run of an aeroplane landing.

LEAD BEARING/RADIAL:
The bearing or radial which provides 2 NM of lead to assist in intercepting the intermediate course. The lead bearing or radial is only shown when the turn exceeds 90°.

LIMITED HOURS:
Limited hours symbols are used with communication frequencies, MF or ATF areas, RASS adjustments, etc. and indicate that the facility or service is only operational for a portion of the 24 hour day. The CFS should be referenced for a complete description of the operating hours.

MANDATORY FREQUENCY AREA (MF):
An area around an aerodrome within which a VHF frequency is designated for use in following the operating requirements of CARs 602.97 through 602.103 inclusive.

MINIMUM DESCENT ALTITUDE (MDA):
A specified altitude referenced to sea level for a non-precision approach below which descent must not be made until the required visual reference to continue the approach to land has been established.

MINIMUM SECTOR ALTITUDE (MSA):
The lowest altitude that may be used that will provide a minimum clearance of 1000 feet, under conditions of standard temperature and pressure, above all obstacles located within a sector of a circle having a radius of at least 25 NM centred on a radio aid to navigation, a waypoint located near the aerodrome or the aerodrome reference point (ARP). The MSA may also take into account operational factors such as controlled airspace and as a result, it may be higher than the Safe Altitude 100 NM.

MULTIPLE PROCEDURES:
Two or more approach procedures portrayed together on a single approach chart.

NON JET AIRCRAFT:
An aircraft powered by any engine type other than a jet engine. Turbo propeller and piston propeller aircraft fit within this group. (i.e. DH8C, SW4, PA31)

PROCEDURE ALTITUDE:
A published altitude used in defining the vertical profile of a flight procedure, at or above the minimum obstacle clearance altitude where established.

PROCEDURE IDENTIFICATION:
The formal identification of an instrument procedure used within spoken radio communication (i.e. ATC clearances). The procedure identification shown on a SID or STAR chart also includes a coded identification for use within an avionics database.

PROCEDURE TURN ENTRY ALTITUDE:
The procedure turn segment is made up of the entry and the manoeuvring zones. The entry zone terminates at the boundary which extends perpendicular to the PT inbound course at the PT fix. The entry zone is established to control the obstacle clearance until proceeding outbound from the procedure turn fix. When specified this altitude shall be maintained until proceeding outbound from the procedure turn fix.

REGULATORY REVIEW DATE (RRD):
Each instrument procedure published within the Restricted Canada Air Pilot is valid until the regulatory review date. The regulatory review date is determined in accordance with Transport Canada Advisory Circular 803-004.

REQUIRED VISUAL REFERENCE:
In respect of an aircraft on an approach to a runway, means that section of the approach area of the runway or those visual aids that, when viewed by the pilot of the aircraft, enables the pilot to make an assessment of the aircraft position and the rate of change of position relative to the nominal flight path.

The visual references required by the pilot to continue the approach to a safe landing should include at least one of the following references for the intended runway and should be distinctly visible and identifiable to the pilot.

a. the runway or runway markings;
b. the runway threshold or threshold markings;
c. the touchdown zone or touchdown zone markings;
d. the approach lights;
e. the approach slope indicator system;
f. the runway identification lights;
g. the threshold and runway end lights;
h. the touchdown zone light;
i. the parallel runway edge lights; or
j. the runway centre line lights.

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.

SAFE ALTITUDE 100 NM:
The lowest altitude that may be used that will provide a minimum clearance of 1,000 feet (1500 ft or 2000 ft for appropriate mountainous region), under conditions of standard temperature and pressure, above all obstacles located in an area contained within a circle of 100 nautical miles radius of the aerodrome reference point.

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.

SPOT ELEVATION:
A point on a chart whose elevation is noted. Usually a spot elevation is used to indicate points higher than the surrounding area. Appropriate spot elevations are charted within the plan view along with their elevation above mean sea level. The highest spot elevation of the plan view is depicted in a larger font.

STEP-DOWN FIX:
A fix permitting additional descent within a segment of an instrument approach procedure by identifying a point beyond which further descent can be made.

STOPWAY:
A defined rectangular area on the ground at the end of the runway in the direction of take-off prepared as a suitable area in which an aeroplane can be stopped in the case of an abandoned take-off (ASDA-TORA).

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

TAKE OFF RUN AVAILABLE (TORA):
The length of runway declared available and suitable for the ground run of an aeroplane taking off.

THRESHOLD CROSSING HEIGHT (TCH):
The height of the glide path above the runway threshold.

THRESHOLD ELEVATION:
The elevation at the intersection of the runway threshold and the runway centreline. Displaced runway threshold elevations are not shown.

TOUCHDOWN AND LIFT-OFF AREA (TLOF):
An area on which a helicopter may touch down or lift off.

TOUCHDOWN ZONE (TDZ):
The first 3000 feet of the runway or the first third of the runway, whichever is less, measured from the threshold in the direction of landing.

TOUCHDOWN ZONE ELEVATION (TDZE):
The highest elevation in the touchdown zone.

TRANSITION ALTITUDE
The altitude at or below which the vertical position of an aircraft is defined by reference to altitudes.

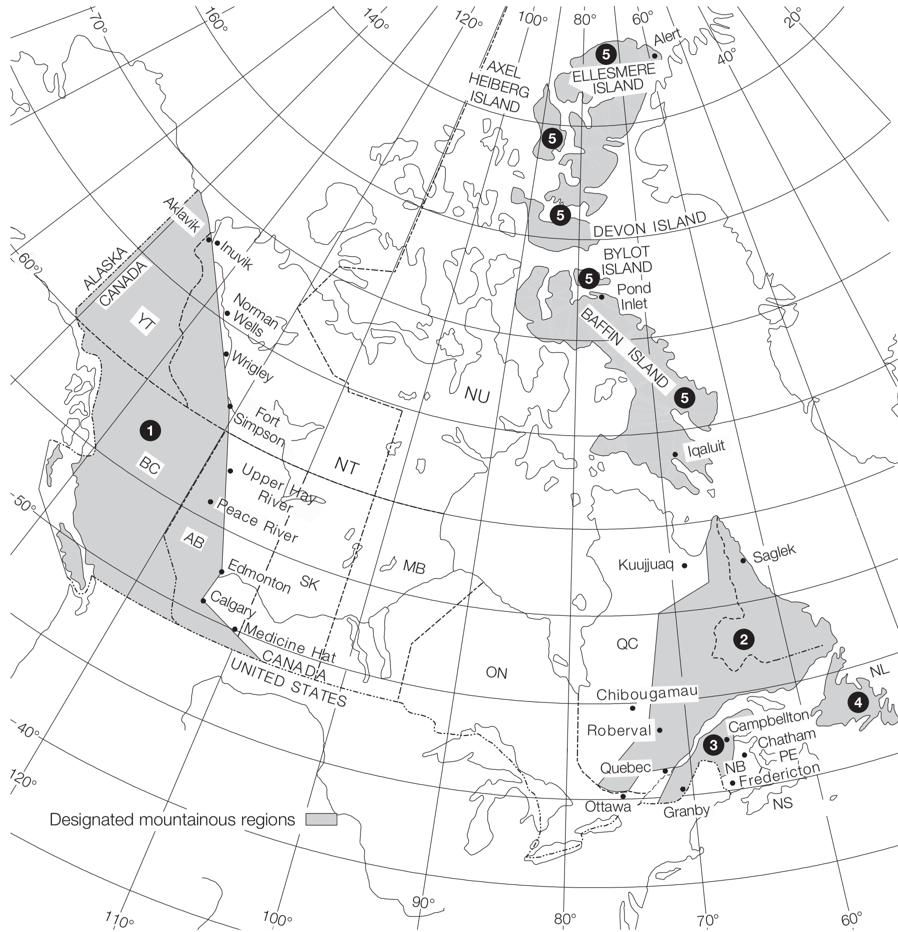
TURBO PROPELLER AIRCRAFT:
An aircraft powered by one or more propellers that are driven by turbine engines.
(i.e. DH8C, BE20, C441)

VERTICAL PATH ANGLE (VPA):
A constant flight path angle defined by Barometric Vertical Navigation or WAAS. See TC AIM for system errors and limitations.

WAAS CHANNEL:
Approach charts providing an LPV or LP line of minima include a WAAS channel number. This is used by certain types of avionics and permits the approach to be loaded by entering the number shown.

WAYPOINT:
A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation.

WIDE AREA AUGMENTATION SYSTEM (WAAS):
A satellite based augmentation system developed by the Federal Aviation Administration (FAA) to augment the Global Positioning System (GPS) with the goal of improving its accuracy, integrity, and availability.



RULES FOR DESIGNATED MOUNTAINOUS REGIONS

IFR flights within Designated Mountainous Regions but outside of areas for which minimum altitudes for IFR operations have been established (including minimum radar vectoring altitudes), shall be operated at an altitude which is at least 2000 feet above the highest obstacle within 5 NM of the aircraft when in areas 1 & 5 and 1500 feet in areas 2, 3 and 4.

On Designated Airways and Air Routes, IFR flights may be operated at the published MEA/MOCA except that in winter when air temperatures may be much lower than those of the International Standard Atmosphere (ISA), aircraft should be operated at an altitude which is at least 1000 feet higher than the published MEA/MOCA.

Refer to Designated Airspace Handbook for the official area definitions.

CAUTION: The combination of extremely low temperatures and the effect of Mountain Waves may result in an altimeter over-reading by as much as 3000 feet. For further details, see "Pressure Altimeter", published in the TC AIM, AIR Section.

General

CAR 602 specifies take-offs for all Canadian aircraft as being governed by visibility only, approach restrictions by RVR values only, and landings by published DH/MDAs only.

Aerodrome Operating Restrictions – Visibility

CAR 602.96 (2)(b) requires that before taking off from, landing at or otherwise operating an aircraft at an aerodrome, the pilot-in-command of the aircraft shall be satisfied that the aerodrome is suitable for the intended operation. Additionally, for Air and Private Operators, the CARs (and associated Standards and Operations Specifications) govern operations below RVR 2600 (½ SM).

One factor that needs to be considered to ensure compliance with the regulatory requirements above is the Aerodrome Operating Visibility.

A. The Aerodrome operating visibility is defined as follows:

At sites with an active Air Traffic Control (ATC) Tower
(in accordance with published airport operational procedures)

For arrivals and departures, the aerodrome operating visibility is in accordance with the following hierarchy:

1. Runway Visual Range (RVR) for the runway of intended use
2. Ground visibility (METAR)
3. Tower visibility
4. Pilot visibility

Note: Tower observed visibility does not take precedence over reported ground visibility. Where ground visibility is reported, tower observed visibility is considered advisory only. However, where ground visibility is either not reported or the visibility reported by the AWOS is non-representative of the prevailing visibility at the airport, tower reported visibility, when available, replaces ground visibility and needs to be considered in the determination of the aerodrome operating visibility.

At sites without an active ATC Tower
(outside ATC operating hours, MF, Unicom, CARS, or advisory sites, etc…)

For arrivals, the aerodrome operating visibility is in accordance with the following hierarchy:

1. Runway Visual Range (RVR) for the runway of intended use
2. Ground visibility (METAR)
3. Pilot visibility

For departures, the aerodrome operating visibility is the lowest of the following visibilities:

- Ground visibility (METAR)
- Any reported RVR
- Pilot visibility

B. For the purpose of Subsections (C) and (D), the visibility is less than the minimum visibility required for landing and taxi operations if the aerodrome's operating visibility is less than the level of service published in the CFS for the runway of intended use.

C. Where the Aerodrome Operating Visibility as set out in subsection (A) is less than the minimum visibility published in the CFS, taxi operations are deemed to be occurring below the published aerodrome operating visibility; except when:

- visibility deteriorates below the published aerodrome operating visibility after the aircraft has commenced taxi for departure (including de-icing stop);
- visibility deteriorates below the published aerodrome operating visibility after the aircraft has landed and is taxiing to the destination on the aerodrome;
- the aircraft is taxiing on the manoeuvring area as authorized by ATC in accordance with the aerodrome's published operational procedures*;
- the aircraft is taxiing for departure at a site without an active ATC Tower, in accordance with the aerodrome's operational procedures published pursuant to CAR 602.96(3)(d)*; or
- the aircraft is taxiing on the manoeuvring area for purposes other than take-off or landing as authorized by the Aerodrome Operator in accordance with the aerodrome's RVOP/LVOP*.

***Note:** Where required, the aerodrome operator will publish special reduced/low visibility restrictions or procedures for pilots in the appropriate aeronautical publication(s).

D. Where the aerodrome operating visibility as set out in subsection (A) is less than the minimum visibility published in the CFS, a landing is deemed to occur below the published aerodrome operating visibility for the runway of intended use; except where:

- at the time a visibility report is received, the aircraft has passed the FAF inbound or where there is no FAF, the point where the final approach course is intercepted;
- the RVR for the runway of intended landing is varying between distances less than and greater than the minimum RVR and the ground visibility is equal to or greater than the minimum visibility;
- at sites without an active ATC Tower, the ground visibility is varying between distances less than and greater than the minimum ground visibility and the RVR is equal to or greater than the minimum visibility; or
- at sites without an active ATC Tower, prior to 1,000' above aerodrome elevation the PIC determines that a localized meteorological phenomenon is affecting the ground visibility by observing that the runway of intended landing and the taxi route to the destination on the aerodrome are seen and recognized.

E. The minimum visibility required for take-off operations is stipulated in the TAKE-OFF MINIMA/DEPARTURE PROCEDURES section.

Application of Low and Reduced Visibility Procedures

Low and reduced visibility procedures apply to ground movements of aircraft arriving and departing under low or reduced visibility conditions. Arrivals and departures below RVR 600 are not authorized. When weather conditions indicate visibility below RVR 2600 is imminent procedures will be implemented restricting aircraft and vehicle operations on the movement area. The following message will be added to the ATIS broadcast: “LOW VISIBILITY PROCEDURES IN EFFECT” or “REDUCED VISIBILITY PROCEDURES IN EFFECT”.

The CAP will contain a Low Visibility Procedures Page and a Low Visibility Taxi Chart for aerodromes with runways certified to operate below RVR 1200 down to and including RVR 600. Aerodromes with runways certified for Reduced Visibility procedures (below RVR 2600 down to and including RVR 1200) may have a Reduced Visibility Procedures Page and a Reduced Visibility Taxi Chart if there are special pilot procedures that need to be published.

The CAP will also contain the level of service for each runway in the Aerodrome Chart. The certification will list the RVR number (“RVR 1200”) if the runway has RVR equipment or only the statute mile visibility (“¼ SM”) if no RVR equipment is present. An entry of RVR 600 indicates the runway meets the requirements to operate below RVR 1200 (¼ SM) down to and including RVR 600.

Sequencing of Aircraft for Ground Movements for Take-Off

Do not request start, push back or call for taxi clearance until the reported RVR is a minimum of:

Aircraft/Pilot Take-Off Minima	Minimum RVR for Start
1200 RVR	1000 RVR
600 RVR	600 RVR

Equipment and Services

Airport Surface Detection Equipment (ASDE)

Ground radar is used to monitor the position of aircraft and vehicles operating on the manoeuvring area. In the event of an ASDE failure, ATC may restrict low visibility operations.

“Follow Me” Vehicle

Dedicated service when visibility conditions are below runway visual range (RVR) 2600 (½ statute mile). This service is provided on pilot’s request.

Take-off Minima/Departure Procedures

The minimum visibility for take-off shall be determined by the pilot-in-command consistent with runway level of service as published in the CFS and CAP, runway requirements for RVR 1200 (¼ SM) or 600 OPS SPEC, aircraft performance, navigation equipment limitations and the requirement for the pilot to ensure obstacle clearance.

IFR Take-Offs

Notwithstanding, and unless otherwise authorized in accordance with CAR 602, IFR take-offs for all aircraft are prohibited when the visibility is below the applicable minimum visibility published in the Canada Air Pilot (CAP), or the level of service published in the CFS and CAP for the runway being used. IFR take-offs for rotorcraft are permitted when the take-off visibility is one half the CAP value but not less than ¼ SM. The "one half of the CAP value but not less than ¼ sm" for rotorcraft IFR take-offs is not applicable to Specified Take-Off Minimum Visibility (SPEC VIS) procedures.

Take-off visibility, in order of precedence, is defined as:

1. the reported RVR of the runway to be used (unless the RVR is fluctuating above and below the minimum or less than the minimum because of a localized phenomena); or
2. the reported ground visibility of the aerodrome (if the RVR is unavailable, fluctuating above and below the minimum or less than the minimum because of localized phenomena. A local phenomenon is deemed to be occurring if the RVR readout is less than the reported ground visibility); or
3. when neither (1) nor (2) above is available, the visibility for the runway of departure as observed by the pilot-in-command.

Departure procedures meet obstacle clearance requirements and are based on the premise that on departure an aircraft will:

- cross at least 35 feet above the departure end of the runway;
- climb on runway heading to 400 feet AAE before turning; and
- maintain a climb gradient of at least 200 feet per NM throughout the climb to the minimum altitude for enroute operations.

Note: For flight planning purposes, departure procedures assume normal aircraft performance.

Take-off Minima are shown as either:

- ½ – (e.g. Rwy 02: ½) IFR departures from the specified runway(s) will be assured of obstacle clearance in any direction if the aircraft complies with the above departure premises.
- ⁎ – The asterisk (⁎) following all or specific runways (e.g. Rwy 02: ⁎) refers the pilot to the applicable minimum take-off visibility (½ or SPEC VIS) and corresponding procedures which, if followed, will ensure obstacle clearance.

Procedures may include specific climb gradients, routings, visual climb requirements or combinations thereof. All altitudes specified in these procedures are ASL. Where a visual climb is stated in the departure procedure, pilots must comply with the Specified Take-off Minimum Visibility (SPEC VIS) corresponding to the appropriate aircraft category listed below. (See Approach Chart Legend – Minima Box – for category speed ranges.)

SPEC VIS is only used in conjunction with a 'visual climb over airport' type departure procedure. During this IFR departure procedure, pilots must visually manoeuver their aircraft to avoid obstacles while climbing to the altitude stated within the procedure. Thence, the pilot must manoeuver their

aircraft over the aerodrome at which point the SPEC VIS and visual requirement may be relinquished and the procedure continued.

Aircraft Category	A	B	C	D
SPEC VIS (SM)	1	1½	2	2

- NOT ASSESSED – IFR departures have not been assessed for obstacles. Pilots-in-command are responsible for determining minimum climb gradients and/or routings for obstacle and terrain avoidance during an IMC departure from that particular runway(s).

In the absence of a published visibility for a particular runway, a pilot may depart IFR by using a take-off visibility that will allow avoidance of obstacles on departure. In no case should the take-off visibility be less than ½ SM (¼ SM for rotorcraft).

Where aircraft limitations or other factors preclude the pilot from following the published procedure, it is the pilot-in-command's responsibility to determine alternative procedures which will take into account obstacle avoidance.

Where departure procedures do not have a rate of climb matrix published, the following conversion table may be used to determine the required rate of climb.

Take-Off or Approach Rate of Climb/Descent Gradient Table

The rate of Climb/Descent Table is provided for use in planning and executing a climb or descent with a known or approximate ground speed. The chart may also be used to calculate a constant rate of descent in the final segment on a non-precision approach where a Constant Descent Angle (CDA) Table is not available. This rate of descent is advisory only. Climb/Descent values are rounded up to the next 10-foot increment.

Gradient		Groundspeed- Knots										Angle°
Feet Per NM	%	60	90	120	150	180	210	240	270	300	330	
200	3.29	200	300	400	500	600	700	800	900	1000	1100	1.89
220	3.62	220	330	440	550	660	770	880	990	1100	1210	2.07
240	3.95	240	360	480	600	720	840	960	1080	1200	1320	2.26
260	4.28	260	390	520	650	780	910	1040	1170	1300	1430	2.45
280	4.61	280	420	560	700	840	980	1120	1260	1400	1540	2.64
300	4.94	300	450	600	750	900	1050	1200	1350	1500	1650	2.83
320	5.27	320	480	640	800	960	1120	1280	1440	1600	1760	3.01
340	5.6	340	510	680	850	1020	1190	1360	1530	1700	1870	3.2
360	5.92	360	540	720	900	1080	1260	1440	1620	1800	1980	3.39
380	6.25	380	570	760	950	1140	1330	1520	1710	1900	2090	3.58
400	6.58	400	600	800	1000	1200	1400	1600	1800	2000	2200	3.77
420	6.91	420	630	840	1050	1260	1470	1680	1890	2100	2310	3.95
440	7.24	440	660	880	1100	1320	1540	1760	1980	2200	2420	4.14
460	7.57	460	690	920	1150	1380	1610	1840	2070	2300	2530	4.33
480	7.9	480	720	960	1200	1440	1680	1920	2160	2400	2640	4.52
500	8.23	500	750	1000	1250	1500	1750	2000	2250	2500	2750	4.7
520	8.56	520	780	1040	1300	1560	1820	2080	2340	2600	2860	4.89
540	8.89	540	810	1080	1350	1620	1890	2160	2430	2700	2970	5.08
560	9.22	560	840	1120	1400	1680	1960	2240	2520	2800	3080	5.27
580	9.55	580	870	1160	1450	1740	2030	2320	2610	2900	3190	5.45
600	9.87	600	900	1200	1500	1800	2100	2400	2700	3000	3300	5.64
620	10.2	620	930	1240	1550	1860	2170	2480	2790	3100	3410	5.83
640	10.53	640	960	1280	1600	1920	2240	2560	2880	3200	3520	6.01
660	10.86	660	990	1320	1650	1980	2310	2640	2970	3300	3630	6.2
680	11.19	680	1020	1360	1700	2040	2380	2720	3060	3400	3740	6.39
700	11.52	700	1050	1400	1750	2100	2450	2800	3150	3500	3850	6.57

Formulas:

- Rate of Climb (FPM) = Climb Gradient (ft/NM) × Ground Speed (knots) /60
  This gives the vertical speed required to maintain a specific gradient at a given ground speed.
- Climb Angle = DEGREES(ATAN(Height/6076.11548))
  Converts climb gradient into an angle in degrees.
- Climb Percentage = Feet Per NM / 6076.11548 x 100
  Converts climb gradient into a percentage.

Helicopter Missed Approach and Departure Climb Gradient

The missed approach and departure segment criteria for all COPTER procedures (Helicopter only procedures) take advantage of the helicopter's climb capabilities at slow airspeeds resulting in high climb gradients. The Obstacle Clearance Surface used to evaluate the missed approach and departure is a 20:1 inclined plane. This surface is twice as steep for the helicopter as the OCS used to evaluate the airplane missed approach and departure segment. The helicopter climb performance on COPTER procedures is therefore anticipated to be double the airplane's gradient. A minimum climb gradient of at least 400 feet per NM is required. A helicopter with a ground speed of 70 kt is required to climb at a rate at 467 feet per minute (FPM)*. The advantage of using the 20:1 OCS for the COPTER missed approach segment instead of the 40:1 OCS used for the airplane is that obstacles in the 40:1 missed approach segment do not have to be considered, and the MDA may be lower for helicopters than for other aircraft. The minimum required climb gradient of 400 feet per NM for the helicopter in a missed approach and departure will provide 96 feet of required obstacle clearance (ROC) for each NM of flight path.

* 467 FPM = 70 kt x 400 feet per NM/60 minutes

Approach Ban – General Aviation – Non-Precision, APV, CAT I or CAT II Precision Approach (Ref. CAR 602.129)

(Commercial Operators see *Approach Ban – Commercial Operators*)

With certain exceptions, pilots of general aviation aircraft are prohibited from completing non-precision approach, an APV, or a CAT I or CAT II precision approach past the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted to a runway served by an RVR if the RVR values as measured for that runway are below the following minima:

Minimum RVR – Non-Precision, APV or CAT I

Measured RVR*	Aeroplanes	Helicopters
RVR "A" Only	1200	1200
RVR "A" and "B"	1200/600	1200/0
RVR "B" Only	1200	1200

Minimum RVR – CAT II

Measured RVR*	Aeroplanes	Helicopters
RVR "A" and "B"	1200/600	1200/0

*RVR "A" located adjacent to the runway threshold.
RVR "B" located adjacent to the runway mid-point.

The following exceptions to the above prohibitions apply to all general aviation aircraft:

- when the below-minima RVR report is received, the aircraft has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted;
- the pilot-in-command has informed the appropriate ATC unit that the aircraft is on a training flight and that the pilot-in-command intends to initiate a missed approach procedure at or above the DH or the minimum descent altitude, as appropriate;
- the RVR is varying between distances less than and greater than the minimum RVR;
- the RVR is less than the minimum RVR, and the ground visibility at the aerodrome where the runway is located is reported to be at least ¼ mile; or
- the pilot-in-command is conducting a precision approach to CAT III minima.

With respect to approach restrictions, in the case of local phenomenon or any fluctuations that affect RVR validity, where the ground visibility is reported by ATC or FSS to be at or above ¼ mile, an approach may be completed.

In summary, an approach is authorized whenever:

- the lowest reported RVR for the runway is at or above minima (CAR 602.129), regardless of reported ground visibility;
- the RVR is reported to be fluctuating above and below minimum RVR;
- the ground visibility is reported to be at least ¼ mile;
- the RVR for the runway is unavailable or not reported; or
- ATS is informed that an aircraft is on a training flight and will conduct a planned missed approach.

No pilot shall commence a non-precision approach, an APV, or a CAT I or CAT II precision approach to an airport where low-visibility procedures are in effect. Low visibility procedures are associated with CAT III operations. They are specified for an airport in the ***Canada Air Pilot*** and restrict aircraft and vehicle operations on the movement area of the airport when the runway visual range is less than 1,200 feet.

Approach Ban – General Aviation – CAT III Approach (Ref. CAR 602.130)

(Commercial Operators see *Approach Ban – Commercial Operators*)

No pilot shall continue a CAT III precision approach in an IFR aircraft beyond the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted, unless the RVR reported is equal to or greater than the minimum RVR specified in the ***Canada Air Pilot*** in respect of the runway or surface of intended approach for the instrument approach procedure conducted.

