CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

National Policy

ORDER
8260.42B CHG 2

Effective Date:
05/22/2020

SUBJ: United States Standard for Helicopter Area Navigation (RNAV)

1. Purpose. This change incorporates updated office identifications to reflect the current FAA organizational structure; while removing routing symbols/codes. Also, this change ensures all users have the most up-to-date information to reduce confusion with functional FAA structures. This order contains guidance that is pertinent to 14 CFR Part 97.

2. Who this change affects. This is an administrative editorial change only.

3. Where You Can Find This Change. You can find this change on the Directives Management System (DMS) Website: http://www.faa.gov/regulations_policies/orders_notices.

4. Explanation of Changes.

a. General. Throughout the document, updated office identifications to reflect the current FAA organizational structure; replaced with the appropriate organization title. Removed outdated/obsolete references.

b. Table of Contents. Updated reflecting the correct content.

c. Appendix B. Removed, the content from this appendix is now addressed in Order 8260.3, United States Standard for Terminal Instrument Procedures (TERPS).

d. Appendix C. Renamed to Appendix B.

PAGE CHANGE CONTROL CHART

Remove Pages	Dated	Insert Pages	Dated
CHG 1 (Cover pg. 1 and 2)	11/20/2012	CHG 1 (Cover pg. 1 and 2)	05/22/2020
iii (and iv)	11/20/2012	iii (and iv)	05/22/2020
1-1 (and 1-2)	11/20/2012	1-1 (and 1-2)	05/22/2020
2-5 and 2-6	03/10/2009	2-5 and 2-6	05/22/2020
8-11 and 8-12	11/20/2012	8-11 and 8-12	05/22/2020
A-1 and A-2	03/10/2009	A-1 and A-2	05/22/2020
B-1 through B-148	03/10/2009	B-1 through B-6	05/22/2020
C-1 and C-6	11/20/2012		

5. Distribution. This change is distributed electronically only.

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Rick Domingo
Executive Director, Flight Standards Service

CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

National Policy

8260.42B
CHG 1

Effective Date:
11/20/2012

SUBJ: United States Standard for Helicopter Area Navigation (RNAV)

1. Purpose. This change incorporates new Helicopter Departure and Localizer Precision with Vertical (HLPV) criteria. Order 8260.42B contains criteria for the formulation, review, approval, and publication of area navigation (RNAV) helicopter instrument procedures based on Global Positioning System (GPS) and Wide Area Augmentation System (WAAS) navigation.

2. Audience. The primary audience for this Order is the Air Traffic Organization (ATO), Mission Support Services (MSS), Aeronautical Information Services, who has the responsibility to develop instrument flight procedures. The secondary audience includes the ATO Service Areas' Operational Support Group, Flight Procedures Team (OSG-FPT), ATO Flight Program Operations, and Flight Standards offices.

3. Where You Can Find This Change. You can find this order on the Directives Management System (DMS) Website: http://www.faa.gov/regulations_policies/orders_notices.

4. Explanation of Changes. Significant areas of new direction, guidance, policy, and criteria as follows:

Note: General. All references to FAA Orders 8260.52, United States Standard for Required Navigation Performance (RNP) Approach Procedures with Special Aircraft and Aircrew Authorization Required (SAAAR), and 8260.54A, The United States Standard for Area Navigation, are now found in FAA Order 8260.58, United States Standard for Performance Based Navigation (PBN) Instrument Procedure Design.

a. Table of Contents. Updated Table of Contents to coincide with the pages changed.

b. Chapter 1. Added further explanation regarding "automation" to include the use of the calculators embedded in this order and the geodetic calculator available on the Flight Procedures and Airspace Group (FPAG) web site, or CompSys 21 geodetic calculator available on the Aeronautical Information Services' web site, or Instrument Approach Procedure Automation/Instrument Procedures Development System (IAPA/IPDS), or other FPAG-approved geodetic calculator.

c. Chapter 2.

(1) Paragraph 2. Added use of "rounding."

(2) Paragraph 2b. Updated Mathematics Convention to include feet per nautical mile (fpnm).

d. Chapter 6. Added Helicopter Departure criteria. This chapter describes RNAV departure criteria describing a visual departure from a non-instrument flight rules (IFR) departure location to an Initial Departure Fix to join with the IFR portion of the departure. This includes both public and special departure criteria.

e. Chapter 8. Added Helicopter Localizer Precision with Vertical (HLPV) criteria. This chapter describes the development of the HLPV Approach to a Point in Space and the initial missed approach segment.

f. Appendix C. Added new definitions to support new criteria in chapters 6 and 8.

