

COPTER RNAV

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION -- FLIGHT STANDARDS SERVICE
SPECIAL INSTRUMENT APPROACH PROCEDURE -- FLIGHT STANDARDS SERVICE**

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

When the instrument approach procedure of the above type is conducted at the below named airport, it must be conducted in accordance with a charted instrument approach procedure predicated on the specifications contained herein and as specified on accompanying FAA form 8260-7B (as amended). Minimum altitudes must correspond with those established for en route operation in the particular area or as set forth below. The information on this form is considered public and subject to disclosure under the Freedom of Information Act (FOIA).

SPECIFICATION - NOT FOR COCKPIT USE

TERMINAL ROUTES				MISSED APPROACH								
FROM	T O	COURSE AND DISTANCE	ALTITUDE	MAP: LNAV: DUKTE								
DLH VORTAC (40V)	EHOSI (TF)(FB)(40E)(41E)	043.05 / 8.65	3100	CLIMBING LEFT TURN TO 3100 DIRECT LAZNU AND HOLD.								
VURLY (IAF)(40E)(43A)	EHOSI (NOPT) (TF)(FB)(40E)(41E) (43B)	256.78 / 3.33	3100									
EHOSI (IF)(40E)(43I)	CUXER (FB)(40E)(43F)	193.02 / 3.00	3100									
CUXER (FAF)(40E)(43F)	FEMUG/1.00 NM TO DUKTE (FB)(40E)(42S)	193.01 / 2.21										
(SEE FORM 8260-10)												
1. PT ____ SIDE OF COURSE ____ OUTBOUND ____ FT WITHIN ____ MILES OF ____ (IAF)				ADDITIONAL FLIGHT DATA:								
2. HOLD N EHOSI, RT, 193.02 INBOUND, 3100 FT. IN LIEU OF PT (IAF)				HOLD E, RT, 277.93 INBOUND.								
3. FAC: 193.01 FAF: CUXER DIST FAF TO MAP: 3.21 THLD: ____				CHART FAS OBST: 1419 TREE 464929N/0920548W								
4. MIN. ALT: EHOSI 3100, CUXER 3100, FEMUG/1.00 NM TO DUKTE 1880				ROUTE TYPE: A, R								
5. DIST TO THLD FROM OM: ____ MM: ____ IM: ____ 100 HAT: ____ GS ANT: ____				CHART 2049 TOWER 464739N/0920705W.								
6. MIN GS INCPT: ____ GS ALT AT: ____ OM: ____ MM: ____ IM: ____				CHART 1778 TOWER 464742N/0920701W.								
7. GS ANGLE: ____ TCH: ____				(SEE FORM 8260-10)								
8. MSA FROM: DUKTE 3100				MAG VAR: 1W EPOCH YEAR: 2020								
MINIMUMS												
TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT				ALTERNATE: N A X								
CATEGORY =====>	COPTER			B		C		D		E		
	DA/ MDA	VIS	HAS	DA/ MDA	VIS	HAT/ HAA	DA/ MDA	VIS	HAT/ HAA	DA/ MDA	VIS	HAT/ HAA
LNAV MDA	1780	1	434									
NOTES:												
CHART NOTE: USE DULUTH ALTIMETER SETTING.												
CHART NOTE: DME/DME RNP-0.3 NA.												
CHART PLANVIEW NOTE: PROCEED VFR FROM DUKTE OR CONDUCT THE SPECIFIED MISSED APPROACH.												
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS ON DLH VORTAC AIRWAY RADIALS 321 CW 116.												
CHART PLANVIEW NOTE: INCREASE TO 90 KIAS UPON REACHING THE MISSED APPROACH ALTITUDE; MAINTAIN 90 KIAS WHILE IN HOLDING.												
CITY AND STATE		SURFACE ELEVATION: 1346			FACILITY IDENTIFIER:		PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:			SUP:		
DULUTH, MN		AIRPORT NAME:			RNAV		COPTER RNAV (GPS) 193, AMDT 2			AMDT: 1		
		ST MARY'S HOSPITAL								DATED: 02/04/2008		

QUALITY
5
CHECKED

ADDITIONAL FLIGHT DATA/NOTES CONTINUED:

CHART PLANVIEW NOTE: LIMIT FINAL AND MISSED APPROACH TO 70 KIAS.