Minimum RVR – Aeroplanes – CAT III

Measured RVR*	CAT IIIA	CAT IIIB	CAT IIIC
RVR "A" and "B" and "C"	600/600/600	Not Authorized	Not Authorized

* RVR "A" located adjacent to the runway threshold.
RVR "B" located adjacent to the runway mid-point.
RVR "C" located adjacent to the runway end.

Approach Ban – Commercial Operators – General – Non-Precision, APV, or CAT I Precision Approach (Ref. CAR 700.10)

With certain exceptions, pilots of commercial aircraft are prohibited from completing a non-precision approach, an APV, or a CAT I precision approach past the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted, if the visibility report is below the value corresponding to the CAP advisory visibility for the approach conducted:

Minimum Visibility – Aeroplanes – Non-Precision, APV, or CAT I

CAP Advisory Visibility (SM, RVR x 100 ft)	Visibility Report (Gnd Vis SM, RVR "A" or Rwy Vis ft)
½ RVR 26	⅜, RVR or Rwy Vis 1600
¾ RVR 40	⅝, RVR or Rwy Vis 3000
1 RVR 50	¾, RVR or Rwy Vis 4000
1¼	1, RVR or Rwy Vis 5000
1½	1¼, RVR or Rwy Vis 6000
1¾	1½, RVR or Rwy Vis >6000
2	1½, RVR or Rwy Vis >6000
2¼	1¾, RVR or Rwy Vis >6000
2½	2, RVR or Rwy Vis >6000
2¾	2¼, RVR or Rwy Vis >6000
3	2¼, RVR or Rwy Vis >6000

Minimum RVR – Helicopters – Non-Precision, APV, or CAT I

Measured RVR	Helicopters
RVR “A” Only	1200
RVR “A” and “B”	1200/0
RVR “B” Only	1200

An RVR report takes precedence over a runway visibility report or a ground visibility report, and a runway visibility report takes precedence over a ground visibility report. Ground visibility will only impose an approach ban at aerodromes south of 60°N latitude. If no RVR, runway visibility, or ground visibility is reported, there are no criteria to impose an approach ban. (This concept is similar to the present Subpart 602 of the CARs approach ban, where if there is no RVR reported; there is no criterion to impose an approach ban).

An RVR report is the only visibility report that can impose an approach ban applicable to helicopters.

The following exceptions to the above prohibitions apply to all aircraft:

- when the visibility report is below the required value and the aircraft has passed the FAF inbound or;
- the pilot-in-command has informed the appropriate ATC unit that the aircraft is on a training flight and that the pilot-in-command intends to initiate a missed approach procedure at or above the DA(H) or the minimum descent altitude, as appropriate;
- the RVR is varying between distances less than and greater than the minimum RVR;
- the ground visibility is varying between distances less than and greater than the minimum visibility;
- a localized meteorological phenomenon is affecting the ground visibility to the extent that the visibility on the approach to the runway of intended approach and along that runway, as observed by the pilot in flight and reported immediately to ATS, if available, is equal to or greater than the visibility specified in the CAP for the instrument approach procedure conducted; or
- the approach is conducted in accordance with an Ops Spec issued in accordance with subparts 703, 704 or 705 of the CARs.

No pilot shall commence a non-precision approach, an APV, or a CAT I precision approach to an airport where low-visibility procedures are in effect. Low visibility procedures are associated with CAT III operations. They are specified for an airport in the ***Canada Air Pilot*** and restrict aircraft and vehicle operations on the movement area of the airport when the runway visual range is less than 1,200 feet.

Approach Ban – Commercial Operators – CAT II and CAT III Approach (Ref. CAR 700.11)

No pilot shall continue a CAT II or CAT III precision approach in an IFR aircraft beyond the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted, unless the RVR reported is equal to or greater than the minimum RVR specified in the ***Canada Air Pilot*** in respect of the runway or surface of intended approach for the instrument approach procedure conducted.

Minimum RVR – CAT II

Measured RVR*	Aeroplanes	Helicopters
RVR "A" and "B"	1200/600	1200/0

Minimum RVR – Aeroplanes – CAT III

Measured RVR*	CAT IIIA	CAT IIIB	CAT IIIC
RVR "A" and "B" and "C"	600/600/600	Not Authorized	Not Authorized

* RVR "A" located adjacent to the runway threshold.
RVR "B" located adjacent to the runway mid-point.
RVR "C" located adjacent to the runway end.

Approach Ban – Commercial Operators – Ops Spec – Non-Precision, APV, or CAT I Precision Approach (Ref. CARs 703.41, 704.37 or 705.48)

703, 704 and 705 operators authorized through Ops Spec 019, 303 or 503 and meeting all the conditions related to the approach procedure, are permitted to conduct an approach at a visibility value less than those specified in Subpart 700 of the CARs General approach ban. With certain exceptions, pilots of commercial aircraft are prohibited from completing a non-precision approach, an APV, or a CAT I precision approach past the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted, if the visibility report is below the value corresponding to the CAP advisory visibility for the approach conducted:

Minimum Visibility – Aeroplanes – 703/704/705 Ops Spec – Non-Precision, APV, or CAT I

CAP Advisory Visibility (SM, RVR x 100 ft)	Visibility Report (Gnd Vis SM, RVR "A" or Rwy Vis ft)
½ RVR 26	¼, RVR or Rwy Vis 1200
¾ RVR 40	⅜, RVR or Rwy Vis 2000
1 RVR 50	½, RVR or Rwy Vis 2600
1¼	⅝, RVR or Rwy Vis 3400
1½	¾, RVR or Rwy Vis 4000
1¾	1, RVR or Rwy Vis 5000
2	1, RVR or Rwy Vis 5000
2¼	1¼, RVR or Rwy Vis 6000
2½	1¼, RVR or Rwy Vis >6000
2¾	1½, RVR or Rwy Vis >6000
3	1½, RVR or Rwy Vis >6000

An RVR report takes precedence over a runway visibility report or a ground visibility report, and a runway visibility report takes precedence over a ground visibility report. Ground visibility will only impose an approach ban at aerodromes south of 60°N latitude. If no RVR, runway visibility, or ground visibility is reported, there are no criteria to impose an approach ban. (This concept is similar to the present Subpart 602 of the CARs approach ban, where if there is no RVR reported; there is no criterion to impose an approach ban).

The following exceptions to the above prohibitions apply to all aeroplanes:

- when the visibility report is below the required value and the aeroplane has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted; or
- the RVR is varying between distances less than and greater than the minimum RVR.

HIAL Inoperative

Instrument approach procedures developed for runways with HIAL systems receive a credit against their CAP advisory visibility (by up to ½ SM). When these lighting systems are inoperative, adjustments to the approach minima must be made by the pilot as indicated in the tables below. This includes cases when the HIAL system is continuously operating on only one of the normally available intensity levels and changes to the intensity cannot be selected or requested by the pilot during the approach. These approach minima adjustments may determine whether or not the pilot is prohibited from completing an instrument approach past the FAF.

HIAL systems in Canada include the following: SSALR (AN), ALSF-2 (AL), SSALS (AW), CAT I High Intensity (AE) (also known as ALSF-1) and CAT II High Intensity (AC). All of these systems, except for SSALS, are used to certify a precision approach runway.

When the HIAL system is inoperative, a certified precision runway will be downgraded to a non-precision runway. For this reason, an approach procedure with straight-in minima below a DH of 250 ft and below an advisory visibility of 1 SM (RVR 50) must have its minima increased to 250 ft DH and 1 SM (RVR 50) visibility when the HIAL is inoperative. For example:

Straight-in minima corrections for a DH below 250 ft

HIAL Operational (published)		HIAL Inoperative	
DH (ft)	**Advisory Visibility (SM)**	**DH (ft)**	**Advisory Visibility (SM)**
200 – 249	½ (RVR 26)	250	1 (RVR 50)

For approach procedures with straight-in minima of 250 ft DH / HAT or greater, the advisory visibility must be increased if any of the HIAL systems become inoperative, as indicated in the following table. No increase to the DH / HAT itself is required.

For circling minima, no adjustment is required based on the operating condition of the HIAL systems.

Advisory Visibility corrections for a DH/HAT equal to or greater than 250 ft

DH/HAT (ft)	Advisory Visibility when HIAL is Operational (published) (SM)	Advisory Visibility when HIAL is Inoperative (SM)
250 – 347	1	1
348 – 434	1	1¼
435 – 521	1	1½
522 – 608	1¼	1¾
609 – 695	1½	2
696 – 782	1¾	2¼
783 – 869	2	2½
870 – 956	2¼	2¾
957 and above	2½	3

Landing Minima

CAR 602 specifies that landings are governed by published DH/MDAs. Pilots of aircraft on instrument approaches are prohibited from continuing the descent below DH, or descending below MDA, as applicable, unless the required visual reference is established and maintained in order to complete a safe landing. When the required visual reference is not established or maintained, a missed approach must be initiated. Missed approaches initiated beyond the MAP may not be assured obstacle clearance.

The visual references required by the pilot in order to continue the approach to a safe landing should include at least one of the following references for the intended runway and should be distinctly visible and identifiable to the pilot:

- the runway or runway markings;
- the runway threshold or threshold markings;
- the TDZ or TDZ markings;
- the approach lights;
- the approach slope indicator system;
- the runway identification lights (RILS);
- the threshold and runway end lights;
- the touchdown zone lights (TDZL);
- the parallel runway edge lights; or
- the runway centreline lights.

Subject to the Approach Ban, published landing visibilities associated with all instrument approach procedures are advisory. Their values are indicative of visibilities which, if prevailing at the time of approach, should result in the required visual reference being established and maintained to landing. Subject to the Approach Ban, they are not limiting and are intended to be used by pilots to judge the probability of a successful landing when compared against available visibility reports at the aerodrome to which an instrument approach is being carried out.

Altimeter Setting Requirements

Before commencing an instrument approach procedure the pilot shall have set on the aircraft altimeter a current altimeter setting usable for the location where the approach is to be flown. The altimeter setting may be a local setting or a remote setting when so authorized on the instrument procedure chart. Methods of obtaining a current altimeter setting can be found in the Canada Flight Supplement (CFS) for each aerodrome, where available. These readings are considered current up to 90 minutes from the time of observation.

CAUTION: Care should be exercised when using altimeter settings older than 60 minutes or when pressure has been reported as falling rapidly. In these instances a value may be added to the published DH/MDA in order to compensate for falling pressure tendency (0.01 inches mercury = 10 feet correction).

Use of Straight-In Minima

The use of a straight-in minima is predicated upon the pilot having wind direction and speed and runway condition reports required to conduct a safe landing. Where the pilot lacks any necessary information, the pilot is expected to make an aerial visual inspection of the runway prior to landing. In some cases, this can only be accomplished by conducting a circling approach utilizing the appropriate circling MDA.

Runway conditions, including any temporary obstructions such as vehicles, may be determined by the pilot by:

- contacting the UNICOM at the destination;
- a pre-flight telephone call to the destination to arrange for making the necessary information available when required for landing;
- an aerial visual inspection;
- NOTAM issued by the airport operator; or
- any other means available to the pilot, such as message relay from preceding aircraft at destination.

Regardless of wind direction or runway in use, pilots of rotorcraft may use the appropriate published straight-in landing minima for the runway they have selected for their approach.

Alternate Aerodrome Weather Minima Requirements

Authorized weather minima for alternate aerodromes are to be determined using the information presented in the tables shown below under Alternate Weather Minima Requirements. The minima derived for an alternate aerodrome shall be consistent with aircraft performance, navigation equipment limitations, functioning navigation aids (conventional and satellite-based), type of weather forecast, runway to be used and compliance with subsection 605.18(j) of the Canadian Aviation Regulations.

In addition to the Alternate Weather Minima Requirements tables below, the following must be considered by the pilot-in-command for satellite-based approaches at an alternate aerodrome. Credit may be taken for satellite-based approaches provided that:

a. Predicted satellite outages have been taken into account, and pilot-in-command verifies that approach-level RAIM or WAAS integrity is expected to be available at the proposed ETA for any aerodrome;

b. For GPS TSO C129/C129a avionics, periodically during the flight, and at least once before the mid-point of the flight to the destination, the pilot-in-command verifies that approach-level RAIM is expected to be available at the planned destination and/or alternate ETA;

c. Where a satellite-based approach is planned at both the destination and alternate, the aerodromes are separated by a minimum of:

   - 75 NM where both aerodromes are in either Nunavut, or north of 56 degrees North latitude in Quebec and Labrador;
   - 100 NM where either or both aerodromes are located anywhere else in Canada;

d. For RNP Approach navigation specifications [procedure identification RNAV (GNSS) RWY XX]:

   - No credit may be taken for LPV or LP lines of minima;
   - Credit may be taken for LNAV/VNAV lines of minima when the aircraft is certified for barometric LNAV/VNAV; and,
   - Credit may be taken for LNAV lines of minima;

e. For RNP AR Approach navigation specifications [procedure identification RNAV (RNP) RWY XX]:

   - No credit may be taken by General Aviation operators;
   - Credit may be taken by Private and Commercial operators provided they have a valid operator authorization in accordance with their Private Operator Registration Document (PORD) or Aircraft Operating Certificate (AOC); and,
   - Credit may be taken for RNP 0.30 lines of minima only.

Alternate Weather Minima Requirements

Facilities Available at Suitable Alternate	Weather Requirements
Two or More Usable Precision Approaches– each providing straight-in minima to separate suitable runways	**400-1** or 200-½ above the lowest usable HAT and visibility, whichever is greater
One Usable Precision Approach	**600-2*** or 300-1 above the lowest usable HAT and visibility, whichever is greater
Non-Precision Only Available	**800-2*** or 300-1 above the lowest usable HAT/HAA and visibility, whichever is greater
No IFR Approach Available	Forecast weather must be no lower than 500 feet above a minimum IFR altitude that will permit a VFR approach and landing
For Helicopters Where instrument approach procedures are available	Ceiling 200 feet above the minima for the approach to be flown, and visibility at least 1 SM but never less than the minimum visibility for the approach to be flown

***600-2** and **800-2**, as appropriate, are considered to be *Standard Alternate Minima*. Should the selected alternate weather requirements meet the standard minima, then the following minima are also authorized:

Alternate Aerodrome Weather Minima Requirements

Standard Alternate Minima		If Standard is applicable, then the following minima are also authorized	
Ceiling	Visibility	Ceiling	Visibility
600	2	700 800	1½ 1
800	2	900 1000	1½ 1

Notes:

- These requirements are predicated upon the aerodrome having an AERODROME FORECAST (TAF) available.
- Aerodromes served with an AERODROME ADVISORY forecast may qualify as an alternate provided the forecast weather is no lower than 500 ft above the lowest usable HAT/HAA and the visibility is not less than 3 miles.
- Aerodromes served with a GRAPHIC AREA FORECAST (GFA) may qualify as an alternate provided the forecast weather contains:
  - no cloud lower than 1000 ft above the lowest useable HAT/HAA;
  - no cumulonimbus; and
  - a visibility is not less than 3 miles.

- Ceiling minima are calculated by reference to the procedure HAA or HAT. Ceiling values in aviation forecasts are established in 100 ft increments. Up to 20 ft, use the lower 100 ft increment; above 20 ft, use the next higher 100 ft increment:

  Examples: HAA 620 ft = ceiling value of 600 ft;
  HAA 621 ft = ceiling value of 700 ft;
  HAT 420 ft = ceiling value of 400 ft; and
  HAT 421 ft = ceiling value of 500 ft.

- Calculated visibilities should not exceed 3 miles.

  Caution: All heights specified in a GFA are ASL, unless otherwise indicated.

  The emphasis of these criteria is placed upon the availability of the lowest usable landing HAT/HAA and visibility for an aerodrome. In determining the lowest usable landing HAT/HAA and visibility, the pilot should consider:

  - the operational availability of the ground navigational equipment by consulting NOTAM;
  - the compatibility of the aircraft equipment with the ground navigational equipment;
  - the forecast surface wind conditions could dictate the landing runway and associated approach minima;
  - the operational applicability of terms BECMG, TEMPO, and PROB within the forecast (see TC AIM RAC);
  - all heights mentioned within a GFA are ASL heights, unless otherwise indicated, and the terrain elevation must be applied in order to determine the lowest forecast ceiling at a particular location; and
  - alternate minima values determined from a previous flight operation may not be applicable to a subsequent flight operation.

- Aerodrome forecasts (TAF) that contain the terms BECMG, TEMPO or PROB may be used to determine the weather suitability of an aerodrome as an alternate, provided that:
  - where conditions are forecast to improve, the forecast BECMG condition shall be considered to be applicable as of the end of the BECMG time period, and these conditions shall not be below the published alternate minima requirements for that aerodrome;
  - where conditions are forecast to deteriorate, the forecast BECMG condition shall be considered to be applicable as of the start of the BECMG time period, and these conditions shall not be below the published alternate minima requirements for that aerodrome;
  - the forecast TEMPO condition shall not be below the published alternate minima requirements for that aerodrome; and
  - the forecast PROB condition shall not be below the appropriate landing minima for that aerodrome.

General

Criteria have been established for two types of Noise Abatement Departure Procedure (NADP) profiles that are applicable at some Canadian aerodromes. NADP 1 profile reduces noise in close proximity to the departure end of an airport runway. NADP 2 reduces noise over area more distant from the runway end. Two NADP-compliant procedures are described below. Each describes one method, but not the only method, of providing noise reduction for noise-sensitive areas.

All NADP profiles must meet the required minimum climb gradient requirements specified in the SID or departure criteria. Nothing in these procedures shall prevent the pilot-in command from exercising his/her authority for the safe operation of the aircraft.

All aerodromes requiring specific noise abatement departure procedures will have the procedures incorporated in the SID/departure procedure. Wherever possible, the aircraft operator will be given the choice of NADP 1 or 2.

Example:

RWY	NADP
08	1
26	1 or 2
13	1

NADP 1

- Initial climb to at least 800 ft AAE:
  - power/thrust as set for takeoff;
  - flaps/slats in take-off configuration; and
  - climb speed not less than V2 + 10 kt.
- At or above 800 ft AAE:
  - initiate power/thrust reduction;
  - maintain climb speed not less than V2 + 10 to 20 kt; and
  - maintain flaps/slats in take-off configuration.
- At 3000 ft AAE:
  - maintain positive rate of climb;
  - accelerate to enroute climb speed; and
  - retract flaps/slats on schedule.

Note: To assist in planning departure spacing, pilots intending to use NADP 1 at Canadian airports are to notify ATC clearance delivery or ground control. At airports where NADP 1 is the only procedure to follow, ATC does not need to be notified.

NADP 2

- Initial climb to at least 800 ft AAE:
  - power/thrust as set for takeoff;
  - flaps/slats in take-off configuration; and
  - climb speed not less than V2 + 10 kt.
- At or above 800 ft AAE, maintain a positive rate of climb and accelerate towards V_{ZF}, and:
  - retract flaps/slats on schedule; and
  - reduce power/thrust at a point along the acceleration segment that ensures satisfactory acceleration performance.
- Continue the climb to 3000 ft AAE at a climb speed not less than V_{ZF}.
- At 3000 ft AAE, transition to normal en route climb speed.

Cold Temperature Corrections

Pressure altimeters are calibrated to indicate true altitude under ISA conditions. Any deviation from ISA will result in an erroneous reading on the altimeter. In a case when the temperature is higher than the ISA, the true altitude will be higher than the figure indicated by the altimeter and the true altitude will be lower when the temperature is lower than the ISA. The altimeter error may be significant and becomes extremely important when considering obstacle clearances in cold temperatures.

The published minimum IFR altitudes (i.e. the MSA/TAA and the initial/intermediate/final and missed approach segments, including the MDA/DA) must be adjusted when the ambient temperature on the surface is much lower than that predicted by the standard atmosphere. As a general rule, this is considered to be 0°C or, when MDAs/DAs are 1,000 ft HAA or higher, then begin at +10°C.

Note: Should the pilot feel that the above rules do not adequately adjust the published minimum IFR altitudes in the procedures to compensate for low temperatures, it is at the pilot's discretion to apply temperature correction whenever the aerodrome temperature is below ISA.

With respect to altitude corrections the following procedures apply:

1. IFR assigned altitudes may be either accepted or refused. Refusal in this case is based upon the pilot's assessment of temperature effect on obstacle clearance. IFR assigned altitudes accepted by a pilot should not be adjusted to compensate for cold temperatures; i.e. if a pilot accepts "maintain 3000" an altitude correction should not be applied to 3000'.
2. Vectoring altitudes assigned by ATC are temperature corrected and require no temperature compensation by pilots.
3. When altitude corrections are applied to a published mandatory altitude, or missed approach holding altitude, pilots should advise ATC of the temperature corrected altitude prior to crossing the associated waypoint.

Altitude Correction Chart

A/D Temp °C	HEIGHT ABOVE THE ELEVATION OF THE ALTIMETER SETTING SOURCE (feet)													
	200	**300**	**400**	**500**	**600**	**700**	**800**	**900**	**1000**	**1500**	**2000**	**3000**	**4000**	**5000**
+10									20	30	40	60	80	100
0	20	20	30	30	40	40	50	50	60	90	120	170	230	290
-10	20	30	40	50	60	70	80	90	100	150	200	290	390	490
-20	30	50	60	70	90	100	120	130	140	210	280	430	570	710
-30	40	60	80	100	120	130	150	170	190	280	380	570	760	950
-40	50	80	100	120	150	170	190	220	240	360	480	720	970	1210
-50	60	90	120	150	180	210	240	270	300	450	600	890	1190	1500

Note:
- The corrections have been rounded up to the next 10 ft increment.
- Values must be added to published minimum IFR altitudes.
- Temperature values from the reporting station (normally the aerodrome) nearest to the position of the aircraft should be used.

Example: Aerodrome Elevation 2262 Aerodrome Temperature -50° C

	Altitude	HAA	Correction	Indicated Altitude
Procedure Turn	4000 feet	1738 feet	+521.4 feet[1]	4600 feet[2]
FAF	3300 feet	1039 feet	+311.4 feet	3700 feet
MDA Straight-in	2840 feet	578 feet	+173.4 feet	3020 feet
Circling MDA	2840 feet	578 feet	+173.4 feet	3020 feet

[1]**Correction** derived as follows:

(2000 ft at -50° error) 600 - (1500 ft at -50° error) 450	=150
Altitude difference of above (2000 - 1500)	=500
Error per foot difference (150/500)	=0.3
HAA	=1738
Error at 1738 = (1738 - 1500) x 0.3 = 71.4 + 450 (error -50° at 1500)	=521.4

[2]**Indicated Altitude** derived as follows:

Calculated error at 1738 from above	=521.4
Procedure Turn Altitude (4000) + error (521.4)	=4521.4
Indicated Altitude rounded next higher 100 ft increment	=4600

General

Unless otherwise indicated:

- All chart distances are in nautical miles (NM)
- Visibility is expressed in statute miles (SM)
- Runway dimensions are in feet
- Runway Visual Range (RVR) is in hundreds of feet
- Elevations and altitudes (below 18,000') are expressed in feet above mean sea level
- Bearings, tracks and headings are magnetic (unless marked “G” for Grid or “T” for True)

Minimum altitudes meet obstacle clearance requirements under ISA conditions. The transition altitude is 18,000' within Southern Domestic Airspace. Below this altitude, the pilot must set the aircraft altimeter in accordance with CAR 602.35. In Canada, this area is known as the Altimeter Setting Region.

Topography


Contours

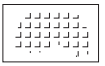
Spot Elevation


Lakes

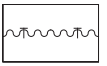

Rivers

Culture

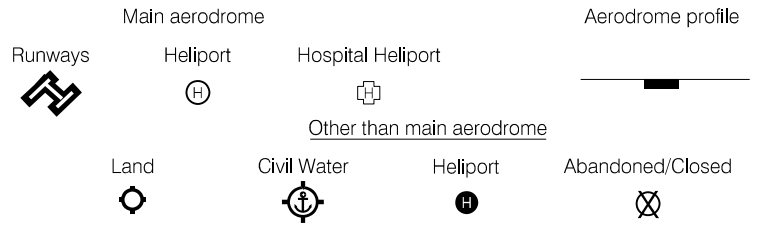

Buildings


Built Up Area

International Boundary


Transmission Line

Aerodrome



Note: The main aerodrome for which the procedure applies will be shown on the procedure chart. Other aerodromes meeting NAV CANADA’s depiction criteria will also be shown.

Manoeuvering Areas


Hard Surfaced


Sand, Gravel, etc.


Steel Mat


Ski Strip (Labelled)


Closed or Abandoned


Displaced Threshold


Turnaround Bay


Taxiway, Apron or Holding Bay


Construction Area


Stopway

Other Aerodrome Elements

● Control Tower (Aerodrome Beacon shown when coincident with Control Tower)

Landing Direction Indicator – Unlighted

Landing Direction Indicator – Lighted

Wind Direction Indicator – Unlighted

Wind Direction Indicator – Lighted

P3 2.5° Approach Slope Lights (Slope given when other than 3.0°)

A B C RVR Sensor

Down 0.8% Runway Gradient

Fence

★ Hazard Beacon

Lighting Annotations

F – Fixed Fl – Flashing Occ – Occulting
B – Blue R – Red G – Green

Lights are white unless otherwise annotated

☆ Aerodrome Beacon (Rotating or Strobe)

Aerodrome Reference Point (ARP)

Bi-directional Arrester Cable

Uni-directional Arrester Cable

Arresting Barrier

Light Pole

* An asterisk indicates that the CFS or another appropriate document is to be referenced or that another piece of data on the same chart is to be referenced

SYMBOL LEGEND

Aircraft Parking Lead In

Taxilane

Taxilane with
Inset Guidance Lights

Taxilane with Non-Standard
Inset Guidance Lights

Runway Guard Lights

Stop Bar

Runway Holding Position – Pattern A

Runway Holding Position – Pattern B

Aircraft Parking Position

Helicopter Parking Position

FATO

Hot Spot


De-Icing Facility

Area of Significance

Intermediate Holding Position

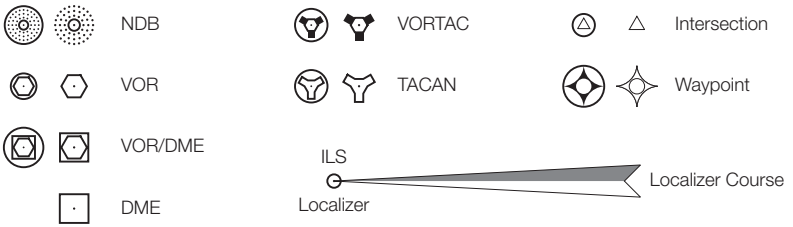
Note: Pattern A, the standard runway holding position, is not depicted on aerodrome or supplementary charts to avoid unnecessary clutter.