Original Signed by

John M. Allen
Director, Flight Standards Service

PAGE CONTROL CHART

Remove Pages	Dated	Insert Pages	Dated
i thru ii	03/10/09	i thru iv	11/20/12
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Table of Contents

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Chapter 1. General Information

1. Purpose of This Order. This order contains criteria for the formulation, review, approval, and publication of area navigation (RNAV) helicopter instrument procedures based on Global Positioning System (GPS) and Wide Area Augmentation System (WAAS) navigation.

2. Audience. This order is distributed in Airport Safety, Standards and Communications, and Navigation and Surveillance Systems; Air Traffic Organization; Flight Standards Services offices, and Airports Divisions; special mailing list ZVS-827, and Special Military and Public Addressees.

3. Where Can I Find This Order? This information is also available on the FAA's Web site at http://www.faa.gov/regulations_policies/orders_notices

4. What This Order Cancels. Order 8260.42A, Helicopter Global Positioning System (GPS) Nonprecision Approach Criteria.

5. Explanation of Policy Changes. This document has been completely revised for harmonization with FAA Order 8260.54, The United States Standard for Area Navigation (RNAV), incorporation of criteria policy documents, and to meet FAA Order 1320.1, FAA Directives Management, formatting requirements. These criteria were written for automated implementation through the use of the calculators embedded in the document, Flight Procedures and Airspace Group (FPAG) geodetic calculator, Compsys 21 geodetic calculator, Instrument Approach Procedure Automation/Instrument Procedures Development System (IAPA/IPDS), or other FPAG-approved geodetic calculation products. Formulas are presented in Math notation and standard text to facilitate programming efforts. Calculation examples were eliminated. Instead, an Adobe Acrobat version of the criteria document is available where each formula performs the calculation as an embedded calculator.

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$\frac{\sin(30°)}{0.5} = 1$ because functions take precedence over division

$sin\left(\frac{30°}{0.5}\right) = 0.8660254$ because parentheses take precedence over functions

Notes on calculator usage:

1. Most calculators are programmed with these rules of precedence.

2. When possible, let the calculator maintain all of the available digits of a number in memory rather than re-entering a rounded number. For highest accuracy from a calculator, any rounding that is necessary should be done at the latest opportunity.

c. Geospatial Standards. The following standards apply to the evaluation of obstacle and terrain position and elevation data relative to RNAV OEAs and OCSs. Terrain and obstacle data are reported in NAD-83 latitude, longitude, and elevation relative to MSL in National Geodetic Vertical Datum of 1929 (NGVD-29) or North American Vertical Datum of 1988 (NAVD-88) vertical datum. Evaluate obstacles using their NAD-83 horizontal position and NAVD-88 elevation value compared to the WGS-84 referenced course centerline (along-track and cross-track), OEA boundaries, and OCS elevations as appropriate.

(1) WGS-84[G873] for Position and Course Construction. This reference frame is used by the FAA and the U.S. Department of Defense (DoD). It is defined by the National Geospatial-Intelligence Agency (NGA) (formerly the National Imagery and Mapping Agency, formerly the Defense Mapping Agency [DMA]). In 1986, the Office of National Geodetic Survey (NGS), redefined and readjusted the North American Datum of 1927 (NAD-27), creating the North American Datum of 1983 (NAD-83). The WGS-84 was defined by the DMA. Both NAD-83 and WGS-84 were originally defined (in words) to be geocentric and oriented as the Bureau International d I'Heure (BIH) Terrestrial System. In principle, the three-dimensional (3D) coordinates of a single physical point should be the same in both NAD-83 and WGS-84 Systems; in practice; however, small differences are sometimes found. The original intent was that both systems would use the Geodetic Reference System of 1980 (GRS-80) as a reference ellipsoid. As it happened, the WGS-84 ellipsoid differs very slightly from GRS-80. The difference is 0.0001 meters in the semi-minor axis. In January 2, 1994, the WGS-84 reference system was realigned to be compatible with the International Earth Rotation Service's Terrestrial Reference Frame of 1992 (ITRF) and renamed WGS-84 (G730). The reference system underwent subsequent improvements in 1996, referenced as WGS-84 (G873) closely aligned with ITRF-94, to the current realization adopted by the NGA in 2001, referenced as WGS-84 (G1150) and considered equivalent systems to ITRF 2000.