CHART PLANVIEW NOTE: LIMIT INITIAL AND INTERMEDIATE APPROACH TO 90 KIAS.

CHART NOTE: HELIPORT BEACON AND OBSTRUCTION LIGHTS OPERATED BY PRIOR ARRANGEMENT OR ON FREQUENCY 123.05.

CHART NOTE: HELIPORT FLOOD LIGHTS OPERATED BY PRIOR ARRANGEMENT.

CHART NOTE: USE OF ST MARYS HOSPITAL HELIPORT REQUIRES PERMISSION OF THE OWNER; USE OF THIS PROCEDURE REQUIRES SPECIFIC AUTHORIZATION BY FAA FLIGHT STANDARDS.

SUBMITTED BY

NAME:	OFFICE	DATE:
-------	--------	-------

FLIGHT CHECKED BY

NAME:	Robert Cooper	<i>Digitally signed by</i> VICTOR B NASO	OFFICE	DATE:
			FICO	11/03/2015

Mar 29, 2017 DEVELOPED BY

NAME:	<i>Digitally signed by</i> JEROME A MCCULLOUGH May 08, 2015	JEROME A. MCCULLOUGH	OFFICE	DATE:
			AJV-542	05/06/2015

RECOMMENDED BY

NAME:	<i>Digitally signed by</i> VICTOR B NASO	GEORGE GONZALEZ	OFFICE	DATE:
			AJV-542	

Mar 28, 2017 APPROVED BY

NAME:	AFS-400	DATE:
-------	---------	-------

CHANGES:

1. MAGVAR CHANGED FROM 2E 1985 TO 1W 2015.
2. CHANGED PROEDURE NAME FROM COPTER RNAV (GPS) 190 TO COPTER RNAV (GPS) 193.
3. CHANGED FINAL HEADING FROM 190.01 TO 193.01.
4. CHANGED INTERMEDIATE HEADING AND HOLD-IN-LIEU-OF-PT HEADING FROM 190.02 TO 193.02.
5. CHANGED FEEDER HEADING DLH VORTAC TO EHOSI FROM 040.05 TO 043.05.
6. CHANGED INITIAL HEADING VURLY TO EHOSI FROM 253.78 TO 256.78.
7. ADDED 7 NEW OBSTACLES TO ADDITIONAL FLIGHT DATA THAT PENETRATE THE 10500 FT VFR TRANSITION AREA.
8. CHANGED NOTE SPECIAL AIRCREW QUALIFICATIONS REQUIRED TO USE OF ST MARYS HOSPITAL HELIPORT REQUIRES PERMISSION OF OWNERS; USE OF THIS PROCEDURE REQUIRES SPECIFIC AUTHORIZATION BY FAA FLIGHT STANDARDS.
9. ADDED NOTE INCREASE TO 90 KIAS UPON REACHING THE HOLDING FIX.
10. ADDED NOTE LIMIT INITIAL AND INTERMEDIATE APPROACH TO 90 KIAS. (SEE FORM 8260-10)

REASONS:

- 1, 2, 3, 4, 5, 6. MAGNETIC DECLINATION CHANGED 3 DEGREES.
7. ADDITIONAL OBSTACLES IDENTIFIED THAT PENETRATE THE VFR TRANSITION AREA.
8. REQUIRED NOTE HAS CHANGED.
- 9, 10. NEW REQUIRED NOTES.
11. MAXIMUM TURN IS 90 DEGREES.