Note: Runway holding positions are depicted based on a hierarchy of charts available.

- Aerodrome charts without any supplementary charts included will depict: Pattern B with specific restriction ex: CAT I/II/III HOLD, Intermediate holding positions, Stop Bars and Runway Guard Lights.
- Aerodrome charts without any supplementary taxi chart included will depict: Pattern B with specific restriction ex: CAT I/II/III HOLD, Intermediate holding positions, Stop Bars and Runway Guard Lights (as provided by airport authority).
- Aerodrome charts with supplementary charts included will NOT depict Pattern B, Intermediate holding positions, Stop Bars and Runway Guard Lights since they will be provided on the supplementary charts.
- All supplementary charts (ie: Advisory, Taxi, and LOW Visibility charts) will depict Pattern B with specific restriction ex: CAT I/II/III HOLD, Intermediate holding positions, Stop Bars and Runway Guard Lights (as provided by airport authority).

SYMBOL LEGEND

Significant Points

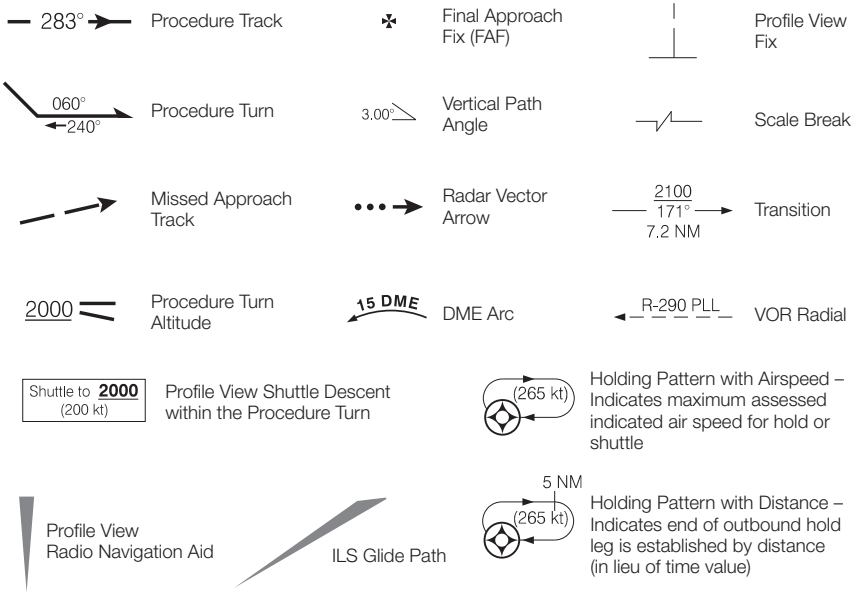


A circle over a radio aid, intersection or waypoint denotes RNAV flyover.

The symbol used for a significant point will be based on a hierarchy of symbols in accordance with NAV CANADA depiction specification and selected in the following order:

- radio navigation aid
- intersection
- waypoint symbol.

Procedure Symbols



Obstacles


Unlighted Obstacle


Unlighted Group Obstacles


Exceptionally High Unlighted Obstacle (1000' AGL and above)

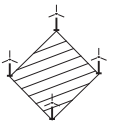

Lighted Obstacle


Lighted Group Obstacles


Exceptionally High Lighted Obstacle (1000' AGL and above)


Unlighted Wind Turbine

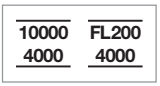

Unlighted Group Wind Turbine


Area Wind Turbines


Lighted Wind Turbine


Lighted Group Wind Turbine

Altitudes/Flight Levels



Altitude/Flight Level Window

Mandatory Altitude/Flight Level

At or Above Altitude/Flight Level

Expected Altitude/Flight Level

Recommended Altitude/Flight Level

At or Below Altitude/Flight Level

Altitude information charted for the safe altitude 100 NM, MSA, TAA, approach minima or within the missed approach instruction and departure procedure continue to represent minimum altitudes although they are not underlined. This also applies to the MOCA values charted on SID and STAR procedures.

Indicated Airspeed

Mandatory Airspeed

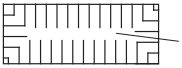
Minimum Airspeed

Recommended Airspeed

Maximum Airspeed

Airspace Restrictions

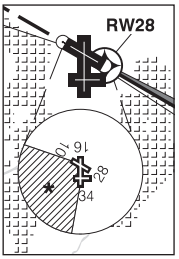
Special Use Airspace
Restricted, Advisory, Danger, Blasting Areas, Military Operations Area



Advisory Area Activity Codes:

(**A**) – Acrobatic
(**F**) – Aircraft Test Area
(**H**) – Hang Gliding
(**M**) – Military Operations
(**P**) – Parachute Dropping
(**S**) – Soaring
(**T**) – Training

Circling Restriction

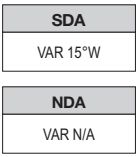


The asterisk in the circling approach minima line refers the user to the circling restriction diagram. The category of aircraft to which the restriction applies will be indicated by the presence of the asterisk in the applicable column of the circling approach minima. The area where circling is prohibited is indicated by the hatched area within the diagram.

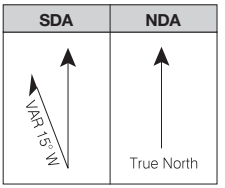
CIRCLING	*	**4060**	(503)	1½	*	**4060**	(503)	2

Magnetic Variation

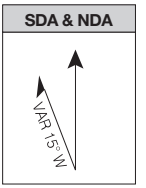
Instrument Approach Procedures



SID, STAR and Departure Procedures



Visual Approach Charts
Night Circuit Procedures

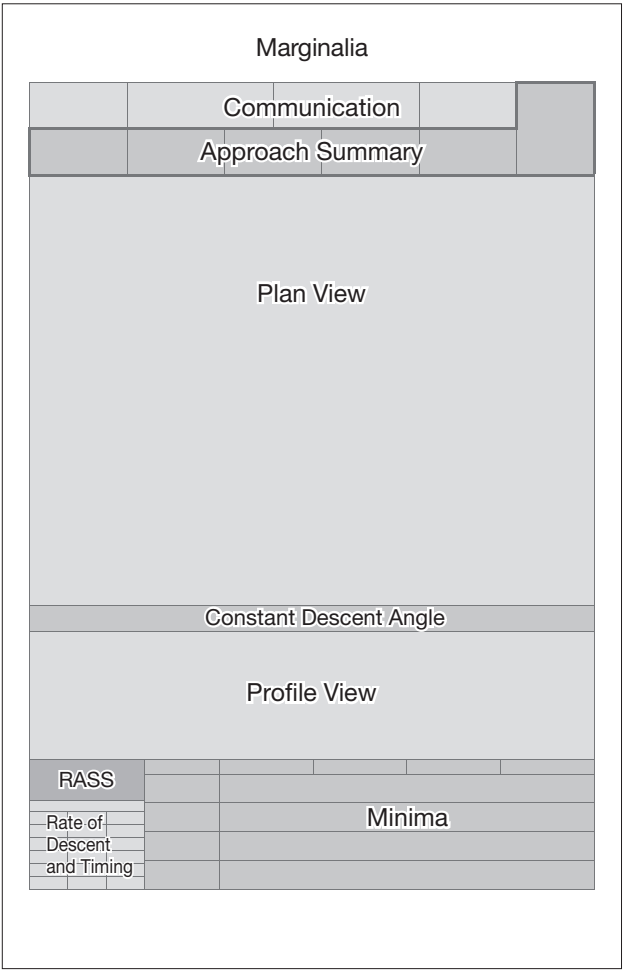


Aerodrome/Heliport Charts
Taxi Charts
Parking Area and De-icing Positions and Procedure Charts
Operations in the Absence of Apron Control Charts
Start Boxes Charts

Magnetic variation changes over time. The magnetic variation depicted on an instrument procedure represents the magnetic variation used in determining the procedure's magnetic bearings, tracks and radials on the chart. The magnetic variation used within aircraft avionics may be updated on a different cycle and could result in the on board avionic system displaying slightly different magnetic tracks from the charted values.

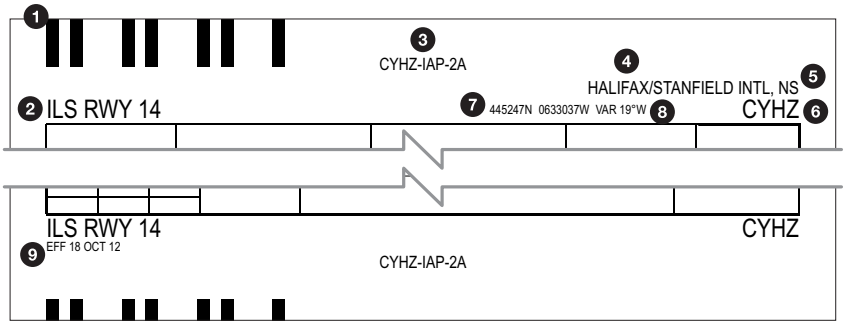
The information and examples in this section are intended to define and explain the various parts of the CAP approach chart. Information is provided for the generic approach chart, helicopter only approach chart, visual approach chart, ILS category II or III approach chart as well as RNP AR approach chart. All graphics presented here are for explanatory purposes only and are not intended to be used for navigation.

Generic Approach Chart



Marginalia

Information shown in the periphery of the approach chart includes the procedure identification, ARP, primary variation or declination used in determining the procedure's bearings, tracks or radials, aerodrome identification, procedure effective date and chart number.



1. Volume Bar
2. Procedure Identification
3. Chart Number
4. Aerodrome Name
5. Province/Territory
6. Aerodrome Identifier
7. ARP
8. Magnetic Variation
9. Effective Date

Procedure Identification

Basic Naming

The procedure identification is the name used to uniquely identify the procedure at an aerodrome. The first part of the procedure identification indicates the primary navigation type required for final approach lateral guidance.

- NDB → "NDB"
- VOR or VORTAC → "VOR"
- Localizer → "LOC"
- ILS → "ILS"
- ILS Special Authorization Category I → "ILS SA CAT I"
- ILS Special Authorization Category II → "ILS SA CAT II"
- ILS Category II/III → "ILS CAT II or III"
- RNAV GNSS → "RNAV (GNSS)"
- RNAV RNP → "RNAV (RNP)"

The runway number follows the navigation type when the approach procedure provides minima for a straight-in approach.

- VOR RWY 26
- RNAV (GNSS) RWY 14

Additional Navigation Requirements

When all minima lines of a VOR or NDB type approach chart also require the use of DME equipment to identify fixes within the final segment, the procedure identification includes "/DME".

- VOR/DME RWY 13
- NDB/DME RWY 35

In all other cases, additional navigation requirements are indicated within the minima lines of the approach:

- ILS/DME
- LOC/DME
- LNAV/VNAV
- LP
- LPV

Pilots must determine in advance that the approach and missed approach can be accomplished utilizing the navigation equipment on board their particular aircraft.

Multiple Procedures

When a single chart is used to show two approach procedures, the procedure identification separates the navigation types using the term "or". ILS and LOC procedures are considered one approach for this purpose and are not separately identified.

- ILS or NDB RWY 25

Duplicate Procedures

Avionics database coding standards identify 8 navigation types applicable to straight-in procedure identifications. They are:

- ILS
- LOC
- VOR
- VOR/DME
- NDB
- NDB/DME
- RNAV

Two approach procedures to the same runway requiring the use of the same navigation type indicator are considered duplicate procedures for database coding purposes. To uniquely identify these procedures, an alpha character starting with "Z" and generally proceeding backwards through the alphabet (Z, Y, X…) is added to the procedure identification between the navigation type and runway number. In some cases the "Y" or "X" alpha character may be omitted and reserved for future procedure development. **The procedure assigned the "Z" character is considered the predominant procedure and will be the only retrievable procedure in avionics databases having limited storage capabilities.**

- RNAV (GNSS) Z RWY 26
- RNAV (RNP) Y RWY 26
- VOR Z RWY 13
- VOR Y RWY 13

Category I ILS, Special Authorization (SA) Category I ILS, Category II ILS, SA Category II ILS, and/or Category III ILS approaches to the same runway with the same ground tracks, altitudes (landing minimums excluded), and missed approach instructions are not considered duplicates of each other and do not require separate alphabetical identification suffixes. For example, no suffix is required for either the "ILS RWY 16R" or "ILS SA CAT I RWY 16R", but if the CAT I ILS has a suffix, then the same suffix is assigned to the ILS SA, for example, "ILS Y RWY 16R" and "ILS SA CAT II Y RWY 16R".

Circling Only Procedures

Approach procedures providing only circling minima are not identified as associated to a specific runway. Instead, these procedures are identified using an alpha character after the navigation type starting with "A" and proceeding forward through the alphabet (A, B, C…). The next sequential alpha character is assigned to the next circling only procedure for the site based on its order within the Canadian instrument procedure inventory.

- RNAV (GNSS) A
- NDB B

Additional Suffixes

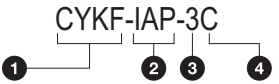
The procedure identification may be suffixed with one or a combination of the following suffixes.

- "(TRUE)" Identifies the procedure as existing in NDA
- "(DND)" Identifies the procedure as a procedure designed and maintained by the Department of National Defence.

Chart Numbering

Within the entire inventory of effective Canadian instrument procedures, procedure charts are sequenced according to NAV CANADA specifications. Chart numbers are then assigned to each chart based on the established sequence. The sequencing is done considering the entire inventory of procedures and is not applied within the isolation of one specific paper product (CAP, RCAP or GPH 200 volume). For this reason, some chart numbers may appear to be missing when observed within the isolation of one specific paper product.

Page numbers are assigned to a chart as explained here. Items 3 and 4 will only be used when they are required.



Item 1

Item 1 is the four letter ICAO identification of the specific aerodrome or heliport site.

Item 2

Item 2 is expressed as one of eleven abbreviations representing the procedure chart type. They include:

STAR	Standard Terminal Arrival Chart	**AD**	Aerodrome Chart
IAP	Instrument Approach Procedure Chart	**HP**	Heliport Chart
VAP	Visual Approach Procedure Chart	**GM**	Ground Movement/Taxi Chart
SID	Standard Instrument Departure Chart	**APD**	Aircraft Parking/Docking Chart
DP	Departure Procedure Chart	**NCP**	Night Circuit Procedure Chart
NOR	Noise Operating Restrictions/Noise Abatement Procedure Chart		

Note: The Attention All Users Page is grouped with IAP pages and identified as ICAO-IAP-AAU. Other specialty information page types may be grouped within the AD (aerodrome) or GM (Ground movement) categories.

Item 3

Item 3 is a one or two digit number. For STAR, VAP, SID and DP charts the number is assigned sequentially based on the procedure. A subsequent number is not assigned to the additional chart pages of a multi-page instrument procedure. These instances are accounted for using item 4 explained below.

For NOR, AD, HP and APD charts the number is assigned sequentially for each subsequent page.

For IAP charts, the item 3 number is assigned based on the type of IAP as follows:

1	Precision Approach Radar	**6**	VOR
2	ILS CAT I, II, III	**7**	TACAN
3	RNAV	**8**	NDB/DME
4	LOC	**9**	NDB
5	VOR/DME		

For GM charts, the item 3 number is assigned based on the type of GM chart as follows:

1	Taxi Chart	**3**	Low Visibility Taxi Route Chart
2	Standard Taxi Route Chart	**4**	De-icing Chart

Item 4

Item 4 is expressed as an alpha character starting with “A” and proceeding forward through the alphabet. It is assigned sequentially to each chart page that is not already uniquely numbered.

Specialty Information Pages

Special Information may be presented in a variety of formats within the CAP. These are categorized as Attention All Users pages (AAUP), and Aerodrome information pages.

AAUP: Two types are used:

- Attention All Users – Established on RNP AR (AAU – EoR): Provides detailed direction to pilots regarding operational requirements, ATC expectations, and breakout instructions. This page precedes all IAP charts.
- Attention All Users – Closely Spaced Parallel Operations (AAU – CSPO): Provides critical information for Precision Runway Monitor (PRM) approaches. Detailed instruction on operator and equipment requirements, breakout instructions, and provision for operators who may be unable to meet requirements. This page precedes all PRM charts.

Note: A site may have more than one AAUP.

Airport Information Pages (Designator):

- Local Aerodrome Regulations (LAR)
- Flight Procedures (FP)
- Additional Information (AI)
- Aerodrome Chart
- High Intensity Runway Operations (HIRO)
- Miscellaneous charts related to an aerodrome/heliport not otherwise categorized; for example, Aerodrome Chart (REDUCED TAKE-OFF RUNS)

Note: Sites listed within the CAP always have an Aerodrome Chart page. Additional pages are added based on site needs.

Ground Movement (GM) charts. Sites can have more than one type of GM chart based on site complexity and requirements. Examples include:

- Taxi Chart – including a special TAXI ADVISORY CHART where required.
- Standard Taxi Route Charts and/or CODED TAXI ROUTES.
- Low Visibility Taxi Route Charts – including LOW VISIBILITY PROCEDURES where required.
- De-icing Charts; DE-ICING OPERATIONS chart and/or DE-ICING FACILITY chart
- ENGINE FAN BLADE ICE SHEDDING PROCEDURES

Communication

Under standard conditions, communication information is presented on a procedure chart using a series of communication systems as explained here.

The five communication systems are defined as follows:

Automated Weather System: Pre-recorded or voice generated weather or site operations information. Applicable communication agencies include ATIS, AWOS, LWIS and AUTO.

Arrival System: Communication information pertaining to the most common method upon which a pilot would receive arrival instructions and/or approach clearance in low level controlled airspace within 30 NM of the aerodrome site. Applicable agencies include CTR, ARR, TML, RADIO and PAR.

Tower System: Communication information pertaining to aircraft movement (airborne and runway) around the aerodrome site. Applicable agencies include tower (TWR), RADIO, UNICOM, airport radio (APRT RADIO) and traffic (TFC).

Ground System: Communication information pertaining to aircraft movement (taxiways and aprons) on the aerodrome site. When the agency identified in the tower system also provides the ground system service, it is not restated here. When an aerodrome site uses a clearance delivery service, it is stated as part of the ground system. Applicable agencies include clearance delivery (CLNC DEL), APRON, ground (GND), pad control (PAD CTL) and ICEMAN.

Departure System: Communication information pertaining to the most common method upon which a pilot would receive further departure instructions or control after take-off in low level controlled airspace within 30 NM of the aerodrome site. In addition to this, an on-site FISE RCO is shown when it is the only way to obtain IFR clearance on the ground prior to departure for at least a portion of the day. Applicable agencies include CTR, DEP, TML and RADIO.

These five systems are arranged sequentially as they would be used during the arrival phase of flight or during the departure phase of flight. These sequential arrangements are referred to as the Arrival Communication String and the Departure Communication String.

Arrival Communication String	1. Automated Weather System 2. Arrival System 3. Tower System 4. Ground System
Departure Communication String	1. Automated Weather System 2. Ground System 3. Tower System 4. Departure System

Each procedure chart type incorporating communication information depicts one of the two communication strings or a subset portion of it as shown here. When a communication system block for a specific site has no information, it will remain blank.

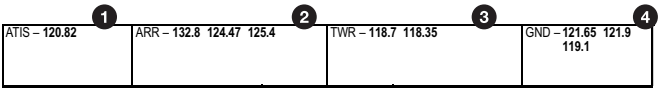
STAR Chart	1, 2 & 3 of the Arrival Communication String
IAP Chart	Entire Arrival Communication String
Aircraft Parking / Docking Chart	1 & 2 of the Departure Communication String
Aerodrome Ground Movement / Taxi Chart	1, 2 & 3 of the Departure Communication String
Aerodrome and Heliport Chart	Entire Departure Communication String
SID and Graphic Departure Procedure Chart	3 & 4 of the Departure Communication String

If the site name of the communication agency is different than the aerodrome for which the procedure exists, it is specified after the agency identifier (i.e. RADIO Edmonton, TWR City).

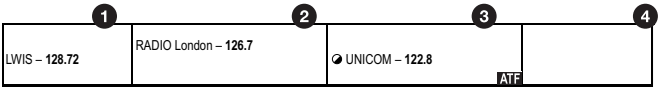
If an agency or frequency only operates for limited hours during the day, the agency identifier is prefixed by a limited hours symbol (i.e. ◕). The CFS is to be consulted for the specific operating times. Any agency that exists as a dial-up frequency is identified using a “DRCO” suffix (i.e. DRCO).

Within the tower system block, when the TFC is also the frequency of the UNICOM, it is not restated separately. Required traffic broadcasts are to be made on the frequency specified for the UNICOM agency unless otherwise described.

IAP Chart, Arrival Communication String



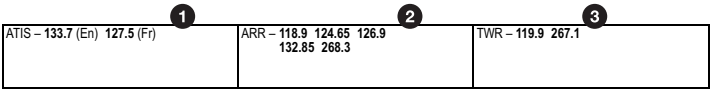
Example 1



Example 2

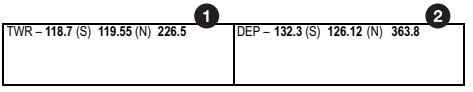
1 Automated Weather System
2 Arrival System
3 Tower System
4 Ground System

STAR Chart, Arrival Communication String



1 Automated Weather System
2 Arrival System
3 Tower System

SID Chart, Departure Communication String



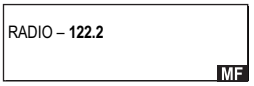
1 Tower System
2 Departure System

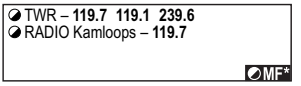
ATF & MF Indication

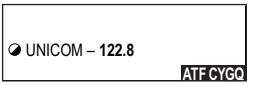
Aerodrome sites having either an ATF area or an MF area around them are identified by charting the appropriate symbol in the bottom right corner of the Tower System block. The ATF and MF symbol may be complimented with other symbols to further define the specific details of the ATF or MF area. The possible symbols are explained here:

ATF	Indicates the presence of an ATF area with standard dimensions (5 NM, 3000' AAE, [±100']) around the aerodrome site.
MF	Indicates the presence of an MF area with standard dimensions (5 NM, 3000' AAE, [±100']) around the aerodrome site.
ATF MF	Indicates that the ATF or MF area exists for only a portion of the day.
ATF* MF*	Indicates that the ATF or MF area is non-standard. Non-standard is deemed to exist if the area is not 5 NM in radius and 3000' AAE (±100'). In these cases, the CFS is to be consulted for further information.
ATF CYGQ MF CYAW	When a four letter aerodrome identification follows the ATF or MF symbol, this indicates that the ATF or MF area is centred on an adjacent site. The adjacent site is identified by the four letter identifier.

Tower System Examples

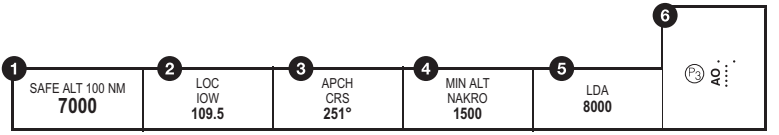






Approach Summary

The Approach Summary includes six blocks of information summarizing the primary aspects of the approach procedure.

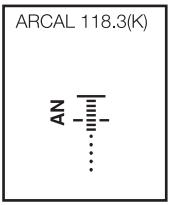


1 Safe Altitude 100 NM	This block contains the safe altitude 100 NM.
2 Navigation Type	This block specifies information for the navigation type used to provide the final approach course lateral guidance. When the lateral guidance may be provided by one of two navigation types (i.e. combined ILS, LOC and NDB chart), this block contains the navigation type information applicable to the higher performing system (i.e. the LOC, not the NDB). For conventional procedures, the navigation type, NAVAID identification and NAVAID frequency is specified. When the approach is RNAV without an LPV or LP line of minima, the term “RNAV” is specified. When LPV or LP is charted, the term “WAAS” along with the WAAS channel number and reference path identifier is specified.
3 Final Approach Course	This block indicates the final segment approach course.
4 FAF Altitude	When an ILS line of minima exists on a chart, this block contains the ILS glide path check altitude. When an ILS line of minima does not exist on a chart, the minimum FAF crossing altitude (intermediate segment altitude) is specified. For approach procedures that do not have a FAF, this block remains blank.
5 Landing Distance Available	When an approach procedure chart provides a straight-in line of minima, this block specifies the Landing Distance Available for the straight-in runway. If an approach procedure chart only provides circling minima, the pilot is referred to the aerodrome chart for specific LDA information. For helicopter only approach procedures, this block contains the length and width or diameter of the helipad when known.

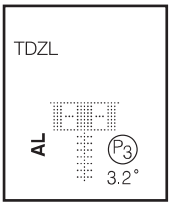
❻ Lighting	This block specifies the lighting information applicable to the straight-in runway. This includes any touch down zone lighting, approach lights as well as PAPI or VASIS information. If the PAPI or VASIS system is other than 3º, its angle is specified beside the PAPI or VASIS code. When the approach procedure provides circling only minima and the runways existing at the aerodrome have approach lighting systems, the text "LIGHTING: REFER TO AD CHART" is shown. ARCAL is specified when it exists for the aerodrome site. The abbreviations "(J)" or "(K)" may follow. In these cases, the CFS should be referenced for more information about the use of type J or type K ARCAL. An asterisk associated to an approach light code, ARCAL, PAPI or VASIS indicates that the system is non standard and the CFS should be referenced for further information. When the true track of the final approach course is offset from the true runway bearing, an offset arrow and the amount of the offset is charted. Within the lighting block, the offset arrow is positioned right or left of the block's north-south axis to represent the position of the approaching aircraft relative to the runway's centreline. The offset arrow is not used when the approach procedure only provides circling minima. For helicopter only approach procedures, only the ARCAL and lighting code information is charted.