(2) NAVD-88 for elevation values. NAVD-88 is the vertical control datum established in 1991 by the minimum-constraint adjustment of the Canadian-Mexican-U.S. leveling observations. It held fixed the height of the primary tidal bench mark, referenced to the new International Great Lakes Datum of 1985 local MSL height value, at Father Point/Rimouski, Quebec, Canada. Additional tidal bench mark elevations were not used due to the demonstrated variations in sea surface topography, (i.e., the fact that MSL is not the same equipotential surface at all tidal bench marks).

d. OEA Construction and Obstacle Evaluation Methodology.

(1) Courses, fixes, boundaries (lateral dimension). Construct straight-line courses as a WGS-84 ellipsoid geodesic path. If the course outbound from a fix differs from the course inbound to the fix (courses measured at the fix), then a turn is indicated. Construct parallel and trapezoidal boundary lines as a locus of points measured perpendicular to the geodesic path. (The resulting primary and/or secondary boundary lines do not display a "middle bulge" due to curvature of the ellipsoids surface since they are not geodesic paths.) NAD-83 latitude/longitude positions are acceptable for obstacle, terrain, and airport data evaluation. Determine obstacle lateral positions relative to course centerline/OEA boundaries using ellipsoidal calculations (see Order 8260.3).

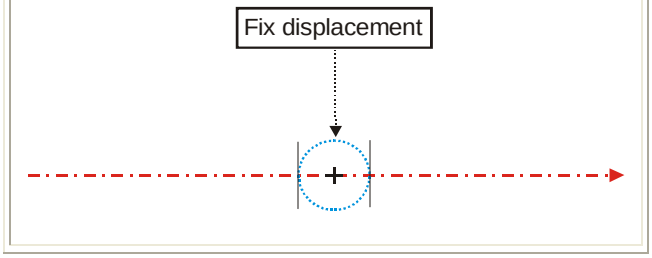
(2) Elevations (vertical dimension). Evaluate obstacles, terrain, and airport data using their elevation relative to their orthometric height above the geoid (for our purposes, MSL) referenced to the NAVD-88 vertical datum. The elevations of OCSs are determined spherically relative to their origin MSL elevation (NAVD-88). Department of Defense (DoD) procedure developers may use EGM-96 vertical datum.

e. Evaluation of Actual and Assumed Obstacles (AAO). Apply the vertical and horizontal accuracy standards in Order 8260.19, paragraphs 272, 273, 274, and appendix 3. (USAF, apply guidance per AFI 11-230)

Note: When applying an assumed canopy height consistent with local area vegetation, contact the designated Flight Procedures Team (FPT) to verify the height value to use.

f. ATT Values. ATT is the value used (for segment construction purposes) to quantify position uncertainty of an RNAV fix. The application of ATT can; therefore, be considered "circular;" i.e., the ATT value assigned describes a radius around the plotted position of the RNAV fix (see figure 2-1 and table 2-1).

Figure 2-1. ATT.



Note: Cross-track tolerance (XTT) values were considered in determining minimum segment widths, and are not considered further in segment construction.

Formula 8-10. Glide Path Angle Adjustment

(1) *input* OBS_X, OBS_{elev}, RDP_{elev}

$$s = (r + RDP_{elev})^2 + (r + OBS_{elev})^2 - 2 \cdot (r + RDP_{elev}) \cdot (r + OBS_{elev}) \cdot \cos\left(\frac{OBS_X - 1154}{r}\right)$$

$$b = \operatorname{acos}\left(\frac{(r + RDP_{elev})^2 - s + (r + OBS_{elev})^2}{2 \cdot (r + RDP_{elev}) \cdot \sqrt{s}}\right) - \frac{\pi}{2}$$

$$OCS_{adjusted\_slope} = \operatorname{round}\left(\frac{1}{\tan(b)}, 2\right)$$

$$\theta_{adjusted} = \operatorname{round}\left(\frac{102}{OCS_{adjusted\_slope}}, 2\right)$$

(r+RDP$_{elev}$)^2+(r+OBS$_{elev}$)^2-2*(r+RDP$_{elev}$)*(r+OBS$_{elev}$)*cos((OBS$_X$-1154)/r)
acos(((r+RDP$_{elev}$)^2+s-(r+OBS$_{elev}$)^2)/(2*(r+RDP$_{elev}$)*sqrt(s)))-π/2
OCS$_{adjusted_slope}$=round(1/tan(b),2)
θ$_{adjusted}$=round(102/OCS$_{adjusted_slope}$,2)

Calculator

OBS_X		Click Here to Calculate
OBS_{elev}		
RDP_{elev}		
$OCS_{adjusted\_slope}$		
$\theta°_{adjusted}$		

The descent rate of the adjusted glidepath angle should not exceed 800 ft/min. Descent rate is heavily dependent on airspeed. Determine the airspeed that yields 800 ft/min ($V_{KIAS\_800ft\_min}$) for the adjusted glidepath angle using Formula 8-11. If $V_{KIAS\_800ft\_min}$ is less than the normal approach speed, publish a final approach airspeed restriction of $V_{KIAS\_800ft\_min}$. The minimum adjusted glidepath angle should not be less than three degrees. If operationally required, with Flight Standards (FS) approval, the maximum descent rate can be increased to 1,000 ft/min.

Formula 8-11. Descent Rate Indicated Airspeed

(1) $input \quad \theta°_{adjusted}, \; DA$

(2) $$V_{KIAS\_800*ft/min} = \mathbf{round}\left[\left(\frac{800*}{101.26859 \cdot \sin\left(\theta°_{adjusted} \cdot \frac{\pi}{180}\right)} - 10\right) \cdot \frac{(288 - 0.00198 \cdot DA)^{2.628}}{171233 \cdot \sqrt{303 - 0.00198 \cdot DA}}, 0\right]$$

*1000 when the airspeed limit is required for 1000 ft/min

round[(800/(101.26859*sin(θ°adjusted*π/180))-10)*((288-0.00198*DA)^2.628)/(171233*sqrt(303-0.00198*DA)),0]

Calculator

$\theta°_{adjusted}$		Click Here to Calculate
DA		
$V_{KIAS\_800ft/min}$		
$V_{KIAS\_1000ft/min}$ (with FS approval)		

8-8. Adjusting TCH to Reduce/Eliminate OCS Penetrations. NA for PinS LPV procedures.

8-9. Missed Approach Section 1 (Height Loss and Initial Climb). Section 1 begins at DA (CD line) and ends at the AB line. It accommodates height loss and establishment of missed approach climb gradient. Obstacle protection is based on an assumed minimum climb gradient of 400 ft/NM (≈15.19:1 slope). Section 1 is centered on a continuation of the FAC and is subdivided into sections 1a and 1b (see Figures 8-6 and 8-7).

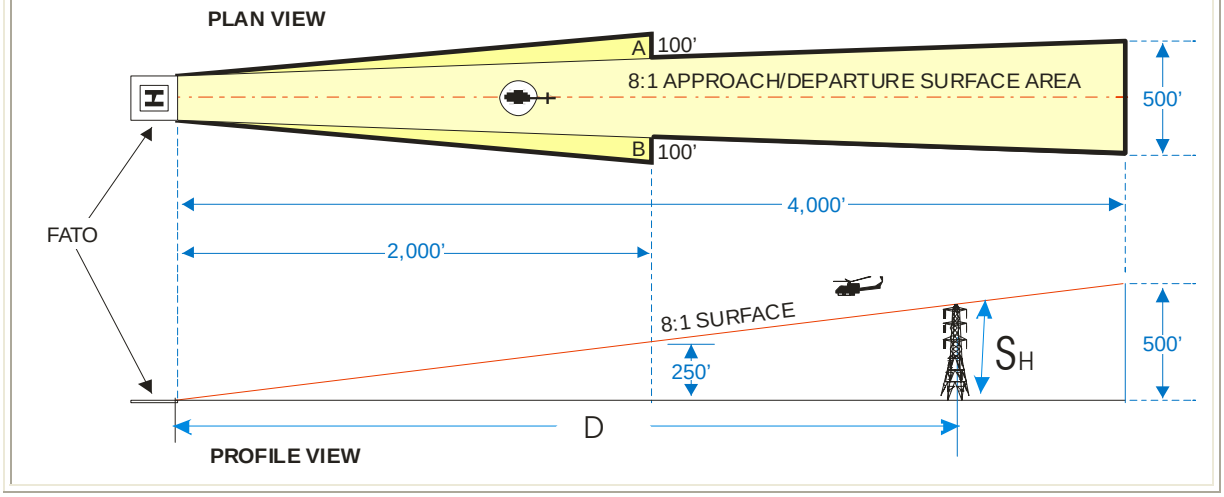
Appendix A. Conditions and Assumptions for IFR to VFR Heliport (IVH) (Proceed Visually) Approach Procedures