Lighting Block Examples

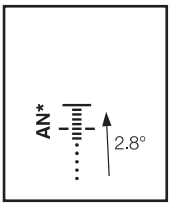
ARCAL without Lighting Diagram



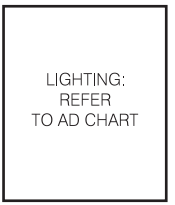
ARCAL with Lighting Diagram



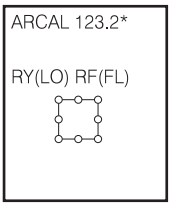
TDZL, PAPI with Lighting Diagram



LOC offset (2.8° rt) with Lighting Diagram



Circling Lighting Diagram

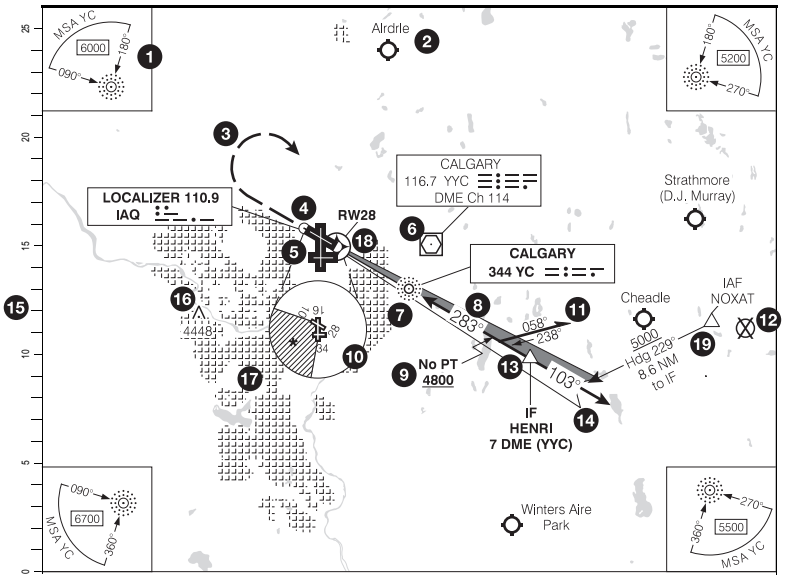


ARCAL with Copter Lighting Diagram

Plan View

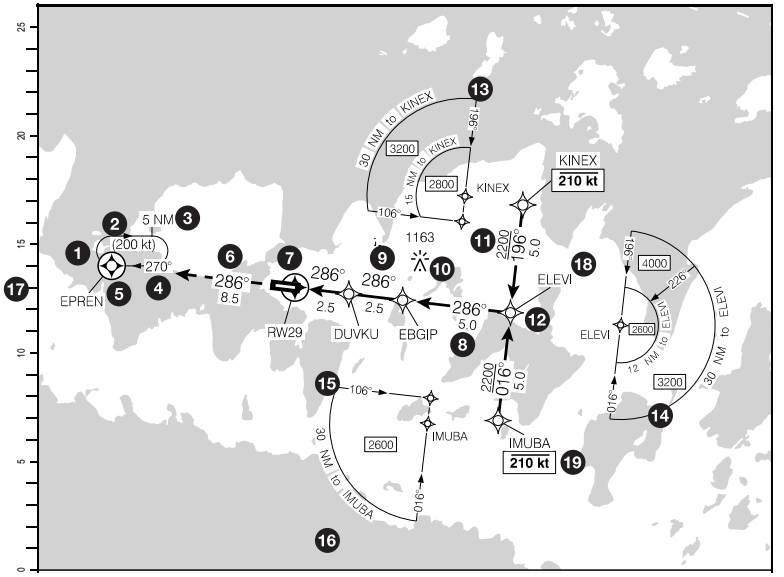
The plan view of the approach procedure chart provides a scaled overview of the procedure from an overhead perspective. Data within the plan view is drawn to scale unless a scale break and "NOT TO SCALE" box is shown.

Example 1



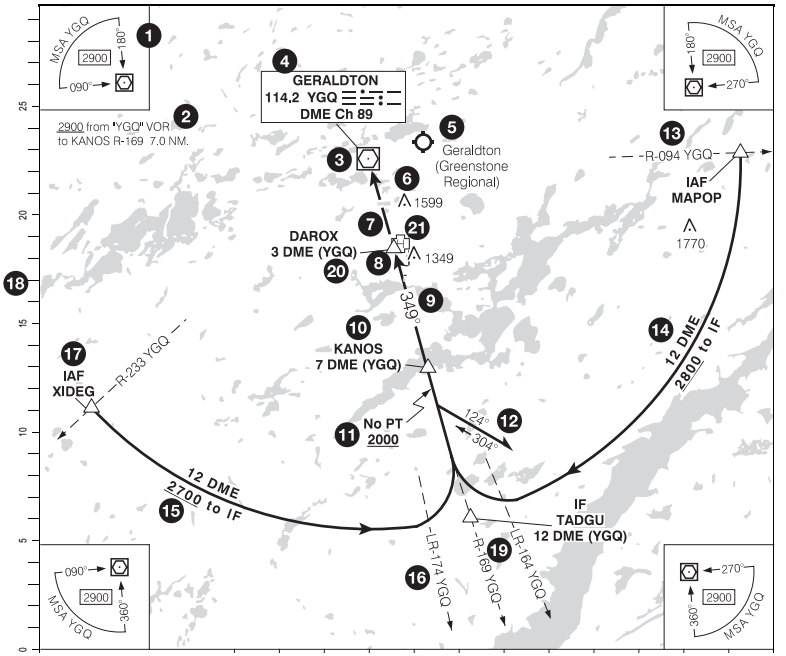
1. Minimum Sector Altitude
2. Other Land Aerodrome
3. Missed Approach Track
4. Localizer NAVAID
5. Main Aerodrome
6. VOR/DME NAVAID
7. NDB NAVAID
8. Inbound Final Approach Course
9. No Procedure Turn Required
10. Circling Restriction
11. Procedure Turn
12. Abandoned/Closed Aerodrome
13. Intersection Symbol
14. Localizer Front Course
15. Scale Indication
16. Obstacle
17. Built Up Area
18. Waypoint Symbol
19. Dead Reckoning Segment

Example 2



1. Hold/Shuttle Pattern
2. Hold/Shuttle Assessed Speed
3. Hold Leg Length
4. Hold/Shuttle Inbound Track
5. Flyover Waypoint
6. Missed Approach Track
7. Main Aerodrome
8. Segment Distance
9. Segment Track
10. Obstacle
11. Segment Minimum Altitude
12. Flyby Waypoint
13. Right Base TAA
14. Straight-in TAA
15. Left Base TAA
16. Hydrography
17. Scale Indication
18. Waypoint Identification
19. Indicated Airspeed Restriction

Example 3



1. Minimum Sector Altitude
2. Operational Note
3. VOR/DME NAVAID
4. NAVAID Identification and Information
5. Other Land Aerodrome
6. Obstacle
7. Missed Approach Track
8. Intersection Symbol
9. Inbound Final Approach Course
10. Intersection Identification and Definition
11. No Procedure Turn Required
12. Procedure Turn
13. Radial to Fix (or Bearing)
14. DME Arc
15. Segment Minimum Altitude
16. Lead Radial (or Bearing)
17. Initial Approach Fix
18. Scale Indication
19. Radial of Final Approach Course
20. DME Reference Facility
21. Hospital Heliport

Segment Standard Airspeeds

For GNSS based approach procedures (including RNP AR), when no airspeed restriction is charted within the plan view, the following standard airspeeds have been used in procedure development.

LPV, LP, LNAV/VNAV, LNAV & RNP AR Segment Standard Airspeeds

Segment	Indicated Airspeed by Aircraft Category (CAT)			
	A	B	C	D
Feeder / Transition, Initial, Intermediate	150	180	250	250
Final	90	120	140	165
Missed Approach	110	150	240	265

When, for a given segment, a different indicated airspeed is used in the design of the approach procedure, a speed restriction is charted.

Maximum Assessed Holding Indicated Airspeed

The size of the airspace that must be protected for a holding pattern is directly proportional to the speed of the aircraft. In order to limit the amount of airspace that must be protected, maximum holding speeds in knots indicated airspeed (KIAS) have been designated for specific altitude ranges. Unless otherwise noted on the chart or when a climb in the hold is specified, holding patterns have been assessed for the following airspeeds:

Maximum Assessed Holding Indicated Airspeeds for Holding Patterns

Altitude (ASL)	Maximum Assessed Holding Airspeed (KIAS)
At or below 6000 feet	200
Above 6000 feet up to and including 14000 feet	230
Above 14000 feet	265
Shuttle climbs (all altitudes)	310

When a climb in the hold (shuttle climb) procedure is specified on a chart, an additional protected area has been provided to allow for greater airspeeds in the climb for those aircraft requiring them. This extra protected area is assessed for a maximum of 310 KIAS, unless a maximum holding airspeed is noted on the chart, in which case that maximum assessed airspeed is applicable.

When in controlled airspace, pilots are to advise ATC immediately if airspeeds in excess of those specified become necessary for any reason, including turbulence, or if they are unable to accomplish any part of the holding procedure.

An airspeed notation associated with a hold or shuttle procedure does not alleviate the pilot's responsibility to comply with appropriate regulatory obligations.

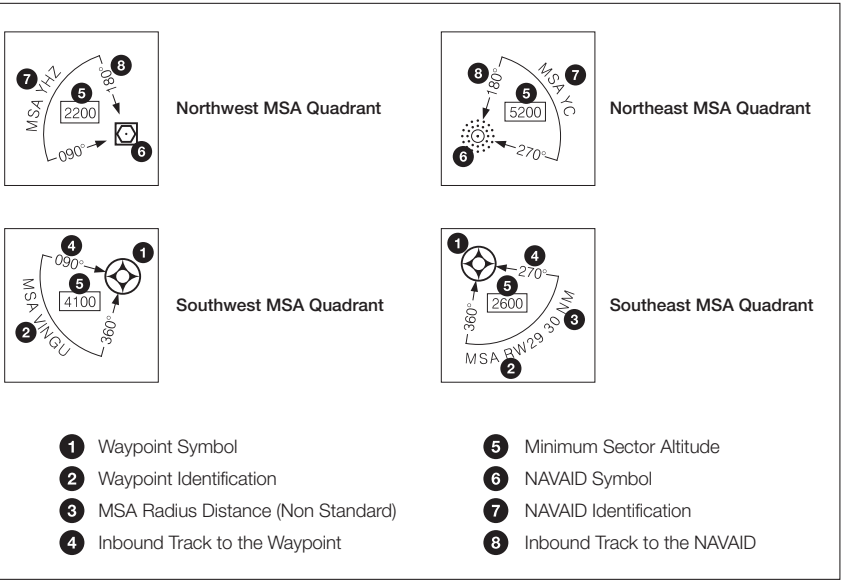
Minimum Sector Altitudes

Minimum Sector Altitudes (MSA) are shown as four separate quadrants; one in each corner of the chart's plan view. Each quadrant is delineated by standard cardinal bearings (090º, 180º, 270º, 360º) to the facility or waypoint.

The bearings are oriented to magnetic north in SDA and to true north in NDA. The MSA radius is 25 NM unless otherwise specified.

For RNAV approach procedures, the MSA altitudes are identical for all four quadrants. When Terminal Arrival Areas (TAA) are charted for an RNAV procedure, MSA altitudes will not be charted.

CYA, CYR and known blasting areas are not considered in the establishment of MSA altitudes. For this reason, it is the pilot's responsibility to remain clear of these areas as applicable.

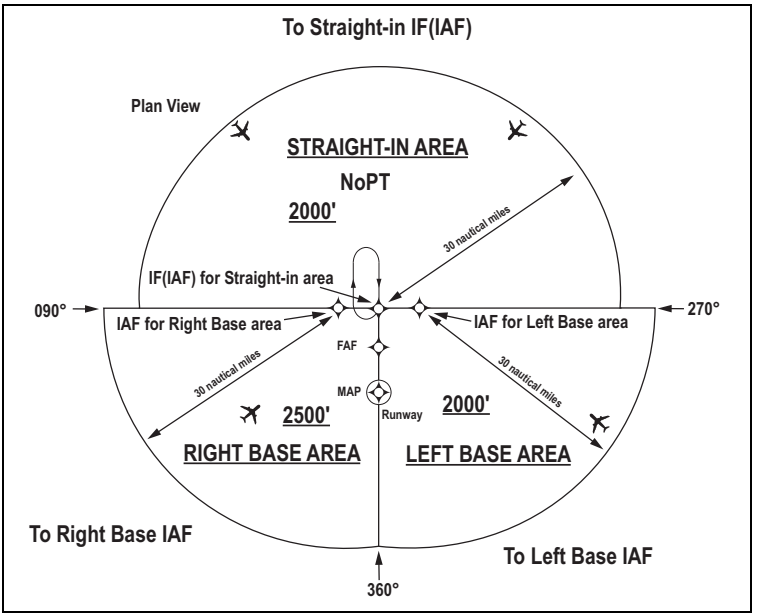


Terminal Arrival Areas

When an RNAV approach procedure meets certain criteria, Terminal Arrival Areas (TAA) may be charted instead of MSA. TAA may be used on an ILS or LOC approach when RNAV is the sole means for navigation to the IF. They are not normally used in areas of heavy concentration of air traffic. The objective of the TAA is to provide a seamless transition from the enroute structure to the terminal environment for arriving aircraft equipped with GNSS equipment.

The TAA consists of three main areas; the straight-in area, the left base area and the right base area. These areas are oriented within the chart's plan view according to the orientation of the approach procedure.

Default TAA Arrival Areas

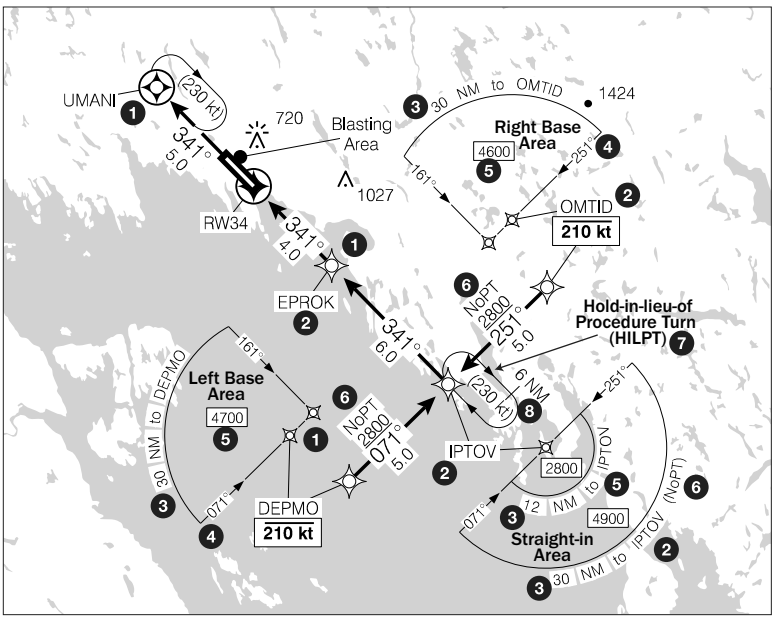


The straight-in area is a semicircle that extends to a 30 NM arc from the IAWPC/IWP. The flat side of the semicircle is determined by the extension of both initial approach segment tracks. This area may be further subdivided either by additional arcs or laterally by inbound bearings to the arc centre.

Both base areas are bounded by the flat side of the straight-in area, the final approach course of the approach and a 30 NM arc from the applicable IAWP. These areas may only be further subdivided by additional arcs.

Variations to these three main areas may be seen when the approach procedure is other than a standard 'T' shape approach. The procedure underlying the TAA is normally the "T" design (also called the "Basic T"). It incorporates two IAFs plus a dual purpose IF/IAF that functions as both an intermediate fix and an initial approach fix. The "T" configuration continues from the IF/IAF to the final approach fix (FAF) and then to the missed approach point (MAP). The two base leg IAFs are typically aligned in a straight-line perpendicular to the intermediate course connecting at the IF/IAF. A Hold-in-Lieu-of Procedure Turn (HILPT) is anchored at the IF/IAF and depicted using the holding pattern symbol. When the HILPT is necessary for course alignment and/or descent, the dual purpose IF/IAF serves as an IAF during the entry into the pattern. Following entry into the HILPT pattern and when flying a route or sector labeled "NoPT" (No Procedure Turn), the dual-purpose fix serves as an IF, marking the beginning of the Intermediate Segment.

TAA Legend



1. Waypoint Symbol
2. Waypoint Identification
3. TAA Radius Distance
4. Inbound Track to the Waypoint
5. TAA Minimum Sector Altitude
6. 'NoPT' (No Procedure Turn) required
7. Hold-in-lieu-of Procedure Turn (HILPT)
8. HILPT Speed/Distance limitations

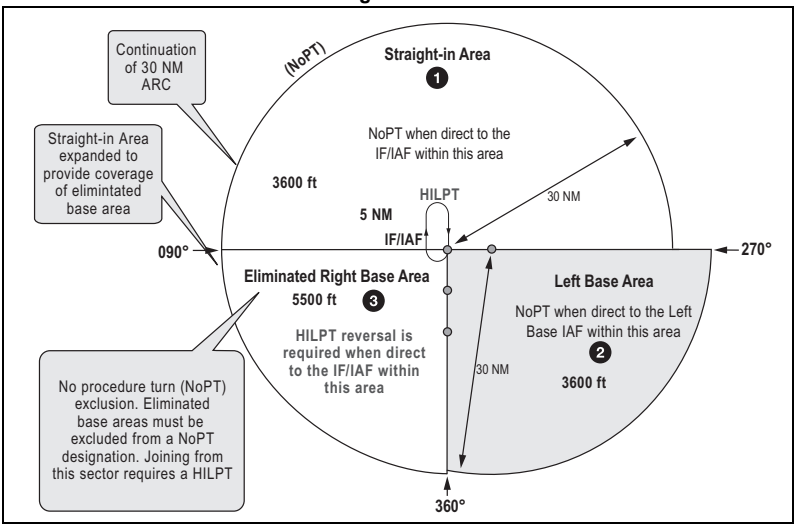
Minimum altitudes are charted for each area or subdivision. TAA altitudes may not account for CYA, CYR and known blasting areas. It is the pilot's responsibility to remain clear of these areas as applicable.

TAAs may be modified from the standard size and shape to accommodate operational or ATC requirements. Some areas may be eliminated, while the other areas are expanded (to achieve coverage of the eliminated area). The basic "T" design may be modified where required by terrain or ATC considerations. It can appear like an upside down "L," or an "I."

Where a TAA area is eliminated, aircraft may need to conduct a Hold-in-lieu-of Procedure Turn (HILPT). See the figure below:

1. Pilots operating within the TAA between the 090 bearing clockwise to the 270 bearing TO the IF/IAF are expected to proceed direct to the IF/IAF and not execute a course reversal manoeuvre 1.
2. No HILPT is required in the Left Base area (from 270 bearing clockwise to the 360 bearing TO the Left Base IAF) if proceeding direct to the Left Base IAF 2.
3. Aircraft operating in the area from 360 bearing clockwise to the 090 bearing TO the IF/IAF are expected to proceed direct to the IF/IAF and execute the HILPT course reversal in order to properly align the aircraft for entry onto the intermediate segment or to avoid an excessive descent rate 3.

TAA with Right Base Eliminated



Notes:

- If approaching with a TO bearing that is on a sector boundary, the pilot is expected to proceed in accordance with a 'NoPT'(No Procedure Turn) routing unless otherwise instructed by ATC.
- TAA's designed in earlier versions of criteria did not depict the 'NoPT' (No Procedure Turn) textual instruction.

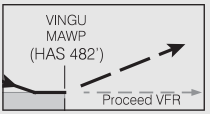
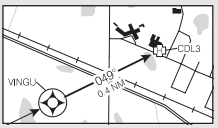
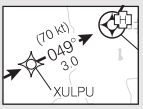
CAUTION: Earlier TAA designs were developed without the provision of a Hold-in-lieu-of Procedure Turn at the IF/IAF and will not depict it. When no HILPT is depicted, the associated holding pattern area has not been assessed. If required, any manoeuvring for course reversal must be accomplished within the Straight-in area, at or above the charted sector altitude.

Operational Notes

Only operational notes specifically required for the approach procedure are charted. Where possible, the content of an operational note is incorporated into the depiction of the procedure itself using methods described here as well as the other symbols listed within these CAP general pages.

The following is a list of possible operational notes that benefit from further explanation.

AUTHORIZATION REQUIRED	Special authorization from Transport Canada is required to conduct RNP AR approaches in Canada. For more information, refer to Transport Canada Advisory Circular 700-024.
LOC ONLY NO GLIDE PATH	Used on localizer based approach procedure charts when the runway being served has no associated glide path.
Altimeter setting	Used for sites when any portion of the day goes by without the local altimeter being available and no remote altimeter is provided.
Limited altimeter availability. Prior to flight, contact operator listed in CFS to ensure altimeter avbl on arrival.	Used when the capability to transmit the altimeter setting is limited to a portion of the day.
Baro VNAV not auth when using remote altimeter.	If a part time remote altimeter is provided for an approach that contains LNAV/VNAV minima, the LNAV/VNAV minima for Baro VNAV flight must not be authorized during the times when the remote altimeter would be used. Use of Baro VNAV is not permitted with a remote altimeter setting.
Baro VNAV not auth	LNAV/VNAV approach is not authorized for aircraft using Baro VNAV systems.
Aerodrome assessed for aircraft wingspans less than 79'. **Rwy 01/19 assessed for aircraft wingspans less than 118'.** **Circling to rwy 08 not auth due to visual surfaces not assessed.**	An Aerodrome Operator Attestation is required for a non-certified aerodrome when IAPs are published within the CAP or within the RCAP when the minima are lower than 500 feet. When an aerodrome's runways have been attested by the aerodrome operator, a note is used to communicate the maximum aircraft wingspan for which the runways have been assessed. This information advises the pilot flying the instrument approach procedure that the obstacle free airspace for the visual segment of the procedure meets recognized safety parameters for aircraft having a wingspan within the value specified. This advisory information ties the instrument procedure to the aerodrome and provides the pilot with information to make an informed decision regarding use of the procedure. If one of the runways at an aerodrome has not been attested, a note is used to not authorize circling to that runway.
3300 from "YXE" VOR to SASOD R-137 5.2 NM.	When graphic depiction of a transition creates an unacceptable amount of chart clutter, an operational note is used instead.
CATEGORY LNAV/VNAV (min. -37°C, max. 46°C) LNAV CIRCLING **AUTHORIZATION REQUIRED** (min. -20° C) (max. 54° C)	When LNAV/VNAV or RNP AR minima are included, a temperature limit is shown indicating the temperature range outside of which the procedure (LNAV/VNAV or RNP AR) is not authorized for uncompensated Baro VNAV systems.

RF Required	Some RNAV equipped aircraft are not capable of flying radius-to-fix type segments. For this reason, when procedures are developed using this segment type, the procedure (or a specific transition of the procedure) needs to be labelled as requiring RF capability.
Simultaneous approach auth with RWY 06L	Used when the approach procedure is authorized for use during simultaneous approach operations with all ILS and/or RNAV procedures to a given parallel runway.
Simultaneous approach auth with ILS RWY 05, RNAV (RNP) Y RWY 05	Used when the approach procedure is authorized for some simultaneous parallel approach operations, but *not* with all ILS and/or RNAV procedures to a given parallel runway.
LNAV procedure not auth during simultaneous operations	Simultaneous parallel operations are currently only supported by ILS and RNAV APV approach procedures. This note will be charted when RNAV (GNSS) procedures with LNAV minima published on the same chart with LPV or LNAV/VNAV minima is authorized for use during simultaneous approach operations.
Rwy 14/32 not assessed for circling procedures.	This note indicates that the given runway (and its threshold positions) has not been used in the development of the circling area and obstacle assessment. Despite this, circling within a given sector is not restricted unless specifically indicated with the use of the circling restriction diagram.
CAUTION: Procedure overlaps Points North Landing (CYNL) procedures.	Used when a procedure's initial, intermediate, final and/or missed approach segments overlap another procedure at a different aerodrome and is in uncontrolled (class G) airspace.
Procedure on the fringe of WAAS coverage. Occasional outages may occur.	When WAAS coverage for an aerodrome is expected to be marginal or unavailable, WAAS-based approach procedures will normally not be designed. However, at aerodromes on the fringe of WAAS coverage areas, for which LPV, LP or WAAS-based LNAV/VNAV lines of minima have been published, pilots will be alerted that occasional outages may occur by a note on the chart.
 	A grey line below the missed approach track in the profile view of the approach procedure chart and the operational note "Proceed VFR" indicate the point-in-space aspect of a helicopter approach procedure. When this is shown, arrival at the missed approach point must be followed by the pilot executing one of two options: • Proceed VFR to the landing site, or • Conduct the specified missed approach procedure. The bearing and distance from the MAP to the landing site will be shown on the corresponding visual approach chart. This bearing and distance information does not indicate a required flight path or the direction of approach to the landing site. It simply identifies the location of the landing site relative to the point where VFR flight is accepted by the pilot (i.e. the MAP).
	When required for helicopter only procedures, the final and missed approach airspeed limitation will be noted on the applicable segment of the plan view.
	For helicopter point-in-space approaches, the height of the MDA above the highest terrain/surface within a 5200' radius of the MAP is shown in the profile view at the MAP. This is known as the Height Above the Surface (HAS).

Constant Descent Angle

Constant Descent Angle (CDA) is a technique for flying the final approach segment of a non precision instrument approach procedure as a constant descent from an altitude at or above the final approach fix altitude. CDA information is provided as supporting information to the non precision approach procedure and it is the pilot's responsibility to determine how he/she intends to use the information in flight. Although the constant descent angle accounts for all minimum segment altitudes between the procedure's intermediate fix and the point of arriving at the MDA, it is still the pilot's responsibility to ensure the aircraft is always operated at or above any minimum altitude.

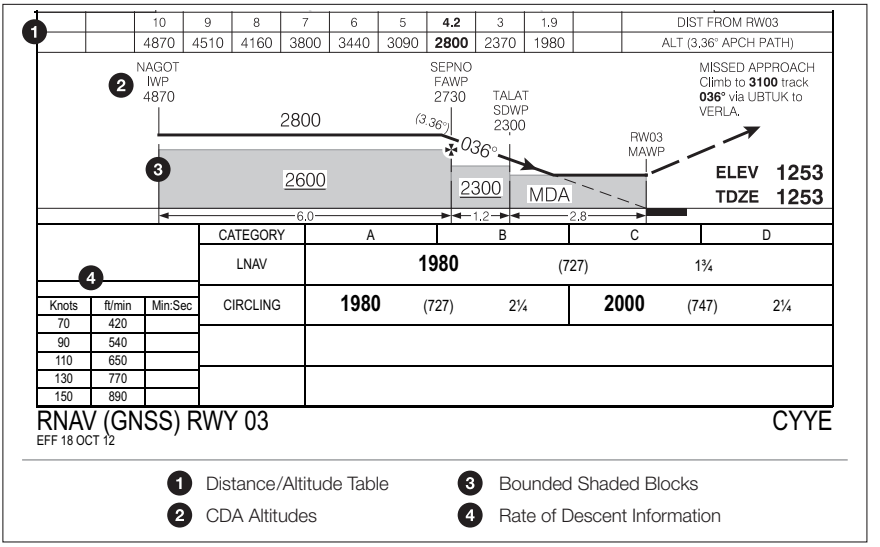
The constant descent angle is projected from:

- A point normally 50 feet above the aligned runway threshold for procedures meeting straight-in alignment,
- A point 50 feet above the aerodrome elevation abeam the earliest usable landing surface for circling only procedures which do not meet straight-in alignment, or
- The lowest MDA at the missed approach point for helicopter point-in-space approach procedures.

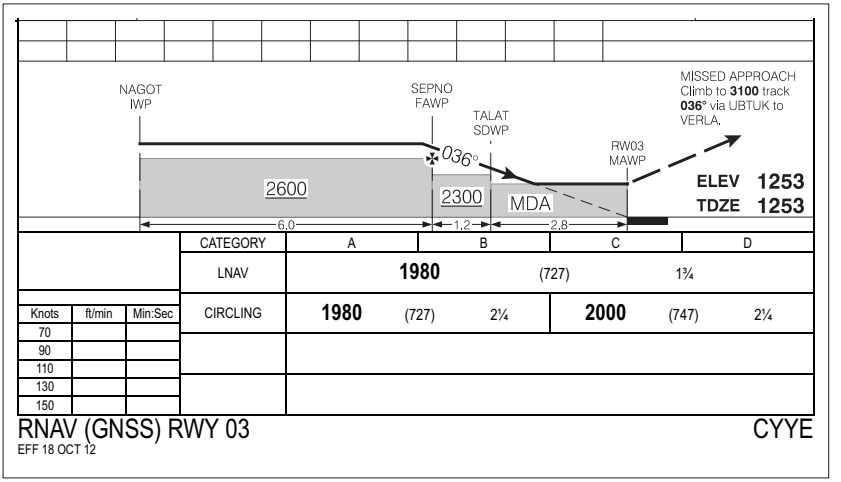
CDA depiction includes three elements:

- Distance/Altitude Table,
- CDA Altitudes at profile view fixes, and
- Rate of Descent Information

CDA information is charted for every non precision (non vertically guided) approach procedure that meets NAV CANADA's criteria for the depiction of CDA information. This includes non precision approach procedures that are combined with a precision approach procedure (i.e. NDB and LOC charted with an ILS). When a non precision approach procedure does not meet NAV CANADA's criteria for the depiction of CDA information, the CDA information is left uncharted.

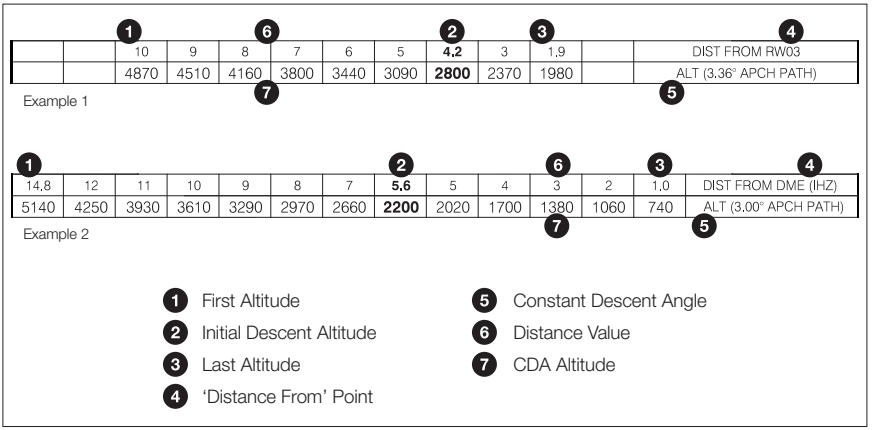


RNAV Approach – No CDA Information



Distance/Altitude Table

The distance/altitude table lists a series of distances from a specified location and the appropriate altitude that equates to the constant descent angle at that distance.



Within the distance/altitude table, the first altitude is provided for the distance located at:

- The IWP for RNAV approaches,
- The procedure turn distance for conventional procedures incorporating the use of a procedure turn, or
- The charted IF for conventional procedures that do not incorporate the use of a procedure turn.

The last altitude equates to the lowest non precision MDA and the distance at which that altitude is found on the constant descent angle.

The bold distance and altitude found within the table is the initial descent altitude. This is the distance at which the highest initial segment altitude is found on the constant descent angle. If this distance and altitude is found to be inside the FAF (i.e. between FAF and MAP), the altitude is increased to be the FAF crossing altitude rounded up to the next 100' altitude. The associated distance is then the point where this altitude is found on the constant descent angle.

All distances are referenced from the point indicated in the distance and altitude table. Normally this point is the MAP or MAWP applicable to the procedure. When the procedure incorporates the use of DME, the distance information will be DME distance from the identified DME source.

Except for the first, last and initial descent altitudes, all distances within the distance/altitude table are whole nautical mile distances at 1 NM intervals. If space is insufficient, the interval may be increased from 1 NM but will not be greater than 3 NM. Some whole NM values may be skipped if an adjacent value is within 0.5 NM.

The applicable constant descent angle for the approach procedure is specified in the distance and altitude table as well. The distance and altitude table is oriented from left to right or right to left in a similar fashion to the profile view.

CDA Altitudes at Profile View Fixes

All CDA altitudes are shown within the profile view as recommended altitudes (not underlined). Minimum segment altitudes are underlined and shown within bounded shaded blocks. The profile view of the approach procedure chart shows the initial descent altitude above the level flight track line prior to the descent point except when a procedure turn is depicted. When a procedure turn is depicted, the standard procedure turn profile view symbol is used and the altitude is underlined to indicate that it is a minimum altitude.

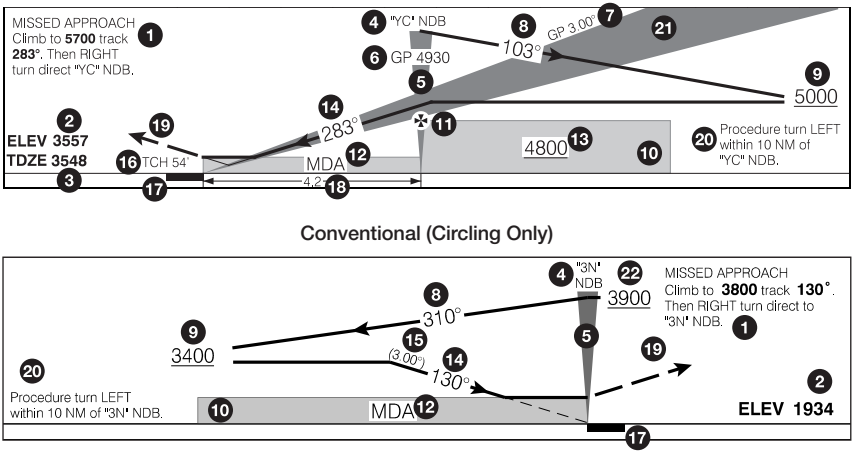
Other CDA altitudes are shown in the profile view for each charted fix. When a non precision approach procedure is charted with an ILS procedure, the ILS glide path check altitude serves as the CDA altitude for that fix.

Rate of Descent Information

When CDA is charted for a procedure, rate of descent information applicable to the constant descent angle is shown. This information is shown as feet/minute descent rates applicable to the given ground speed values.

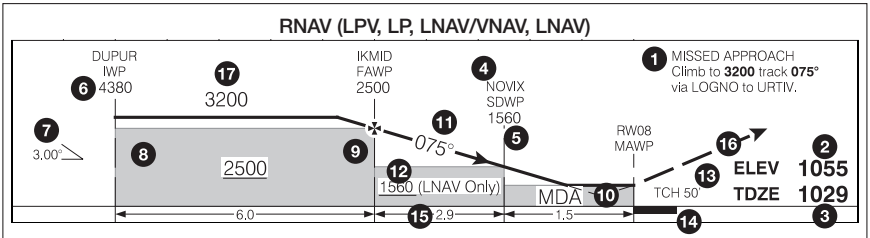
Profile View

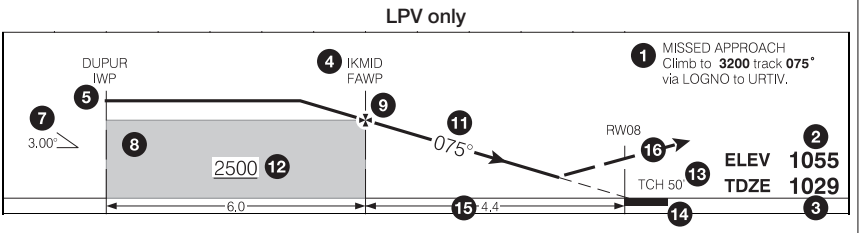
The profile view is oriented on the chart according to the predominant direction of the approach procedure.



1. Missed Approach Instruction
2. Aerodrome Elevation
3. Touch Down Zone Elevation
4. NAVAID Identification
5. NAVAID
6. Glide Path Check Altitude
7. Glide Path Angle
8. Procedure Outbound Track
9. Procedure Turn Minimum Altitude
10. Bounded Shaded Block
11. Final Approach Fix
12. Minimum Descent Altitude Indication
13. Segment Minimum Altitude
14. Procedure Inbound Track
15. Constant Descent Angle
16. Threshold Crossing Height
17. Aerodrome Profile
18. Segment Distance
19. Missed Approach Track
20. Procedure Turn Note
21. Glide Path
22. Procedure Turn Entry Altitude*

* When a Procedure Turn Entry Altitude is charted, the altitude must be maintained until crossing the procedure turn fix while proceeding outbound, or abeam the procedure turn fix and proceeding outbound.





1. Missed Approach Instruction
2. Aerodrome Elevation
3. Touch Down Zone Elevation
4. Waypoint Identification
5. Intersection or Waypoint Profile
6. CDA Altitude
7. Vertical Path Angle
8. Bounded Shaded Block
9. Final Approach Fix
10. Minimum Descent Altitude Indication
11. Procedure Inbound Track
12. Segment Minimum Altitude
13. Threshold Crossing Height
14. Aerodrome Profile
15. Segment Distance
16. Missed Approach Track
17. Initial Descent Altitude

RASS

When the approach procedure requires the use of either a full-time or part-time RASS, the procedure indicates one of the following.

Use CYND.	Used when the procedure minima has a RASS adjustment built-in. The altimeter setting from the identified site must be used.
◔ Use CYND.	Indicates that the identified altimeter setting source is available for limited hours of the day.
When using CYND add **160'**.	Used when a RASS adjustment factor is provided to the pilot for the times when the local altimeter setting is not available. When using the altimeter setting from the identified site, the pilot must add the RASS adjustment factor to the intermediate, final and missed approach segment minimum altitudes.
◔ When using CYND add **160'**.	Indicates that the identified altimeter setting source is available for limited hours of the day.
When using CYND add **160'**. Circling minima apply.	Indicates that the final segment descent gradient is exceeded during the application of the RASS adjustment. For this reason, only circling minima apply when using the RASS.

Minima

The minima box of the approach procedure chart lists one or more navigation type requirements and the associated minimum altitudes (MDA or DA), heights (HAA, HAT, HATh or DH) and advisory visibility for each aircraft category. In addition to statute miles, the advisory visibility is also provided as an RVR value when the straight-in runway has an associated RVR sensor and the advisory visibility is 1 SM or less.

Minima Box for ILS, LOC, NDB and Circling

(1) CATEGORY	A	B	C	D
(2) ILS (4)	(5) 3750	(6) (202)	(7) ½ RVR 26 (8)	
(2) LOC	(9) 4000	(10) (452)	1 RVR 50	
(2) NDB	4040	(492)	1 RVR 50	
(3) CIRCLING	*(11) 4060 (12) (503) (13) 1½		*4060 (503) 2	*4160 (603) 2

Minima Box for LPV, LNAV/VNAV, LNAV and Circling

(1) CATEGORY	A	B	C	D
(2) LPV (4)	(5) 1310	(15) (255)	(7) 1	
(2) LNAV/VNAV (min. -20°C, max. 54) (14)	(5) 1420	(15) (365)	1	
(2) LNAV	(9) 1420	(16) (365)	1	
(3) C CIRCLING	1560 (12) (505) (13) 1½		1560 (505) 2	1700 (645) 2

(17)

Minima Box for LPV only

(1) CATEGORY	A	B	C	D
(2) LPV (4)	(5) 1310	(15) (255)	(7) 1	

(1) Aircraft Categories
(2) Straight-in Minima
(3) Circling Minima
(4) Navigation Type
(5) Decision Altitude
(6) Decision Height
(7) Advisory Visibility (SM)
(8) Advisory Visibility (RVR)
(9) Minimum Descent Altitude
(10) Height Above Touchdown Zone
(11) Circling Restriction Reference
(12) Circling Minimum Descent Altitude
(13) Height Above Aerodrome
(14) Temperature Limitation (applicable to uncompensated Baro VNAV systems)
(15) Decision Height or Height Above Threshold
(16) Height Above Touchdown Zone or Height Above Threshold
(17) Expanded circing approach radii apply

Additional navigation requirements, beyond what is listed in the procedure identification, are indicated within the minima lines of the approach

- ILS/DME
- LOC/DME
- LNAV/VNAV
- LPV

An LP minima line indicates a WAAS based RNAV non precision (non vertically guided) approach procedure.

The circling procedure minima provided on an approach chart is always based on the non precision (non vertically guided) components of the chart (missed approach point, etc.). When a procedure chart does not include a non precision (non vertically guided) procedure, circling minima are not provided. Circling minima are always at or above the straight-in minima (MDA) of the non precision procedures depicted on the same chart. In rare situations, the circling minima may be lower than the charted LNAV/VNAV straight-in minima due to the application of procedure design criteria.

Circling approach protected areas developed prior to 2020 used the radius distances shown in the following table. Approaches using standard circling approach areas can be identified by the **absence** of the C symbol on the circling line of minima.

Standard Circling Approach Radii

Circling MDA in feet MSL	Approach Category and Circling Radius (NM)				
	CAT A	CAT B	CAT C	CAT D	CAT E
All Altitudes	1.3	1.5	1.7	2.3	4.5

Circling approach protected areas developed in 2020 or later use a radius distance based on the aircraft category as well as the altitude of the circling MDA, which accounts for increases to true airspeed with altitude. The following table provides radius values for each aircraft category within five altitude bands. Approaches using expanded circling approach areas can be identified by the **presence** of the C symbol on the circling line of minima.

Expanded Circling Approach Radii

Circling MDA in feet MSL	Approach Category and Circling Radius (NM)				
	CAT A	CAT B	CAT C	CAT D	CAT E
1000 or less	1.3	1.7	2.7	3.6	4.5
1001 - 3000	1.3	1.8	2.8	3.7	4.6
3001 - 5000	1.3	1.8	2.9	3.8	4.8
5001 - 7000	1.3	1.9	3.0	4.0	5.0
7001 - 9000	1.4	2.0	3.2	4.2	5.3

An aircraft is certified in only one approach category, and although a faster approach may require higher category minimums to be used, an aircraft cannot be flown to the minimums of a slower approach category. For example, a Category C aircraft cannot utilize Category B minima. If the requirement for a faster approach speed places the aircraft in a higher speed approach category, the minima for the appropriate higher category must be used. The aircraft categories are defined as follows. Category E is not charted for civil approach procedures.

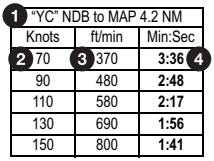
Category	A or COPTER	B	C	D	E
Speeds	up to 90 kt (includes all rotorcraft)	91 to 120 kt	121 to 140 kt	141 to 165 kt	above 165 kt

Only minima that are authorized to be flown as part of the approach procedure are shown. Absence of charted approach minima for a specific navigation type (i.e. LNAV/VNAV, circling, etc.) indicates the procedure type is not authorized to be flown.

When LNAV/VNAV or RNP AR minima are included, a temperature limit is shown. This indicates the temperature range outside of which the procedure (LNAV/VNAV or RNP AR) is not authorized for use when using an uncompensated Baro VNAV system.

Rate of Descent and Timing

When required, rate of descent and timing information is provided for the identified ground speed values.



1. Distance Statement
2. Ground Speed
3. Rate of Descent
4. Timing Information

Rate of descent information is provided as a feet/minute value when CDA information is charted for the approach procedure and corresponds to the constant descent angle charted for the approach.

Timing information is provided when the approach procedure contains a conventional MAP defined by distance from the FAF. The defined distance of the MAP from the FAF is translated into the number of minutes and seconds to be flown at the specified ground speed value.

Helicopter Only Approach Chart

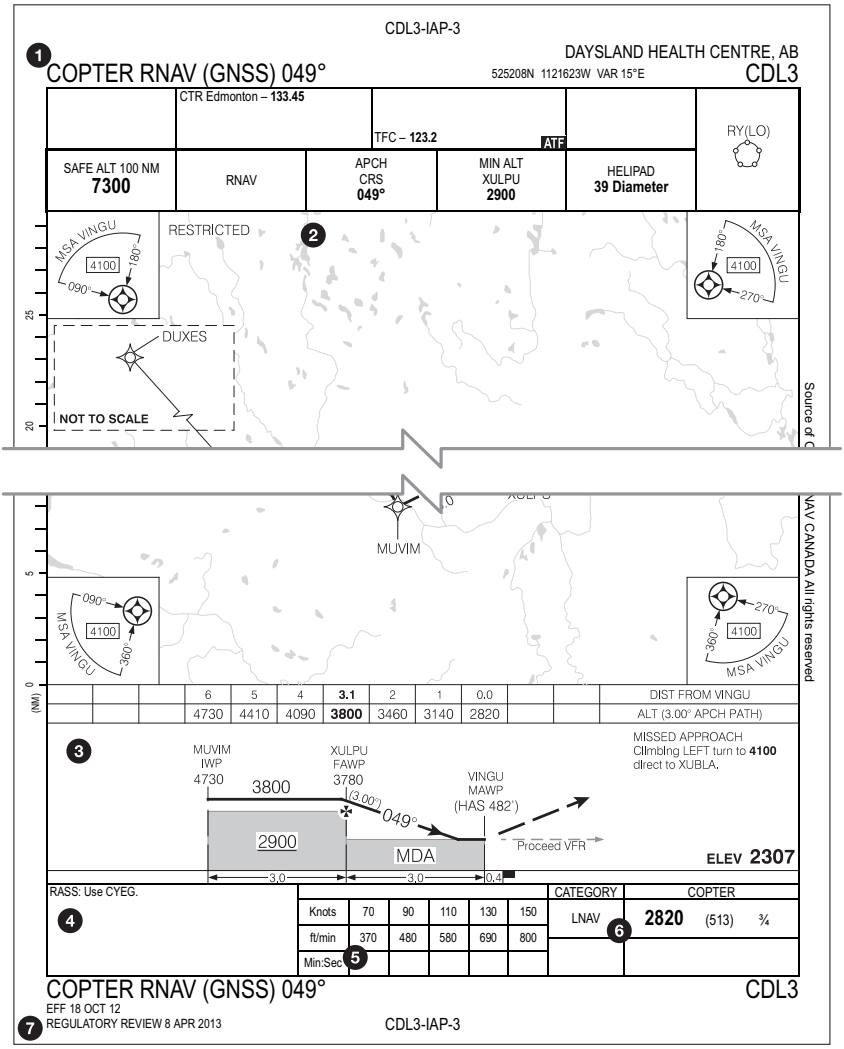
Although the helicopter only approach chart is similar to the generic approach chart, there are a number of differences.

1. The procedure identification of a helicopter only approach procedure is always prefixed with the term “COPTER”. When the procedure is not to a runway, the procedure identification incorporates the use of the final approach course instead of a runway number.

   i.e. COPTER RNAV (GNSS) 049º

2. The only approach category charted on the helicopter only approach chart is the “COPTER” category. This equates to category A.
3. Circling minima are not charted for helicopter only approach procedures.
4. Point-in-space helicopter approach procedures are identified by charting the “Proceed VFR” note associated with the grey line under the missed approach track in the profile view. The presence of this note indicates that once the pilot reaches the MAP, he/she must proceed VFR from the MAP to the landing area or conduct the specified missed approach procedure. The bearing and distance from the MAP to the landing site is shown on the accompanying visual approach chart. This bearing and distance information does not indicate a required flight path or the direction of approach to the landing site. It simply identifies the location of the landing site relative to the point where VFR flight is accepted by the pilot (i.e. the MAP).
5. Point-in-space helicopter approach procedures indicate a HAS value at the MAP in the profile view. The HAS is the height of the MDA above the highest terrain/surface within a 5,200' radius of the MAP.
6. For RNAV (GNSS) helicopter only approaches:
   - The standard indicated airspeed for feeder / transition, initial and intermediate segments is 140 knots.
   - When no maximum airspeed is charted on the final and missed approach segment, the maximum final and missed approach airspeed limitation is 90 knots. Final and missed approach maximum airspeed limitations are only charted when they are less than 90 knots. The missed approach airspeed limitation applies until the aircraft is established on the inbound course to the missed approach clearance limit.
   - Approach mode is to be armed 30 NM prior to the HRP/ARP.
7. All helicopter only approach procedures that do not have a MAP coincident with a runway threshold have a supplementary visual approach chart.

Copter Chart



1. Procedure Identification
2. Plan View
3. Profile View
4. RASS Information
5. Rate of Descent and Timing Information
6. Minima Information
7. Regulatory Review Date
   (Restricted Instrument Procedures Only)

Visual Approach Chart

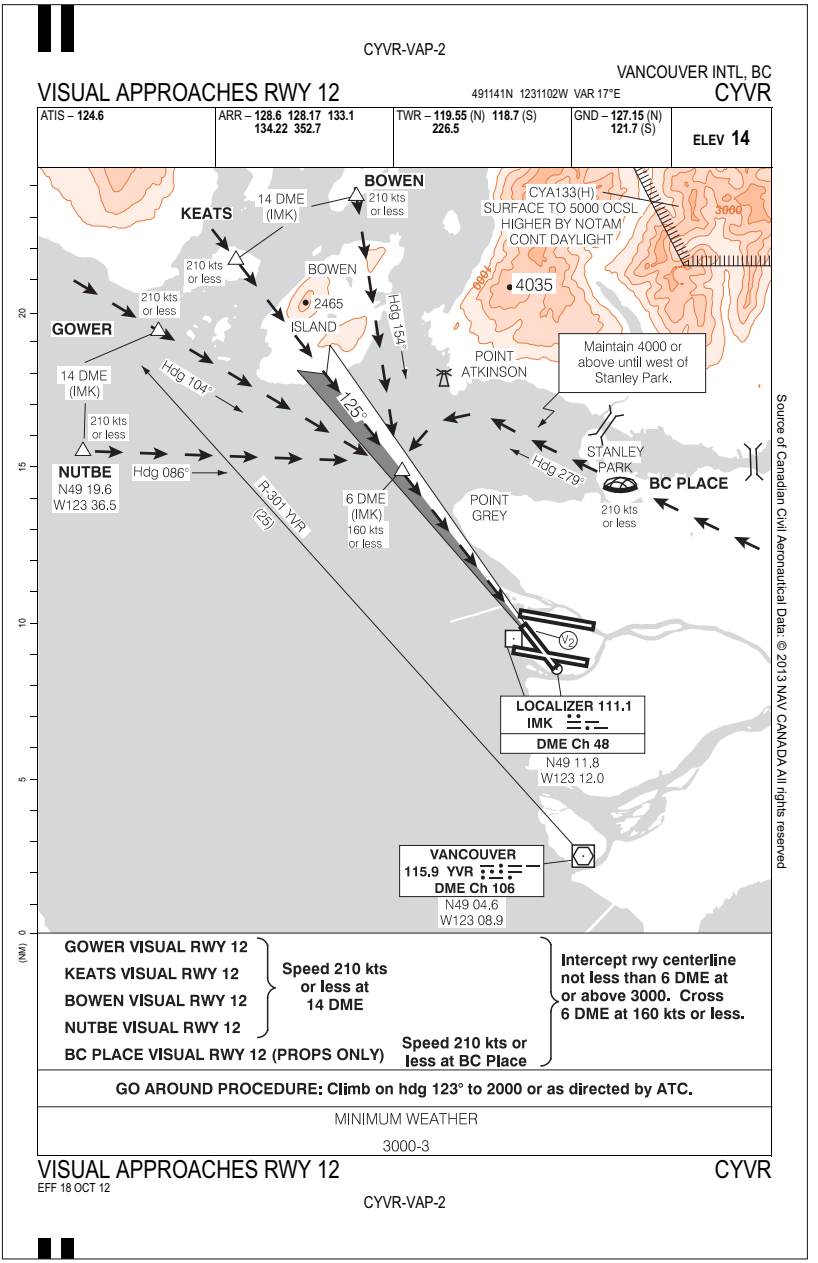
Visual approach charts are provided in two cases:

1. On request from air traffic control, and
2. As a supplement to helicopter only approaches where the MAP is not a runway threshold.

When a visual approach chart is provided for a specific runway, the applicable runway is identified in its procedure identification (i.e. VISUAL APPROACH RWY 26L). If the visual approach chart applies to the site in general and is not specific to a runway, it is identified simply as VISUAL APPROACH CHART.