Before designing a special RNAV (GPS) IFR to a VFR heliport (IVH) approach procedure, ensure the heliport meets the following criteria:

1. FAA Form 7480-1, Notice of Landing Area Proposal, has been filed under Part 157.

2. No penetration of the 8:1 surface in AC 150/5390-2 is permitted (see figure A-1). Penetrations of either A or B areas but not penetrations of both areas are allowed if the obstructions are charted, and marked or lighted and if not considered a hazard. Use formula A-1 to determine height of the 8:1 surface.

Figure A-1. 8:1 Surface in AC 150/5390-2.



Formula A-1. 8:1 OCS height (S_H).

$$S_H = (r + HE) \cdot e^{\frac{D}{8r}} - r$$

Where:

D = C/L distance FATO edge to Obstacle
HE = Heliport Elevation

(r+HE)*e^(D/(8*r))-r

Calculator

D (ft)		Click here to calculate
HE		
S_H		

3. An acceptable onsite evaluation of the heliport for VFR use is required. Order 8700.1, General Aviation Inspector's Guide, chapter 61 is to be used for evaluation of the heliport. Based on the FAA determination, a procedure can be developed under the following conditions:

a. No objection.

b. Conditional. Conditions have been resolved by the proponent, e.g., obstacle penetrations of the 8:1 approach area, transitional and lateral extension areas, or pertain to the minimum size of the FATO, TLOF, and Safety Area.

c. Objection. If an objection determination is issued, an IVH approach procedure is not authorized to be developed. A Point-in-Space (PinS) (Proceed VFR) approach procedure may be developed in accordance with chapter 5, paragraph 7.

4. An acceptable evaluation of the visual segment for flyability, obstacles, and visual references must be completed in both day and night flight conditions. The heliport or heliport visual references must be in clear view at the MAP, e.g., it cannot be completely obscured behind a building. A heliport is the area of land, water or a structure used or intended to be used for the landing and takeoff of helicopters, together with appurtenant buildings and facilities. Buildings and facilities associated with the heliport such as hangers, administration buildings, AWOS equipment, windsock, beacon, etc. located within 500 ft are acceptable visual references. Surrounding buildings and land marks are not allowable visual references, unless approved by Flight Standards. At least one of the following visual references must be visible or identifiable before the pilot may proceed visually:

a. FATO or FATO lights.

b. TLOF or TLOF lights.

c. Heliport Instrument Lighting System (HILS).

d. Heliport Approach Lighting System (HALS) or lead-in lights.

e. Visual Glideslope Indicator (VGSI).

f. Windsock or windsock light(s).*****

g. Heliport beacon.*

h. Other facilities or systems approved by Flight Standards (Flight Technologies and Procedures Division)).

***Note:** Windsock lights and heliport beacons should be located within 500 ft of the TLOF.

5. IFR Approach to a VFR Heliport (IVH) Analysis. The following analysis must be performed for authorizing an IVH procedure. Obstacle clearance surface (OCS) areas are applied using concepts from Order 8260.3, Volume 1, chapter 2, paragraph 251a (1) with the following exceptions:

a. **Alignment is always** centered on the visual segment centerline.

Appendix B. Administrative Information

1. Distribution. This order is distributed in the Offices of Airport Safety and Standards and Communications, Navigation, and Surveillance Systems; Air Traffic Organization, Flight Standards Services offices, and Airports Divisions; special mailing list ZVS-827, and to Special Military and Public Addressees.

2. Background. The analysis of Global Positioning System/Wide Area Augmentation System (GPS/WAAS) navigation flight test data provides the basis for these criteria. A significant difference exists between approach procedures to runways and approach procedures to heliports. Approaches to runways terminate in relatively obstacle-free environments. Approaches to heliports commonly terminate in areas of dense population and large buildings. Speed limitations incorporated in these criteria provide the smallest obstacle clearance areas, the shortest segment lengths, and the lowest ceiling and visibility minimums. The graphic illustrations in this order are not to scale. The guidance published in this directive supersedes previous guidance concerning helicopters published in Terminal Instrument Procedures (TERPS) Instruction Letters (TILs) and other correspondence.

3. Definitions.

a. Approach Procedure Types using RNAV (GPS).

(1) IFR to an IFR Heliport (Public and Special). An IFR approach to a heliport that meets Advisory Circular (AC) 150/5390-2, Heliport Design, standards for an IFR heliport.

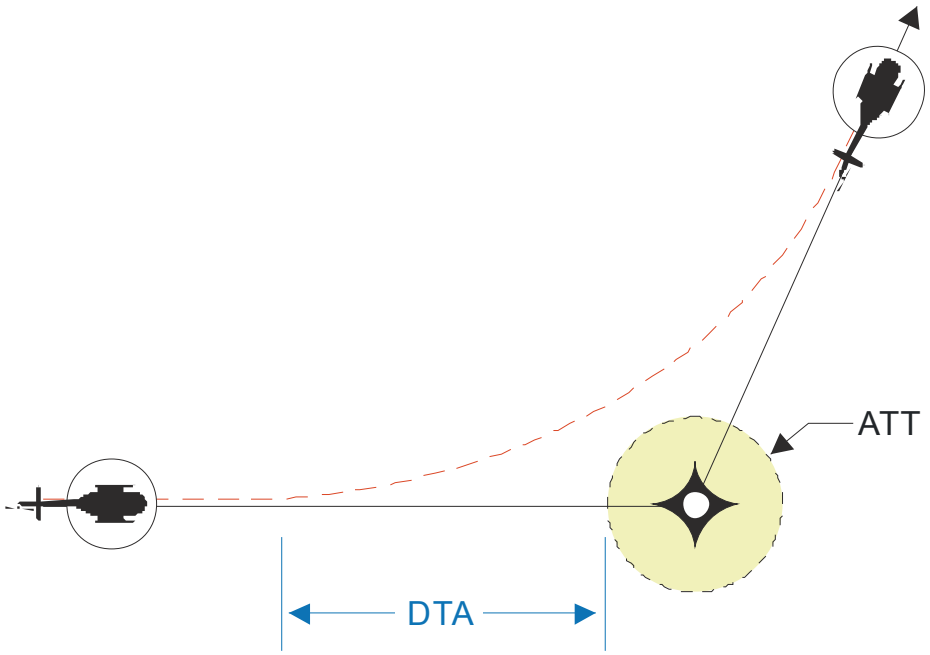
(2) IVH (Proceed Visually) (Special). An IFR approach to a VFR heliport that meets AC 150/5390-2 standards. This procedure requires flight standards approval. The phrase "Proceed Visually" is charted on the procedure for the visual segment from the MAP to the heliport. IVR applies IVH criteria to an approach to a VFR runway.

(3) Point-in-Space (PinS) Approach (Proceed VFR) (Public and Special). An IFR PinS approach to one or more VFR heliports. The phrase "Proceed VFR" is charted on the procedure for the VFR segment following the MAP.

(4) IFR to a Runway (Public and Special). An IFR helicopter approach procedure to a runway.

b. Distance of Turn Anticipation (DTA). DTA represents the maximum distance prior to a fly-by-fix that a helicopter is expected to start a turn to intercept the course of the next segment. The along-track tolerance (ATT) value, associated with a fix, is added to the DTA value when DTA is applied (see figure B-1 and formula 2-6).

Figure B-1. Distance of Turn Anticipation (DTA)



DTA = Radius x tan (degrees of turn ÷ 2)

c. Fly-By Fix. A fly-by fix is a waypoint where a turn is initiated prior to reaching it.

d. Fly-Over Waypoint (WP). A fly-over WP is a waypoint over which an aircraft is expected to fly before one turn is initiated.

e. Final Approach and Takeoff Area (FATO). A defined area over which the final phase of the approach to a hover, or a landing, is completed and from which the takeoff is initiated. The guidance for a FATO is published in AC 150/5390-2.

f. Fictitious Helipoint (FHP). The FHP is located 2,600 ft beyond the MAP and 9,023 ft in front of the flight path alignment point (FPAP). It is used to establish the approach course width for the WAAS.