In cases where the visual approach chart is provided as supplementary information to a helicopter only approach, the bearing and distance from the MAP to the landing site are shown. This bearing and distance information does not indicate a required flight path or the direction of approach to the landing site. It simply identifies the location of the landing site relative to the point where VFR flight is accepted by the pilot (i.e. the MAP).

Visual Approach Chart – ATC Request

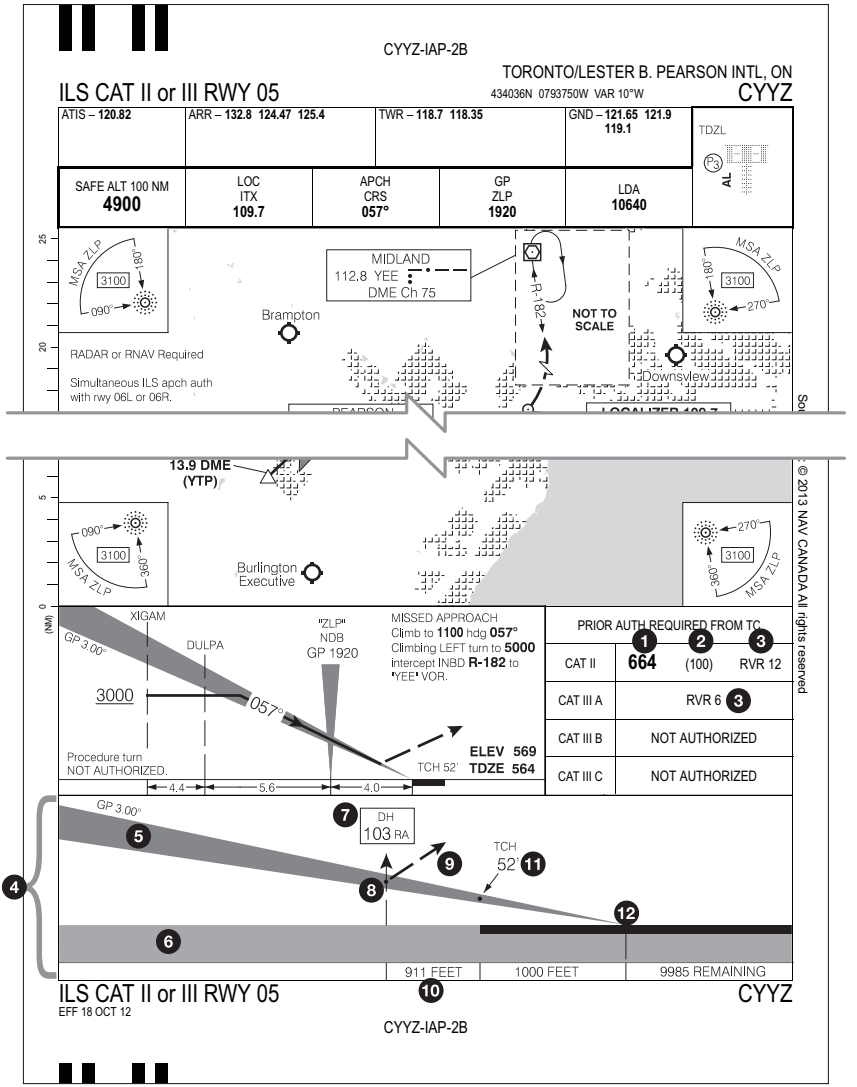


Visual Approach Chart – Supplement to Helicopter Only Approach

ILS CAT II or III Approach Chart

Most of the information charted on the ILS CAT II or III approach chart is similar to the generic approach chart. The main difference is found in the minima and terrain profile view. Operation to category II or category III minima is not authorized unless specific authorization has been obtained from Transport Canada or the equivalent military authority.

ILS CAT II or III Approach Chart



Legend for ILS CAT II or III Approach Chart

1. Decision Altitude
2. Decision Height
3. Runway Visual Range
4. Terrain Profile View
5. Glide Path
6. Terrain Profile
7. CAT II Decision Height based on Radio Altimeter
8. Decision Height Point
9. Missed Approach Track
10. Terrain Profile Distance
11. Threshold Crossing Height
12. Ground Point Interception

RNP AR Approach Chart

Special authorization from Transport Canada is required to conduct RNP AR approaches in Canada. For more information, refer to Transport Canada Advisory Circular 700-024.

RNP Value

RNP AR approaches are designed in Canada using standard RNP values for each segment. These standard RNP values are as follows:

Standard RNP Values for RNP AR Approaches

Segment	Standard RNP Value
Feeder / Transition	2.00
Initial	1.00
Intermediate	1.00
Final	0.30
Missed Approach	1.00

When circumstances require (i.e. obstacle environment, operational requirements, etc.) an RNP value other than the standard value may apply within the feeder / transition, initial or intermediate segment. In these cases, the RNP value is charted at the waypoint where the non-standard RNP value commences. The non-standard RNP value then continues until another non-standard value is specified or until a subsequent segment's standard RNP value is equal to or less than the previous segment's non-standard value.

Multiple RNP values may exist for the final segment and are represented with their applicable Decision Altitude (DA) in the approach minima section of the chart. Only the largest RNP value will be coded into the avionics database however pilots will have the ability to enter the lower values if their equipment permits.

When the missed approach segment requires an RNP value less than 1.00, the missed approach instruction includes the statement, “Missed approach requires RNP less than 1.00”.

Use of Multiple Intermediate Fixes (IF)

In certain situations, RNP AR approach procedures will be designed with multiple IFs. These waypoints will be identified on the approach chart as Intermediate Waypoints (IWPs). In these cases, the profile view will only show the flight track from the first common waypoint to the Missed Approach Waypoint (MAWP) and into the missed approach. Intermediate segment information will not be provided in the profile view but instead can be obtained from the plan view of the approach chart.

Validation of the Navigation Database for RNP AR Approaches

Validation of the navigation database for Canadian RNP AR approaches can be accomplished by referencing the data published in the *AIRAC Canada* document. *AIRAC Canada* can be obtained by contacting AIRAC@navcanada.ca.

In addition to this, an arrangement to receive procedure data through a licencing agreement can be made by contacting NAV CANADA Customer and Commercial Services, service@navcanada.ca.

RNP AR Approach Chart

CYYC-IAP-3D

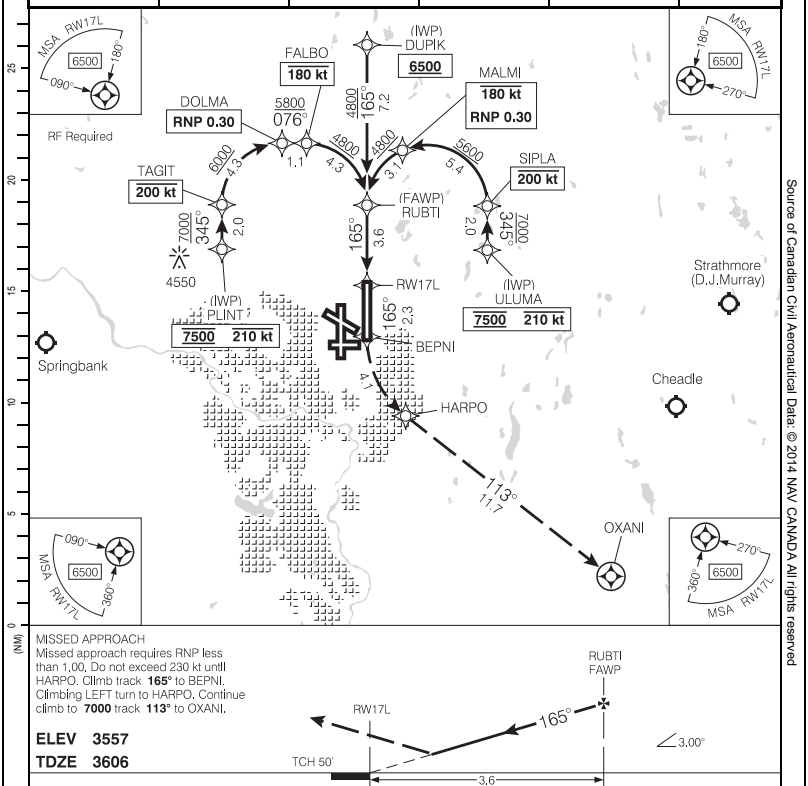
CALGARY INTL, AB

RNAV (RNP) X RWY 17L — CYYC

510721N 1140048W VAR 15°E

ATIS – 128.22	ARR – 126.52 125.9	TWR – 118.4 (W) 118.87 (E) 236.6	GND – 121.9 (W) 125.35 (E) 275.8

SAFE ALT 100 NM	RNAV	APCH CRS	MIN ALT RUBTI	LDA
13,800		165°	4800	14000



ELEV 3557
TDZE 3606

CATEGORY	A	B	C	D
RNP 0.17	3896	(290)	1	
RNP 0.30	3955	(349)	1¼	

AUTHORIZATION REQUIRED
(min. -26° C)
(max. 42° C)

RNAV (RNP) X RWY 17L — CYYC

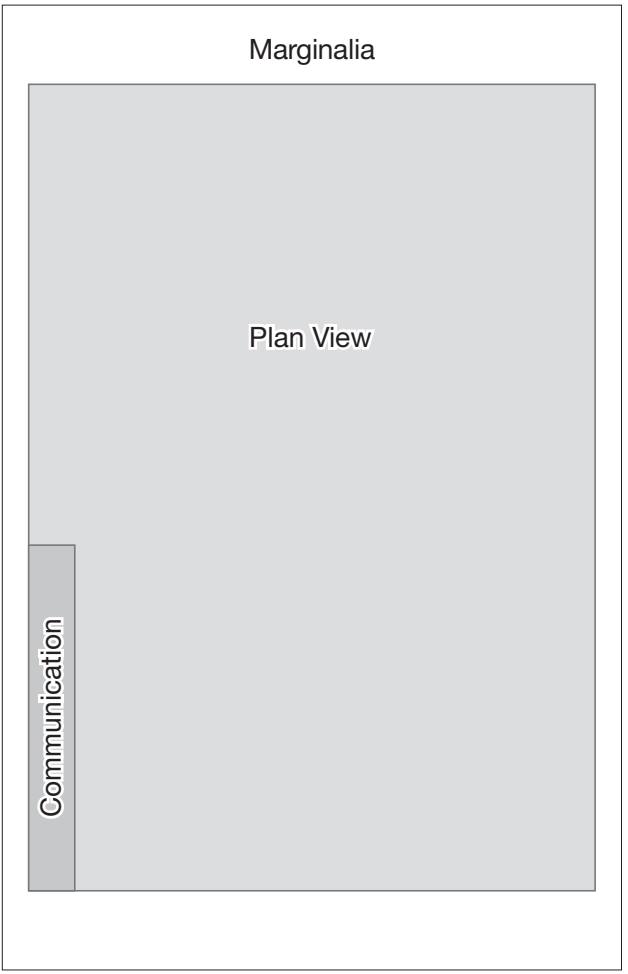
EFF 24 JUL 14

CYYC-IAP-3D

Standard Instrument Departures

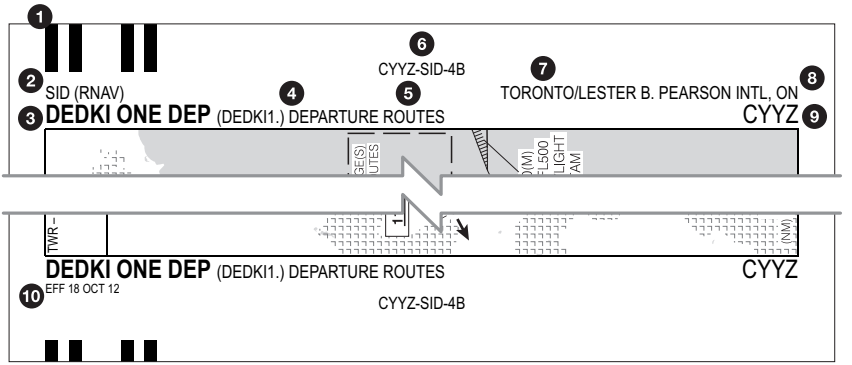
All graphics presented here are for explanatory purposes only and are not intended to be used for navigation.

Generic SID Chart



Marginalia

Information shown in the periphery of the SID chart includes the procedure identification, aerodrome identification, procedure effective date and chart number.



1. Volume Bar
2. Procedure Type
3. Plain Language Designator
4. Coded Designator
5. Chart Content Indication
6. Chart Number
7. Aerodrome Name
8. Province/Territory
9. Aerodrome Identifier
10. Effective Date

Procedure Identification

The procedure identification of a SID chart includes the primary procedure identification and the enroute transition identification. The information presented here also applies to DEPARTURE PROCEDURE (RNAV) charts.

Primary Procedure Identification

The primary procedure identification consists of the following three elements:

- Procedure type
- Plain language designator
- Coded designator

Procedure Type

The procedure type is shown as one of the following:

- SID (VECTOR) – identifies the procedure as a vector SID
- SID (PILOT NAV) – identifies the procedure as a pilot navigation SID
- SID (RNAV) – identifies the procedure as a PBN SID
- DEPARTURE PROCEDURE (RNAV) – identifies the procedure as a PBN departure procedure.

Plain Language Designator

The plain language designator is the spoken identification for the SID procedure. It consists of a basic indicator, validity number and the term “DEP”. The validity number is a number between 1 and 9 assigned sequentially after a qualifying procedure amendment. A qualifying procedure amendment is a change in a procedure track or other significant change affecting the database coding of the procedure.

- WINNIPEG TWO DEP
- BOMET SIX DEP

Coded Designator

The coded designator is the database/flight planning identification for the SID procedure. It consists of a coded version of the plain language basic indicator and the validity number.

- (CYWG2.)
- (BOMET6.)

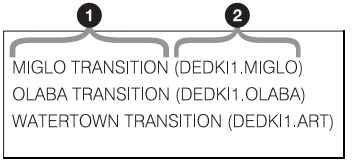
Similar to the procedure identification of approach procedures, the primary procedure identification for SID procedures may be suffixed with one or both of the following suffixes.

- (TRUE) Identifies the procedure as existing in NDA
- (DND) Identifies the procedure as a procedure designed and maintained by the Department of National Defence

Enroute Transition Identification

When a SID procedure includes transitions to the enroute airspace structure, the en route transitions are identified in similar fashion to the main SID procedure. The enroute transition identification includes a plain language designator and a coded designator. The plain language designator is the spoken identification for the en route transition and is usually derived from the name of the last point of the enroute transition. The coded designator is the database/flight planning identification for the enroute transition and is derived from both the primary procedure identification and the en route transition plain language designator.

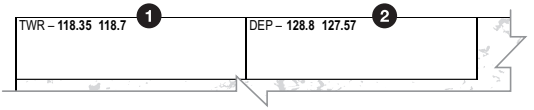
- MIVOK TRANSITION: (BOMET6.MIVOK)
- HIGH LEVEL TRANSITION: (ROVNA1.YOJ)



1 Plain Language Designator
2 Coded Designator

Communication

The communication information shown on a SID chart follows the principles explained for the instrument approach procedure charts. The tower system and departure system of the departure string apply to SID charts.



1 Tower System
2 Departure System

Plan View

The plan view of SID charts is charted to scale. The scale indication is usually shown in the bottom left corner of the chart plan view (with the chart oriented north up).

Often times the SID procedure is charted over multiple pages. This enables a clearer depiction of the procedure around complex runway environments and a larger scaled product. The first page of the SID procedure includes departure route descriptions and communication failure procedures.

Operational Notes

Similar principles as those explained for instrument approach procedure charts also exist for SID operational notes.

The following is a list of possible operational notes that benefit from further explanation.

Jet acft only	Indicates that the SID procedure is restricted for use by jet aircraft only. A jet aircraft is an aircraft powered by jet engines. This does not include propeller powered aircraft. (i.e. A320, B737, CL60)
Turbo prop acft only	Indicates that the SID procedure is restricted for use by turbo propeller aircraft only. A turbo propeller aircraft is an aircraft powered by one or more propellers that are driven by turbine engines. (i.e. DH8C, BE20, C441)
Non jet acft only	Indicates that the SID procedure is restricted for use by non jet aircraft only. A non jet aircraft is an aircraft powered by any engine type other than a jet engine. Turbo propeller and piston propeller aircraft fit within this group. (i.e. DH8C, SW4, PA31)
CAT H	Indicates that the SID procedure is restricted for use by helicopter aircraft only.
For use by GNSS or D/D/I equipped acft. Acft with selectable CDI must be set to 1 NM sensitivity. Acft without selectable CDI must use flight director. D/D/I or GNSS required.	When a SID procedure is authorized for use by D/D/I equipped aircraft, suitable operational procedures must be in place by D/D/I users to ensure the necessary navigation system performance can be achieved. This includes: • NOTAMs should be checked to verify the health of all critical DMEs when using a D/D/I navigation system; and • D/D/I aircraft must ensure the aircraft navigation system position is confirmed within 1,000 feet at the start point of the take-off roll.
For non GNSS equipped acft: YWT, YMS and YSO DMEs must be operational. **For non GNSS equipped acft: Departures from rwys 23, 24L & 24R, YWT and YTP DMEs must be operational.**	When a SID procedure is authorized for use by D/D/I equipped aircraft, a DME signal coverage assessment is undertaken to ensure a suitable DME coverage exists to support D/D/I navigation. When this assessment reveals critical DME facilities, they are listed. These DME facilities must be operational for the SID procedure to be used by D/D/I equipped aircraft. The critical DMEs are specified with respect to the site as a whole or based on departure from the specific runways listed.
***Holding @ LINNG 220 kt or less, 10 NM legs, FL220 or below**	When a hold procedure requires speed limitations, leg length limitations and/or altitude limitations, they are specified in an operational note. An asterisk is charted with the hold procedure symbol referring the user to the applicable operational note.

PBN SID

CYYZ-SID-4A

1 SID (RNAV) 3 TORONTO/LESTER B. PEARSON INTL, ON

2 **DEDKI ONE DEP** (DEDKI1.) CYYZ

Departure Route Description

Unless otherwise assigned by ATC:

All rwys: Maintain **5000**.

Rwy 05: Depart rwy 05, climb hdg **057°** to **1000**. Climbing LEFT turn hdg **047°** or as assigned. Expect radar vectors to ALKUT (or as assigned) then proceed via depicted route.

5 **Rwy 06L**: Requires a minimum climb gradient of **220** ft/NM to **1100**. Depart rwy 06L, climb hdg **057°** to **1000**. Continue climb hdg **057°** or as assigned. Expect radar vectors to ALKUT (or as assigned) then proceed via depicted route.

Rwy 06R: Requires a minimum climb gradient of **210** ft/NM to **1500**. Depart rwy 06R, climb hdg **057°** to **1000**. Continue climb hdg **057°** or as assigned. Expect radar vectors to ALKUT (or as assigned) then proceed via depicted route.

Rwy 15L: Requires a minimum climb gradient of **410** ft/NM to **3000**. Depart rwy 15L, climb hdg **147°** or as assigned. Expect radar vectors to DEDKI (or as assigned) then proceed via depicted route.

Rwy 15R: Requires a minimum climb gradient of **390** ft/NM to **3000**. Depart rwy 15R, climb hdg **147°** or as assigned. Expect radar vectors to DEDKI (or as assigned) then proceed via depicted route.

Rwy 23: Depart rwy 23, climb hdg **237°** to **1100**. Climbing RIGHT turn hdg **245°** or as assigned. Expect radar vectors to SAVUR (or as assigned) then proceed via depicted route.

Rwys 24L & 24R: Depart rwy 24L/R, climb hdg **237°** to **1000**. Climbing LEFT turn hdg **235°** or as assigned. Expect radar vectors to SAVUR (or as assigned) then proceed via depicted route.

Rwy 33L: Requires a minimum climb gradient of **250** ft/NM to **900**. Depart rwy 33L, climb hdg **327°** to **1100**. Climbing RIGHT turn hdg **345°** or as assigned. Expect radar vectors to VIVET (or as assigned) then proceed via depicted route.

Rwy 33R: Depart rwy 33R, climb hdg **327°** to **1100**. Climbing RIGHT turn hdg **345°** or as assigned. Expect radar vectors to VIVET (or as assigned) then proceed via depicted route.

DEPARTURE CLIMB RATE V/V (FPM)

6

GROUND SPEED	90	120	140	160	180	200	250	300
210 FT/NM	320	420	490	560	630	700	880	1050
220 FT/NM	330	440	520	590	660	740	920	1100
250 FT/NM	380	500	590	670	750	840	1050	1250
390 FT/NM	590	780	910	1040	1170	1300	1630	1950
410 FT/NM	620	820	960	1100	1230	1370	1710	2050

7

MIGLO TRANSITION: **(DEDKI1.MIGLO)**
OLABA TRANSITION: **(DEDKI1.OLABA)**
WATERTOWN TRANSITION: **(DEDKI1.ART)**

8

Communication Failure

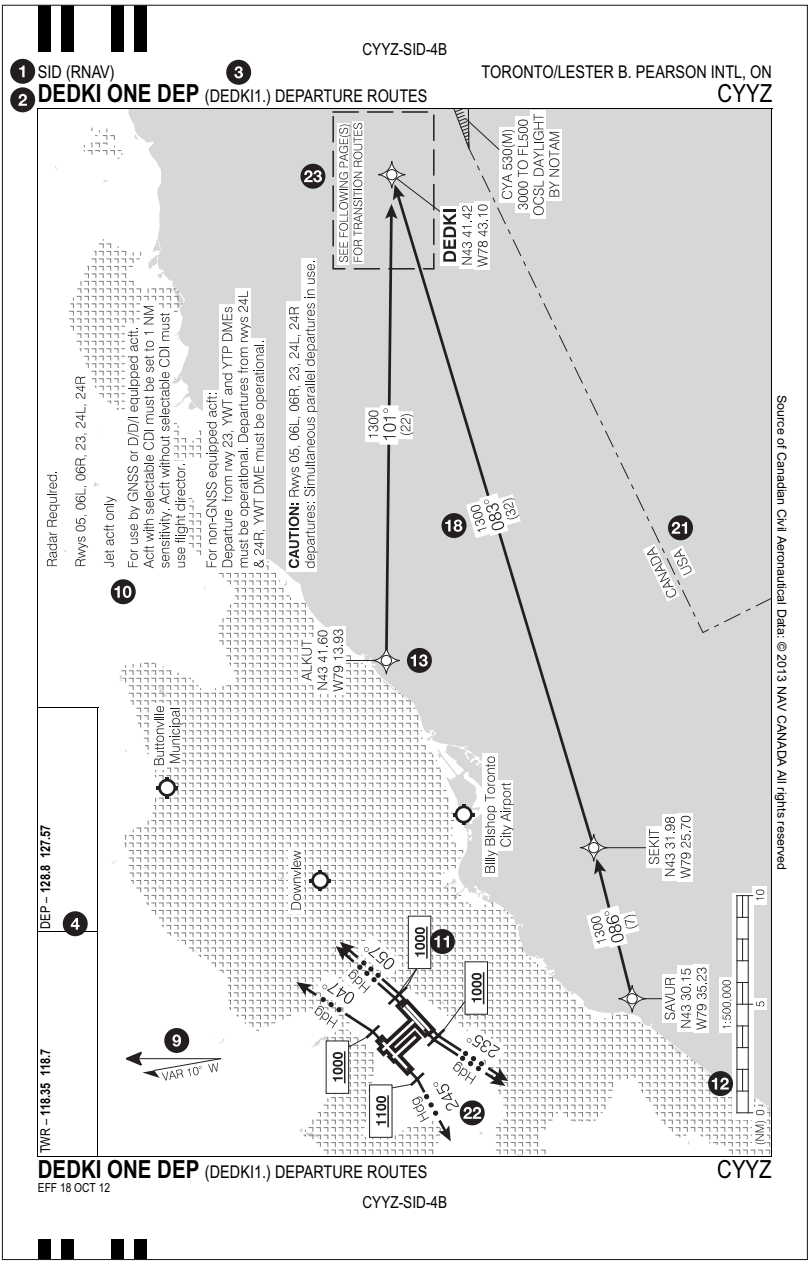
On recognition of failure 20 minutes or less after take-off and in IFR weather conditions proceed as follows:

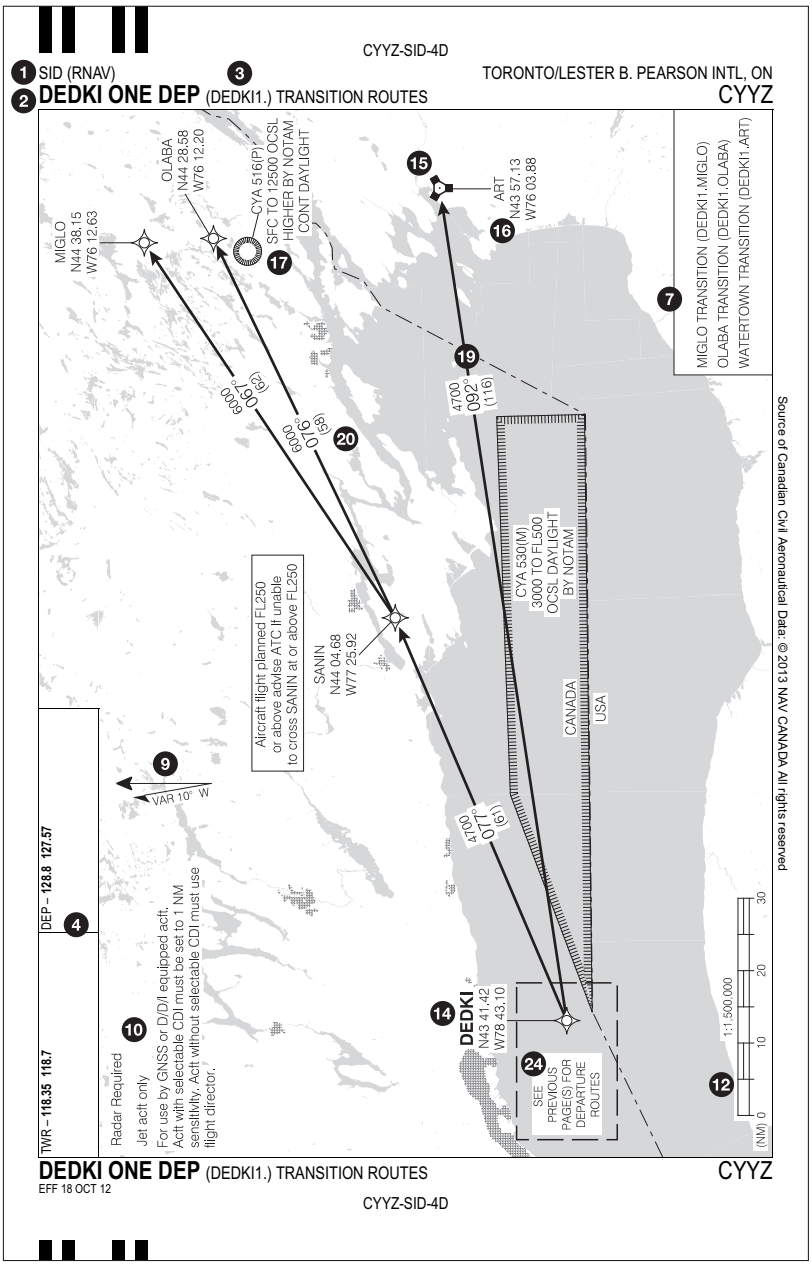
1. Select transponder code 7600;
2. Beyond 10 NM from CYYZ proceed directly on course;
3. Do not climb above last assigned altitude for 5 minutes after recognition of failure, then;
4. Climb to flight planned altitude.

DEDKI ONE DEP (DEDKI1.) CYYZ

EFF 18 OCT 12

CYYZ-SID-4A





Pilot NAV SID

CYYJ-SID-2A

1 SID (PILOT NAV) 3 VICTORIA INTL, BC

2 **MILL BAY SEVEN DEP** (MB7.) CYYJ

Departure Route Description

5 **All rwys**: Contact Victoria Terminal after passing **1000** unless instructed otherwise by ATC. Maintain **4000** or as assigned.

Rwy 27 – ½: Requires a minimum climb gradient of **380** ft/NM to **3200**. Climb direct to "MB" NDB.

Rwy 31 – ½: Restricted to Cat A & B acft only. Requires a minimum climb gradient of **340** ft/NM to **3100**. Climb hdg **315°** to **740**. Then climbing LEFT turn direct to "MB" NDB.

DEPARTURE CLIMB RATE V/V (FPM)

6

GROUND SPEED	90	120	140	160	180	200	250	300
340 FT/NM	510	680	800	910	1020	1140	1420	1700
380 FT/NM	570	760	890	1020	1140	1270	1590	1900

7 **DISCO TRANSITION (MB7.DISCO)**: Cross "MB" NDB. Then climbing LEFT turn hdg **102°**, intercept OBD "YYJ" **R-131** to DISCO.

VANCOUVER TRANSITION (MB7.YVR): Cross "MB" NDB. Then climbing RIGHT turn, intercept OBD track **304°** from "MB" NDB. Cross "YVR" **R-205**, turn RIGHT intercept INBD **R-210** to "YVR" VOR.

NOTE: Refer to noise abatement procedures for additional requirements.

8

Communication Failure

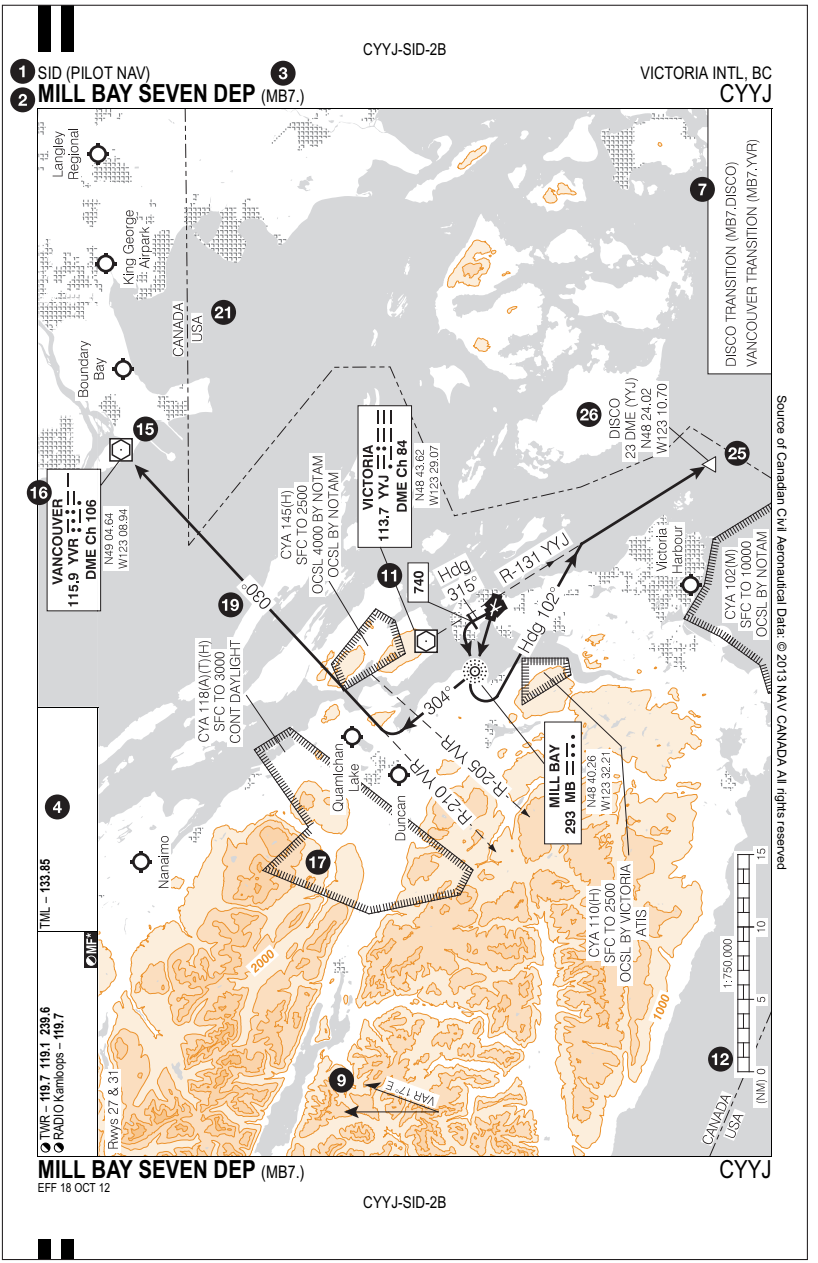
On recognition of failure proceed as follows:

1. Select transponder code 7600;
2. Maintain last assigned altitude until 10 minutes after take-off, then;
3. Climb to flight planned altitude.

MILL BAY SEVEN DEP (MB7.) CYYJ

EFF 18 OCT 12

CYYJ-SID-2A



Legend for Standard Instrument Departure Charts

1. Procedure Type
2. Plain Language Designator
3. Coded Designator
4. Communication Information
5. Departure Route Description
6. Departure Climb Rate Table
7. En Route Transition Identification
8. Communication Failure Procedure
9. Magnetic Variation
10. Operational Notes
11. Operational Altitude Restriction
12. Scale Indication
13. Waypoint Symbol
14. Waypoint Identification
15. NAVAID Symbol
16. NAVAID Identification
17. Special Use Airspace
18. MOCA
19. Segment Track
20. Segment Distance
21. International Boundary
22. Radar Vector Expectation
23. Following Page Reference
24. Previous Page Reference
25. Intersection Symbol
26. Intersection Identification

Helicopter Only Departure/SID Chart

Although the helicopter only departure / SID chart is similar to the generic SID chart, there are a number of differences.

1. Helicopter departure / SID procedures are Point-in-Space (PinS) 'proceed VFR' procedures. No obstacle protection is provided from the point of departure to the IDF. The pilot must cross the IDF at or above the minimum crossing altitude specified and must remain in VFR conditions to see and avoid obstacles until crossing the IDF. After passing the IDF, instrument departure criteria provide obstacle protection and flight in IFR conditions may commence.
2. A chart inset is included on the graphic page of the procedure providing better detail for navigating between the point of departure and the IDF.

Copter Departure/SID Chart

CBC7-SID-1A

SID (RNAV) VANCOUVER/HARBOUR (PUBLIC), VANCOUVER, BC

DUNIP ONE DEP (DUNIP1.) CBC7

Departure Route Description

1 Proceed VFR from helipad to ROBLU (IDF). Cross ROBLU at or above **700**.

From ROBLU: Requires a minimum climb gradient of **460** ft/NM to **4000**. Climb to **4000** track **237°** to LIBUS, then track **149°** to DUNIP, then track **149°** to "YVR" VOR.

DEPARTURE CLIMB RATE V/V (FPM)

GROUND SPEED	50	60	70	80	90	120	140
460 FT/NM	390	460	540	620	690	920	1080

Communication Failure

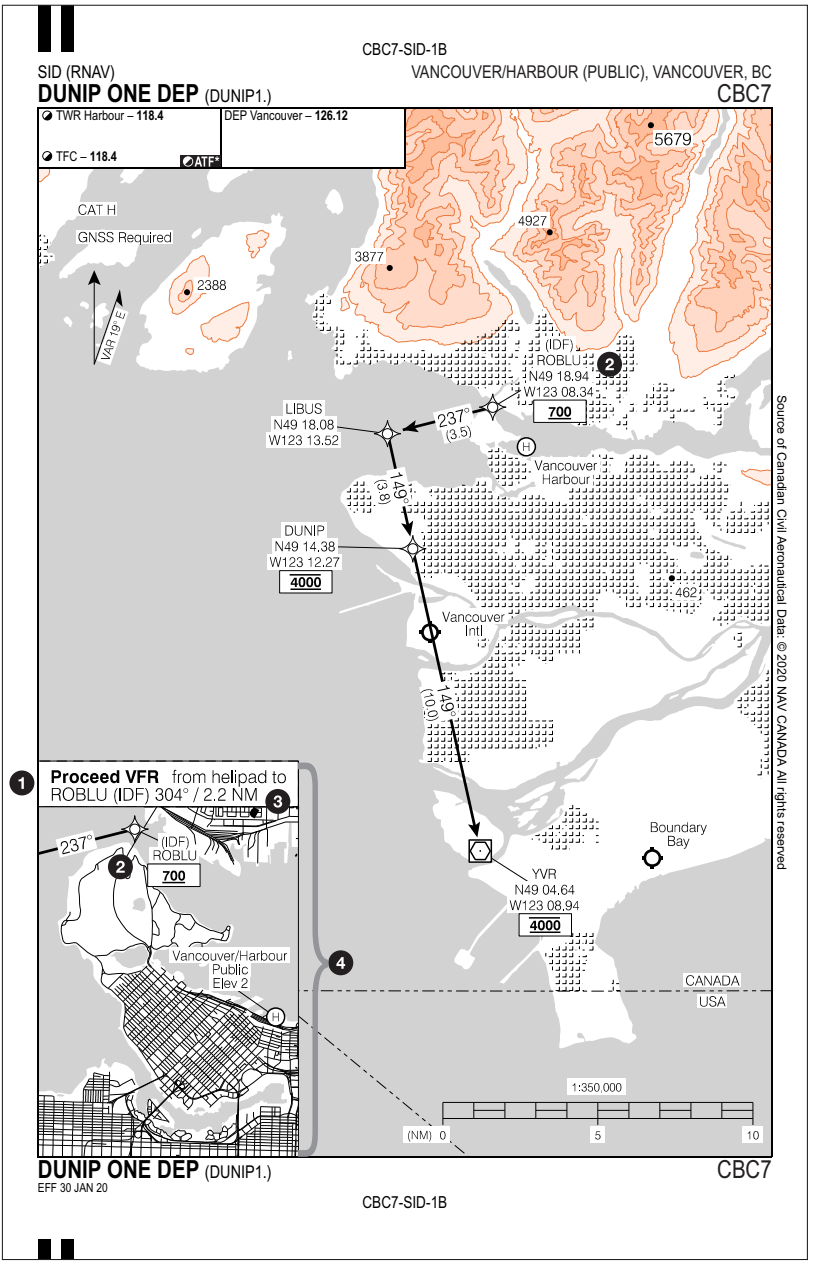
On recogniton of failure and in IMC proceed as follows:

1. Select transponder code 7600;
2. Climb to **4000** and proceed via SID to "YVR" VOR;
3. Maintain **4000**;
4. Proceed via flight planned route.

DUNIP ONE DEP (DUNIP1.) CBC7

EFF 30 JAN 20

CBC7-SID-1A



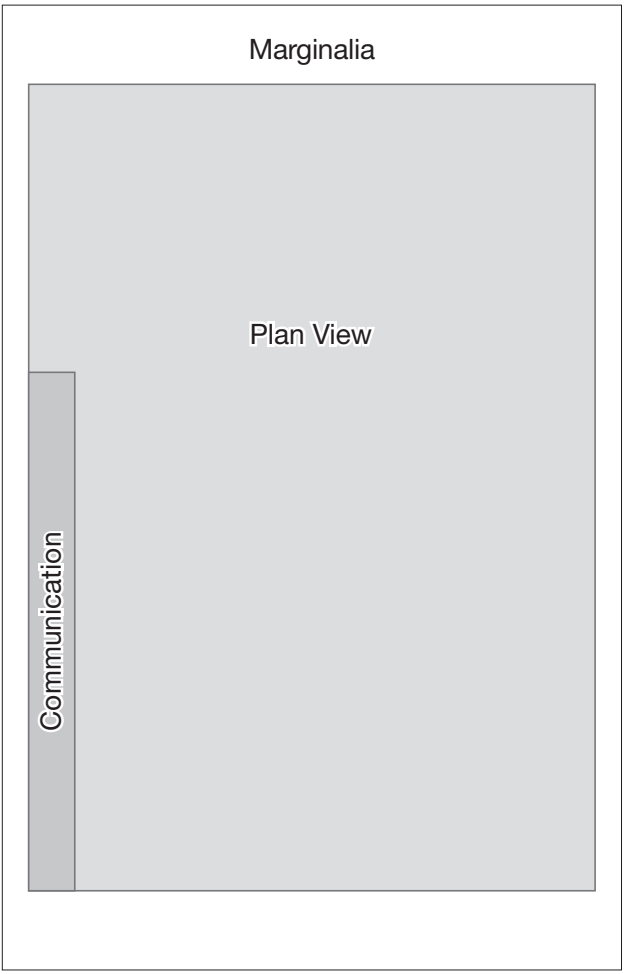
Legend for Copter Departure/SID Chart

1. "Proceed VFR" Procedure
2. Initial Departure Fix (IDF)
3. Bearing and distance of the IDF from the point of departure
4. Inset

Standard Terminal Arrivals

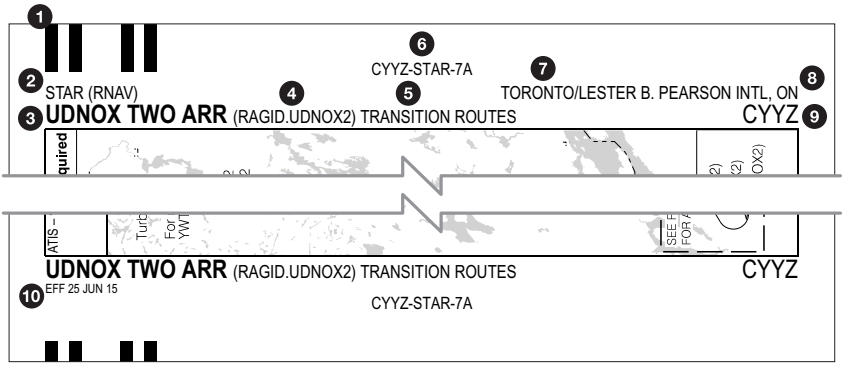
All graphics presented here are for explanatory purposes only and are not intended to be used for navigation.

Generic STAR Chart



Marginalia

Information shown in the periphery of the STAR chart includes the procedure identification, aerodrome identification, procedure effective date and chart number.



1. Volume Bar
2. Procedure Type
3. Plain Language Designator
4. Coded Designator
5. Chart Content Indication
6. Chart Number
7. Aerodrome Name
8. Province/Territory
9. Aerodrome Identifier
10. Effective Date

Procedure Identification

The procedure identification of a STAR chart includes the primary procedure identification and the enroute transition identification.

Primary Procedure Identification

The primary procedure identification consists of the following three elements:

- Procedure type
- Plain language designator
- Coded designator

Procedure Type

The procedure type is shown as one of the following:

- STAR – identifies the procedure as a conventional STAR
- STAR (RNAV) – identifies the procedure as a PBN STAR

Plain Language Designator

The plain language designator is the spoken identification for the STAR procedure. It consists of a basic indicator, validity number and the term “ARR”. The validity number is a number between 1 and 9 assigned sequentially after a qualifying procedure amendment. A qualifying procedure amendment is a change in a procedure track or other significant change affecting the database coding of the procedure.

- HOPE NINE ARR
- UDNOX ONE ARR

Coded Designator

The coded designator is the database/flight planning identification for the STAR procedure. It consists of the identification of the first significant point of the STAR procedure’s common section followed by a coded version of the plain language basic indicator and the validity number.

- (HE.HE9)
- (RAGID.UDNOX1)

Similar to the procedure identifications for approach procedures, the primary procedure identification for STAR procedures may be suffixed with one or both of the following suffixes.

- “(TRUE)” Identifies the procedure as existing in NDA
- “(DND)” Identifies the procedure as a procedure designed and maintained by the Department of National Defence

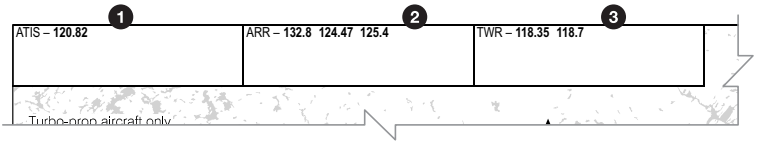
Enroute Transition Identification

When a STAR procedure includes transitions from the enroute airspace structure, the enroute transitions are identified in similar fashion to the main STAR procedure. The enroute transition identification includes a plain language designator and a coded designator. The plain language designator is the spoken identification for the enroute transition and is usually derived from the name of the first point of the enroute transition. The coded designator is the database/flight planning identification for the enroute transition and is derived from both the enroute transition plain language designator and the primary procedure identification.

- PHILIPSBURG TRANSITION: (PSB.LLEEO2)
- METOW TRANSITION: (METOW.GRIZZ3)
- TORNI TRANSITION: (TORNI.UDNOX1)

Communication

The communication information shown on a STAR chart follows the principles explained for the instrument approach procedure charts. The automated weather system, arrival system and tower system of the arrival string apply to STAR charts.



1. Automated Weather System
2. Arrival System
3. Tower System

Plan View

The plan view of STAR procedures is charted to scale. The scale indication is usually shown in the bottom left corner of the chart plan view (with the chart oriented north up).

Often times the STAR procedure is charted over multiple pages. This enables a clearer depiction of the procedure around complex runway environments and a larger scaled product.

Operational Notes

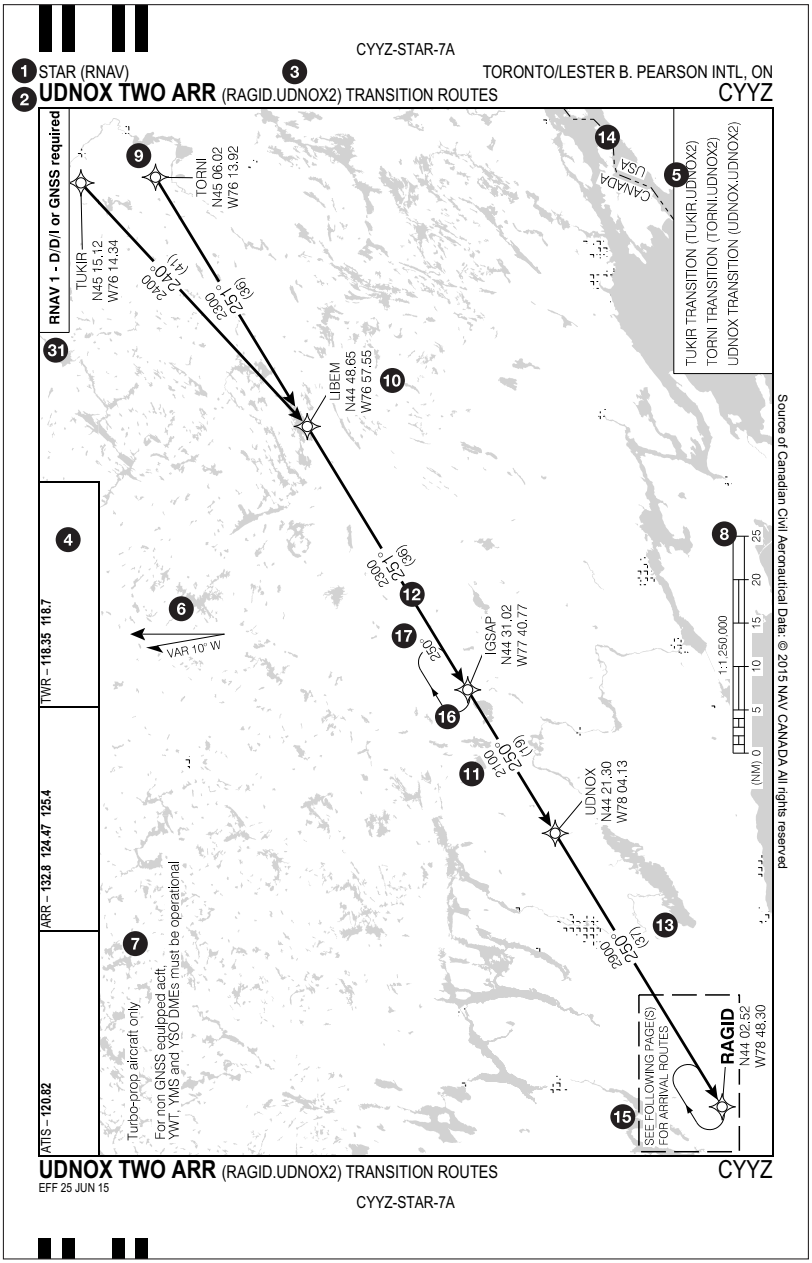
Similar principles as those explained for instrument approach procedure charts also exist for STAR operational notes.

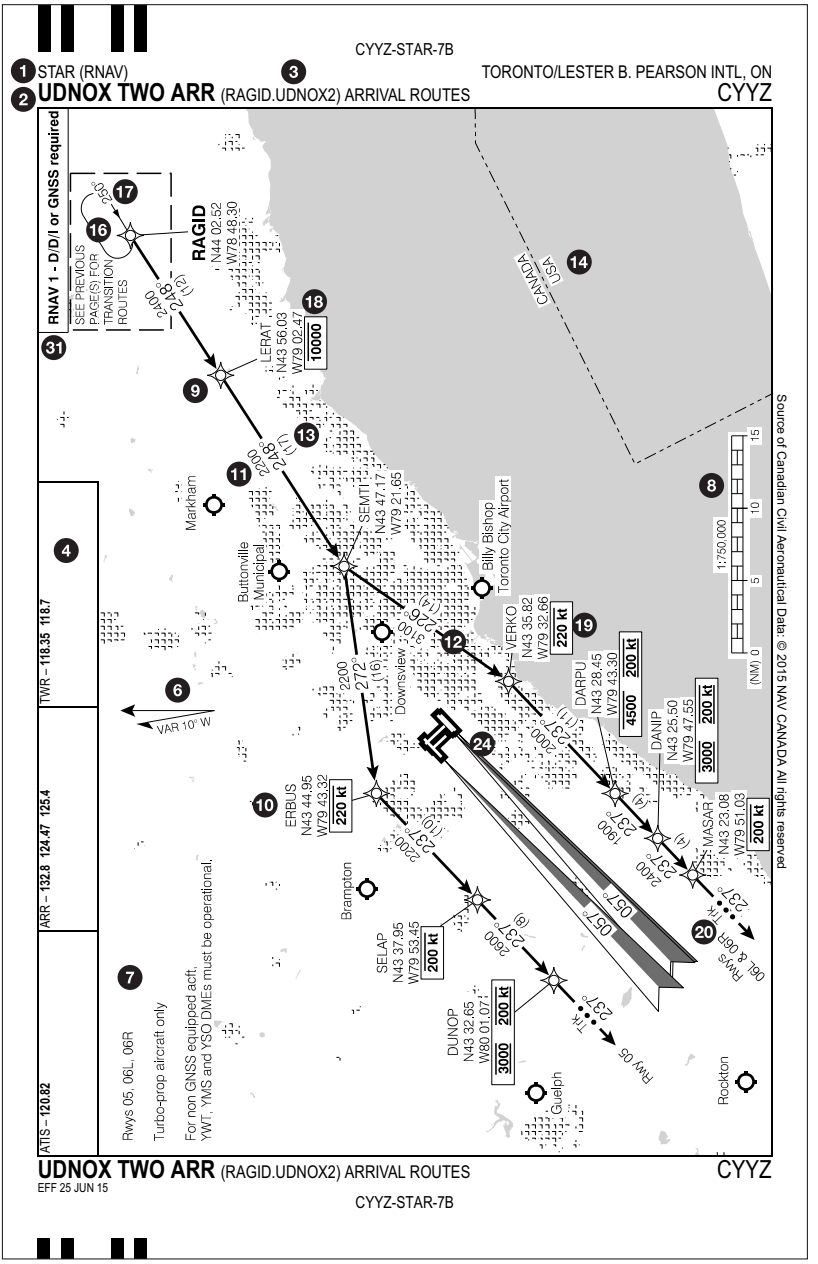
The following is a list of possible operational notes that benefit from further explanation.

RNP 1 **RNAV 1**	For PBN STAR procedures, PBN requirements will be listed within a PBN requirements box. This includes items such as the navigation specification, sensor limitations and any functional requirements not mandatory within the basic navigation specification itself. For more information on RNP 1 and RNAV 1, see Transport Canada Advisory Circulars 700-025 (RNP 1) and 700-019 (RNAV 1).
Jet acft only	Indicates that the STAR procedure is restricted for use by jet aircraft only. A jet aircraft is an aircraft powered by jet engines. This does not include propeller powered aircraft. (i.e. A320, B737, CL60)
Turbo prop acft only	Indicates that the STAR procedure is restricted for use by turbo propeller aircraft only. A turbo propeller aircraft is an aircraft powered by one or more propellers that are driven by turbine engines. (i.e. DH8C, BE20, C441)
Non jet acft only	Indicates that the STAR procedure is restricted for use by non jet aircraft only. A non jet aircraft is an aircraft powered by any engine type other than a jet engine. Turbo propeller and piston propeller aircraft fit within this group. (i.e. DH8C, SW4, PA31)
CAT H	Indicates that the STAR procedure is restricted for use by helicopter aircraft only.