g. Flight Path Alignment Point (FPAP). The FPAP is a 3-dimensional (3D) point defined by World Geodetic System of 1984/North American Datum of 1983 (WGS-84/NAD-83) latitude, longitude, mean sea level (MSL) elevation, and WGS-84 Geoid height. The FPAP is used in conjunction with the FHP and the geometric center of the WGS-84 ellipsoid to define the final approach azimuth [localizer performance with vertical guidance (LPV) glidepath's vertical plane, where used) associated with a localizer performance (LP) or LPV final course.

h. Flight Technical Error (FTE). FTE is the measure of the pilot or autopilot's ability to control an aircraft so that its indicated position matches the desired position.

i. Global Navigation Satellite System (GNSS) Azimuth Reference Point (GARP). A calculated point 1,000 ft beyond the FPAP lying on an extension of a geodesic line from the landing threshold point/fictitious threshold point (LTP/FTP) through the FPAP. This point is used by the airborne system as the origin of the lateral guidance sector. It may be considered as the origin of an imaginary localizer antenna.

j. Geoid Height (GH). The GH is the height of the Geoid relative to the WGS-84 ellipsoid. It is a positive value when the Geoid is above the WGS-84 ellipsoid and negative when it is below. The value is used to convert a mean sea level (MSL) elevation to an ellipsoidal or geodetic height - the height above ellipsoid (HAE).

Note: The Geoid is an imaginary surface within or around the earth that is everywhere normal to the direction of gravity and coincides with MSL in the oceans. It is the reference surface for MSL heights.

k. Heliport Approach Lighting System (HALS). The HALS is a distinctive approach lighting configuration designed to prevent it from being mistaken for an airport runway approach lighting system. HALS consists of ten bars of lights at 100-ft increments and has a length of 1,000 ft (305 m). HALS provides a visibility credit of 1/4 statute mile (SM) for nonprecision approaches.

l. Height Above Landing Area Elevation (HAL). The HAL is the height of the minimum descent altitude (MDA) above helipoint elevation.

m. Height Above Surface (HAS). HAS is the height of the MDA above the highest terrain/surface within a 5,200-ft radius of the MAP in the PinS procedure.

n. Helipoint Crossing Height (HCH). The HCH is the height of the vertical guidance path above the heliport elevation at the helipoint.

o. Helipoint. The helipoint is the aiming point for the visual segment and is normally centered in the touchdown and lift-off area (TLOF). The TLOF is normally centered in the FATO.

p. Heliport. An area of land, water, or structure used or intended to be used for helicopter landings and takeoffs and includes associated buildings and facilities. IFR and VFR heliports are described in AC 150/5390-2.

q. Heliport Elevation (HE). For heliports without a precision approach, the heliport elevation is the highest point of the FATO expressed as the distance above mean sea level (MSL).

r. Heliport Reference Point (HRP). The geographic position of the helipoint, measured at the center of the FATO or the central point of multiple FATOs, expressed as (WGS-84/NAD-83) latitude and longitude to the nearest hundredth of a second. The HRP elevation is equal to the heliport elevation.

s. Initial Departure Fix (IDF). The first fix on a PinS departure procedure where application of IFR obstruction protection and air traffic separation standards are provided.

t. IFR Heliports. Facility specifications for IFR Heliports are described in chapters 6 or 7 as appropriate of Advisory Circular 150/5390-2, Heliport Design. Chapter 6 of AC 150/5390-2 relates to paragraph 5.3 of this order for nonprecision IFR approach procedures to IFR heliports.

u. Landing and Takeoff Site. The area of intended landing and takeoff. It can be a heliport, helistop, vertiport, or other point of landing designated for a PinS approach.

v. Landing Threshold Point. The LTP is a 3D point at the intersection of the runway centerline and the runway threshold (RWT). WGS-84/NAD-83 latitude, longitude, MSL elevation, and geoid height define it. It is used in conjunction with the FPAP and the geometric center of the WGS-84 ellipsoid to define the vertical plane of an RNAV final approach course.

w. Proceed Visually. This phrase requires the pilot to acquire and maintain visual contact with the FATO or elements associated with the FATO such as heliport lighting, precision approach path indicator (PAPI), etc. at or prior to the MAP. Obstacle and terrain avoidance from the MAP to the FATO is the responsibility of the pilot. A missed approach procedure is not provided between the MAP and the landing FATO.

x. Proceed VFR. For PinS procedures, this phrase requires the pilot to proceed from the MAP to the selected landing area on the approach chart with no less than the visibility and ceiling required on the approach chart. For flights that do not terminate at the selected landing area on the approach chart, the pilot is required to proceed from the MAP under the applicable VFR for ceiling and visibility required by the applicable Title 14 Code of Federal Regulations (14 CFR) but no less than the visibility required on the approach chart, operations specifications (OpsSpec), or letter of agreement (LOA). The pilot is responsible for obstacle and terrain avoidance from the MAP to the landing site. A missed approach procedure is not provided between the MAP and the landing site. The landing site is not required to be in sight from the MAP.

y. Reference Datum Point (RDP). The RDP is a 3D point defined by the LTP or FTP latitude/longitude position, MSL elevation, and a threshold crossing height (TCH) value. The RDP is in the vertical plane associated with the final approach course and is used to relate the glidepath angle of the final approach track to the landing runway.

z. Touchdown and Lift-Off Area (TLOF). A TLOF is a load bearing, generally paved area, normally centered in the FATO, on which the helicopter lands or takes off (see AC 150/5390-2).

aa. United States Air Force (USAF).

bb. United States Army (USA).

cc. United States Coast Guard (USCG).

dd. United States Navy (USN).

ee. VFR Heliports. Standards and recommendations for VFR and IFR heliports are described in chapters 2 through 5 and chapter 8 of AC 150/5390-2. Paragraph 5.4 of this order relates to VFR heliports.

ff. Minimum instrument meteorological condition airspeed (V_{mini}). V_{mini} means instrument flight minimum speed, utilized in complying with minimum limit speed requirements for instrument flight. This is the certified minimum airspeed that a specific helicopter is approved to enter instrument meteorological flight conditions.

gg. Visual Segment Descent Angle (VSDA). The angle of descent in the visual segment.

hh. Visual Segment Descent Point (VSDP). The descent point within the visual segment of a helicopter instrument approach to an IFR heliport or runway.

ii. Visual Segment Reference Line (VSRL). A line perpendicular to the final course at a distance of 75 ft (22.9 m) from the helipoint for public use heliports and 50 ft (15.27 m) from the helipoint for heliports with special instrument procedures. It extends 75 ft (22.9 m) on each side of the final course centerline for public use heliports and 50 ft (15.27 m) on each side of the final course centerline for heliports with special instrument procedures. For IFR procedures the line is 75 ft (22.9 m) from the helipoint and it extends 75 ft (22.9 m) on each side of the final approach course.

jj. Wide Area Augmentation System (WAAS) Localizer Performance (LP). The LP approach applies lateral-only WAAS guidance (and reduced OEA) within the FAS to a PinS.

4. Data Resolution. See chapter 2, paragraph 2.

5. Related Publications. All directives in this order refer to the latest editions:

a. Advisory Circular 150/5390-2, Heliport Design.

b. Order 7130.3, Holding Pattern Criteria.

c. Order 8260.3, United States Standard for Terminal Instrument Procedure (TERPS).

d. Order 8260.19, Flight Procedures and Airspace.

e. Order 8260.40, Flight Management System Instrument Procedures Development.

f. Order 8260.45, Terminal Arrival Area (TAA) Design Criteria.

g. Order 8260.54, United States Standards for Area Navigation (RNAV).

6. Information Update. For your convenience, FAA Form 1320-19, Directive Feedback Information, is included at the end of this order to note any deficiencies found, clarifications needed, or suggested improvements regarding the contents of this order. When forwarding your comments to the originating office for consideration, please use the "Other Comments" block to provide a complete explanation of why the suggested change is necessary.

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Directive Feedback Information

Please submit any written comments or recommendation for improving this directive, or suggest new items or subjects to be added to it. Also, if you find an error, please tell us about it.

Subject:

To: Flight Technologies and Procedures Division, AFS-400 Coordination Mailbox (9-AWA-AFS400-COORD@faa.gov)

(Please check all appropriate line items)

☐ An error (procedural or typographical) has been noted in paragraph on page .

☐ Recommend paragraph on page be changed as follows: *(attach separate sheet if necessary)*

☐ In a future change to this order, please cover the following subject: *(briefly describe what you want added)*

☐ Other comments:

☐ I would like to discuss the above. Please contact me.

Submitted by: Date:

Telephone Number: Routing Symbol:

FAA Form 1320-19 (10-98)