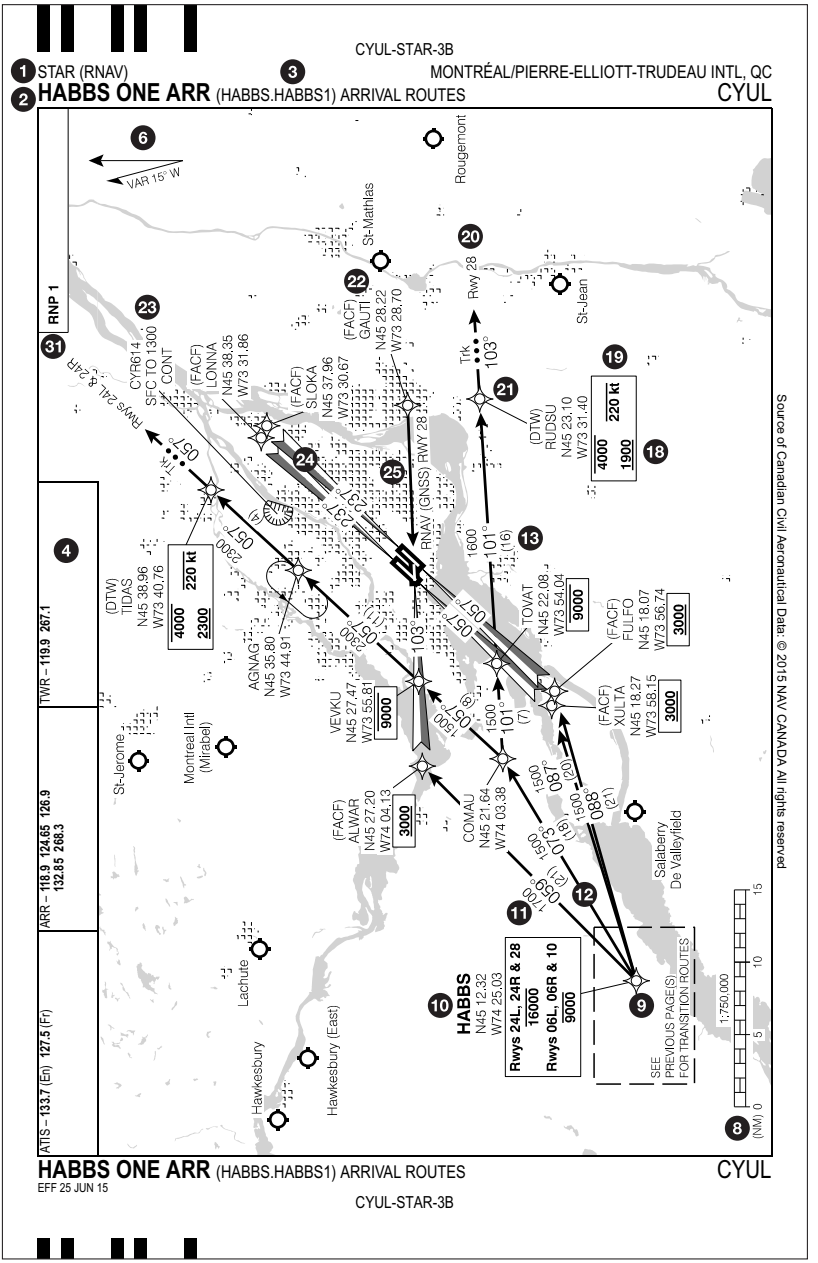
For non GNSS equipped acft, YWT, YMS and YSO DMEs must be operational. **TUKIR Transition: For non GNSS equipped acft, YWT and YTP DMEs must be operational.**	When a STAR procedure is authorized for use by D/D/I equipped aircraft, a DME signal coverage assessment is undertaken to ensure a suitable DME coverage exists to support D/D/I navigation. When this assessment reveals critical DME facilities, they are listed. These DME facilities must be operational for the STAR procedure to be used by D/D/I equipped aircraft. The critical DMEs are specified with respect to the procedure as a whole or based on specific routes or transitions within the procedure.
*** Holding @ LINNG 220 kt or less, 10 NM legs, FL220 or below**	When a hold procedure requires speed limitations, leg length limitations and/or altitude limitations, they are specified in an operational note. An asterisk is charted with the hold procedure symbol referring the reader to the applicable operational note.

PBN STAR

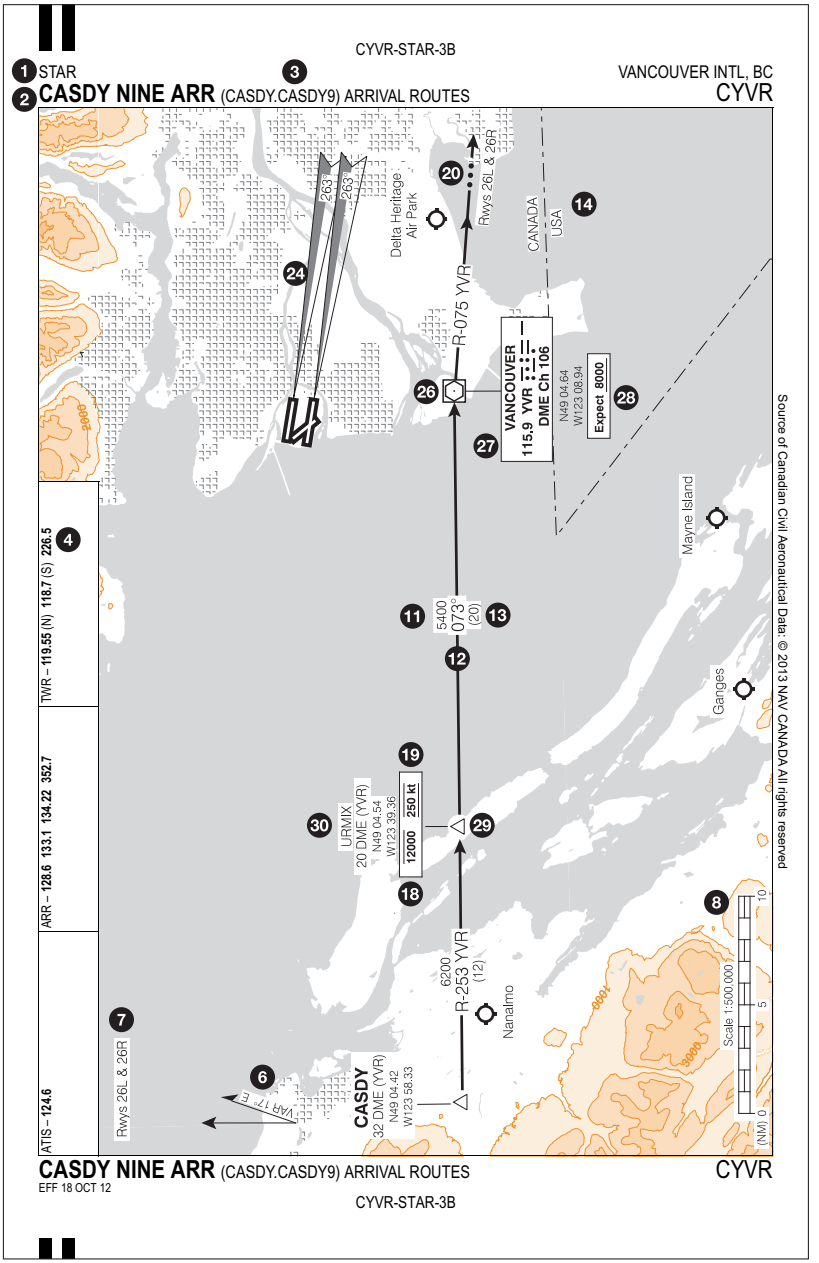




PBN STAR (with DTW and FACF)



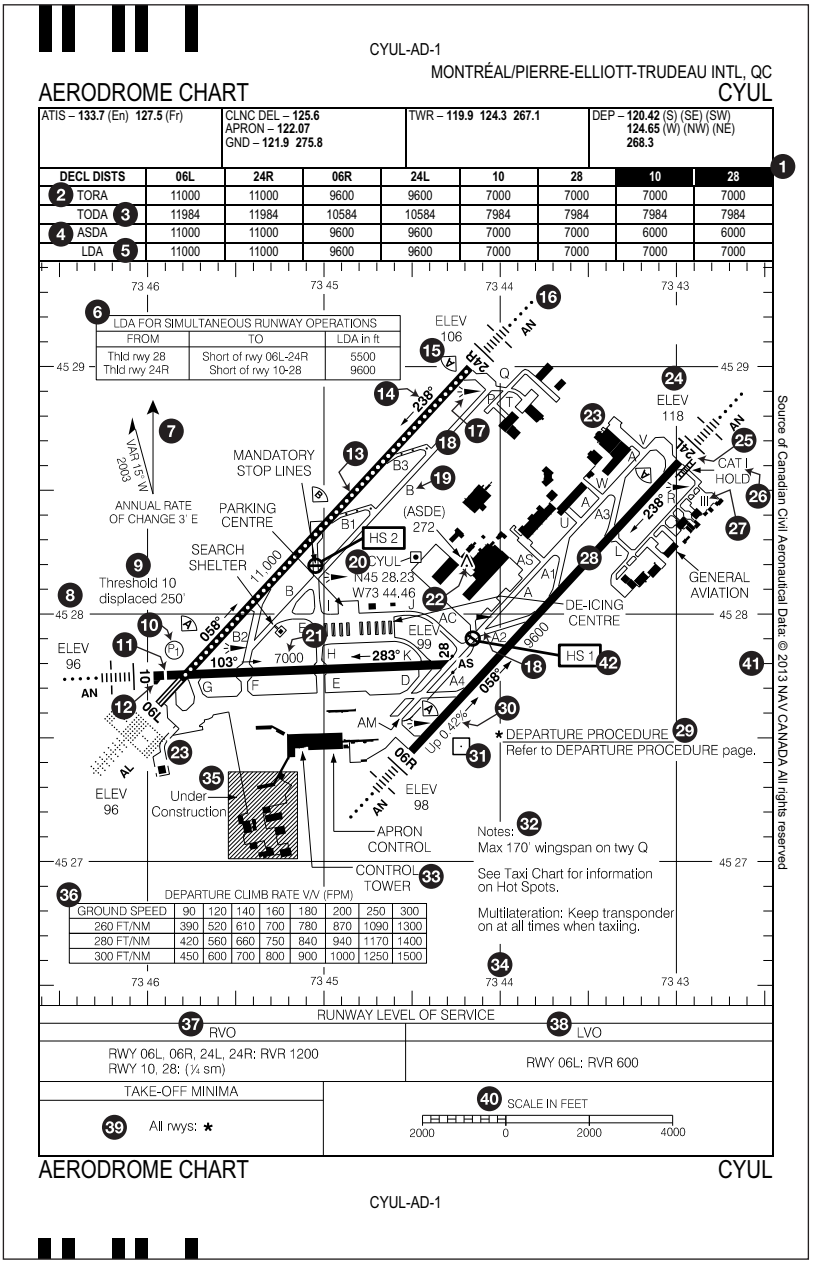
Conventional STAR



Legend for Standard Terminal Arrival Charts

1. Procedure Type
2. Plain Language Designator
3. Coded Designator
4. Communication Information
5. En Route Transition Identification
6. Magnetic Variation
7. Operational Notes
8. Scale Indication
9. Waypoint Symbol
10. Waypoint Identification
11. MEA/MOCA (when MEA and MOCA values differ, both are charted; the MOCA is then denoted with an asterisk)
12. Segment Track
13. Segment Distance
14. International Boundary
15. Following Page Reference
16. Hold Pattern
17. Hold Inbound Track
18. Operational Altitude Restriction
19. Operational Speed Restriction
20. Radar Vector Expectation
21. Downwind Termination Waypoint
22. Final Approach Course Fix
23. Special Use Airspace
24. Localizer Front Course
25. RNAV Approach Reference
26. NAVAID Symbol
27. NAVAID Identification
28. Operational Altitude to Expect
29. Intersection Symbol
30. Intersection Identification
31. PBN Requirements Box

All graphics presented here are for explanatory purposes only and are not intended to be used for navigation.



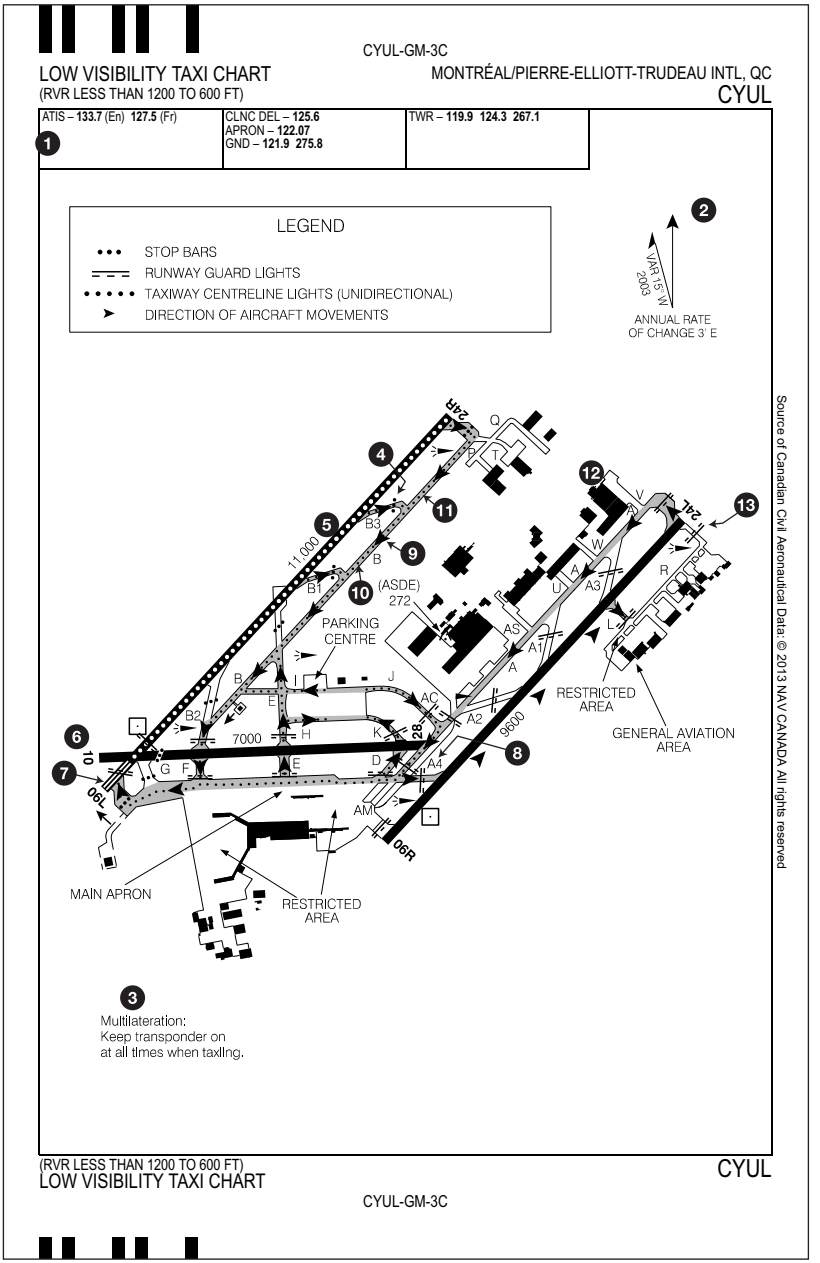
Aerodrome Chart Legend

1. Declared Distance Night
2. Take Off Run Available
3. Take Off Distance Available
4. Accelerate Stop Distance Available
5. Landing Distance Available
6. Landing Distance Available Table
7. Magnetic Variation
8. Latitude Coordinate
9. Threshold Displacement Note
10. Visual Glide Slope Indicator
11. Displaced Runway Threshold
12. Turnaround Bay
13. Centreline Light
14. Runway Bearing
15. RVR Sensor
16. Approach Lighting
17. Wind Direction Indicator
18. Taxiway
19. Taxiway Identification
20. Aerodrome Reference Point
21. Runway Dimensions
22. Obstruction
23. Building
24. Threshold Elevation
25. Runway Number
26. CAT I Holding Bar
27. Apron Identification
28. Runway
29. Departure Procedure
30. Runway Slope Gradient*
31. NAVAID within AD Limit
32. Operational Notes
33. Control Tower
34. Longitude Coordinate
35. Construction Area
36. Departure Climb Rate Table
37. Reduced Visibility Operation Table
38. Low Visibility Operation Table
39. Take-off Minima Box
40. Scale Bar
41. Geographic Grid
42. Hot Spot

* If only one value for runway slope is provided, it can be assumed that the runway has a constant slope for the length indicated and the slope direction is reversed in the opposing runway direction. If no length is indicated, this means the provided slope applies for the entire runway length. For example, for a published slope of RWY 04 DOWN 0.36%, it can be assumed that the slope for RWY 22 is UP 0.36% and that this applies for the entire runway length.

LOW/REDUCED VISIBILITY TAXI CHART LEGEND

All graphics presented here are for explanatory purposes only and are not intended to be used for navigation.



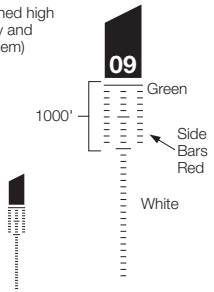
LOW/REDUCED VISIBILITY TAXI CHART LEGEND

Legend for Low Visibility Taxi Chart

1. Communication Box
2. Magnetic Variation
3. Operational Notes
4. Stop Bar
5. Runway with Centreline Light
6. Runway Number
7. Touchdown Zone Lighting
8. Taxiway Identification
9. One Way Taxi
10. Taxiway with Centre Light
11. Low Visibility Taxiway
12. Building
13. Runway Guard Lights

AC CENTRE ROW

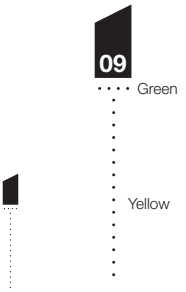
CATEGORY II
HIGH INTENSITY
(Combined high intensity and AD system)



Minimum Length 2400'

AD CENTRE ROW

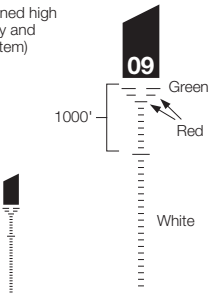
LOW INTENSITY



Minimum Length 2400'

AE CENTRE ROW

CATEGORY I
HIGH INTENSITY
(Combined high intensity and AD system)

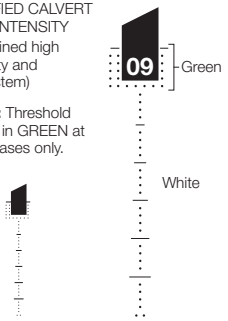


Minimum Length 2400'

AF CENTRE ROW

MODIFIED CALVERT
HIGH INTENSITY
(Combined high intensity and AD system)

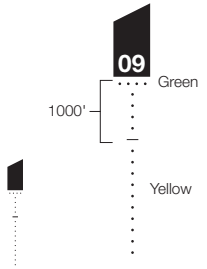
NOTE: Threshold outline in GREEN at DND bases only.



Minimum Length 2400'
SF lights may or may not be installed in outer 2000'

AJ CENTRE ROW

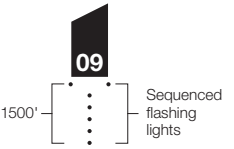
LOW INTENSITY



Minimum Length 2400'
SF lights may or may not be installed in outer 2000'

AO ODALS

OMNI-DIRECTIONAL
APPROACH LIGHTING SYSTEM



Standard Length 1500'

AS RUNWAY THRESHOLD IDENTIFICATION LIGHTS

(UNI-DIRECTIONAL FLASHING STROBE LIGHTS)

AZ VISUAL ALIGNMENT GUIDANCE SYSTEM AND RUNWAY IDENTIFICATION LIGHTS

(UNI-DIRECTIONAL ROTATING BEAMS CREATING FLASHING EFFECT)

SF

Sequenced flashing strobe lights installed in the approach lighting at some aerodromes.

System includes runway threshold identification lights.

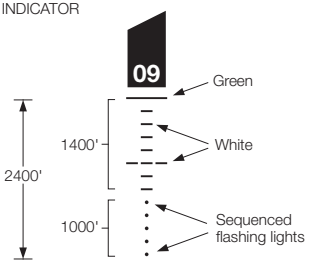
* A small asterisk after system identification letters within the approach summary indicates a modification to the basic system.

See CFS for details.

APPROACH LIGHTS LEGEND

AM MALSR

MEDIUM INTENSITY APPROACH LIGHT SYSTEM WITH RUNWAY ALIGNMENT INDICATOR LIGHTS



Standard Length 2400'

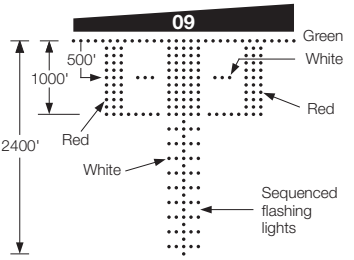
AN SSALR

HIGH INTENSITY

Standard Length 2400'

AL ALSF-2

CATEGORY II/III HIGH INTENSITY

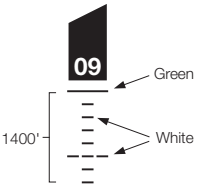


Standard Length 2400'

NOTE: May be operated as SSALS or SSALR during favourable weather conditions.

AR MALS

MEDIUM INTENSITY APPROACH LIGHT SYSTEM



Standard Length 1400'

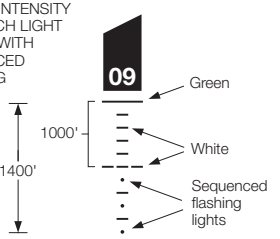
AW SSALS

HIGH INTENSITY

Standard Length 1400'

AK MALSF

MEDIUM INTENSITY APPROACH LIGHT SYSTEM WITH SEQUENCED FLASHING LIGHTS

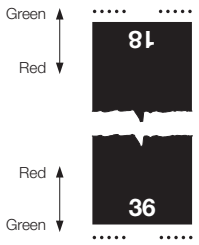


Standard Length 1400'

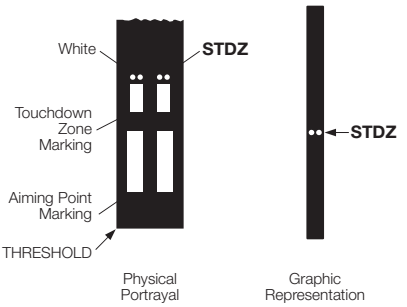
APPROACH LIGHTS LEGEND

Threshold and Runway Lighting

TE THRESHOLD and RUNWAY END

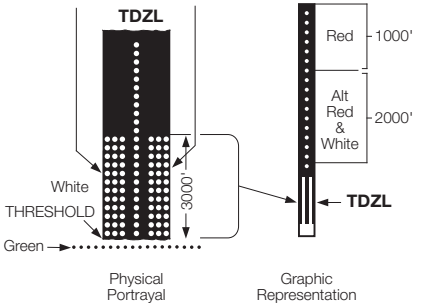


STDZ SIMPLE TOUCHDOWN ZONE LIGHTS



A CENTRELINE and RAPID EXIT TAXIWAY

TOUCHDOWN ZONE and RUNWAY CENTRELINE LIGHTING



Aircraft Radio Control of Aerodrome Lighting (ARCAL)

Type J To operate all aerodrome lighting for duration of approximately 15 minutes key mike 5 times within 5 seconds. The timing cycle may be restarted at any time by repeating the keying sequence.

Note: Some systems will indicate when the duration period is over by flashing once, then remaining on for a further 2 minutes before extinguishing completely. Other systems offer no indication that the period is ending. The control system may operate H24 or between sunset and sunrise.

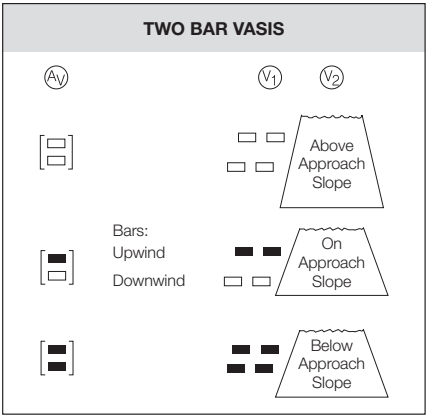
Type K To operate all aerodrome lighting for a duration of approximately 15 minutes, key mike 7 times initially. This will ensure all lights are on maximum intensity. The intensity may be adjusted up or down to any one of three settings by keying the mike 7, 5 or 3 times within 5 seconds for high, medium or low intensity settings respectively. The timing cycle may be restarted at any time by repeating the initial keying sequence. Where Runway Indication Lights (code AS) are available, keying the microphone 3 times on the appropriate frequency will turn them off.

Visual Glide Slope Indicators (VGSI)

Visual Approach Slope Indicator System (VASIS)

Bars may be located on either or both sides of the runway (Ref TC AIM AGA).

- (V1) 2 BAR VASIS for aircraft with eye-to-wheel height up to 10'
- (V2) 2 BAR VASIS for aircraft with eye-to-wheel height up to 25'
- (AV) AVASIS – Abbreviated VASIS for aircraft with eye-to-wheel height up to 10' (shown in brackets, 2 light units)



Precision Approach Path Indicator (PAPI)

- (P1) PAPI for aircraft with eye-to-wheel height up to 10'
- (P2) PAPI for aircraft with eye-to-wheel height up to 25'
- (P3) PAPI for aircraft with eye-to-wheel height up to 45'
- (AP) APAPI – Abbreviated PAPI for aircraft with eye-to-wheel height up to 10'