QUALITY
5
CHECKED

U.S. DEPARTMENT OF TRANSPORTATION -- - FEDERAL AVIATION ADMINISTRATION
COPTER RNAV SPECIAL INSTRUMENT APPROACH PROCEDURE --
FLIGHT STANDARDS SERVICE - FAR PART 97.33

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

TERMINAL ROUTES, (CONT.):

FROM	TO	COURSE AND DISTANCE	ALTITUDE
FEMUG/1.00 NM TO DUKTE (TF) (FB)(40E)(42S)	DUKTE (MAP) (TF)(FO)(40E) (41Y)(43M)	193.01 / 1.00	
DUKTE (MAP) (40E)(41Y)(43M)	1780 MSL (CA)(42M)	193.01	
1780 MSL	LAZNU (DF)(FO)(40E)(41Y)(43H)		3100

ADDITIONAL FLIGHT DATA, (CONT.):

CHART 1603 TOWER 464726N/0920651W.
 CHART 1663 TOWER 464727N/0920700W.
 CHART 2049 TOWER 464721N/0920651W.
 CHART 1656 TOWER 464720N/0920705W.
 CHART 1610 TOWER 464716N/0920702W.
 CHART 1647 TOWER 464721N/0920710W.
 CHART 2026 TOWER 464730N/0920721W.
 CHART 1606 TOWER 464726N/0920728W.
 CHART 1541 TOWER 464706N/0920710W.
 CHART 1740 TOWER 464709N/0920711W.
 CHART 2049 TOWER 464715N/0920722W.
 CHART 2049 TOWER 464708N/0920712W.
 CHART 1725 TOWER 464720N/0920728W.
 CHART 1767 TOWER 464700N/0920724W.

CHART IN PLANVIEW: ST MARYS HOSPITAL, MN33, 860,193.00/0.86

QUALITY
5
CHECKED

CITY AND STATE

DULUTH, MN

SURFACE ELEVATION: 1346

AIRPORT NAME:

ST MARY'S HOSPITAL

FACILITY
IDENTIFIER:
RNAV

PROCEDURE NO./ AMDT NO./EFFECTIVE DATE:

COPTER RNAV (GPS) 193, AMDT 2

SUP:

AMDT: **NONE**

DATED:

ALL AFFECTED PROCEDURES REVIEWED? <div><input type="checkbox"/> YES</div> <div><input type="checkbox"/> NO</div>		COORDINATES OF FACILITIES		REQUIRED EFFECTIVE DATE	
COORDINATED WITH:					
ATA <div><input type="checkbox"/></div>		AAT <div><input type="checkbox"/></div>		ALPA <div><input type="checkbox"/></div>	
APA <div><input type="checkbox"/></div>		AOPA <div><input type="checkbox"/></div>		NBAA <div><input type="checkbox"/></div>	
OTHER (specify)		<div><input type="checkbox"/></div>		<div><input type="checkbox"/></div>	
FLIGHT CHECKED BY					
NAME:				FIFO	DATE:
DEVELOPED BY					
NAME:				FIFO	DATE:
APPROVED BY					
NAME:				FIFO	DATE:
CHANGES:					
11. CHANGED PROCEDURE NA FOR ARRIVALS ON DLH VORTAC AIRWAY RADIALS FROM 009 CW 095 TO 321 CW 116.					
REASONS:					



STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD		
--	--	--

	PART - A OBSTRUCTION DATA
--	---------------------------

1. APP SEGMENT			FROM		TO		OBSTRUCTION		COORDINATES		ELEV. MSL	ROC	ALT. ADJUSTMENTS		MIN. ALT.				
FEEDER			DLH VORTAC		EHOSI		1. AAO		465336.00N/0920618.00W		1710 (4E)	1000	AT390		3100				
							2. TERRAIN		465336.00N/0920618.00W		1510 (1500)		AS1500		3000				
INITIAL			VURLY		EHOSI		3. AAO		465439.00N/0920424.00W		1647 (4E)	1000	AT453		3100				
							4. TERRAIN		465439.00N/0920424.00W		1447 (1400)		AS1500		2900				
INTERMEDIATE			EHOSI		CUXER		5. AAO		465245.00N/0920539.00W		1677 (4E)	500	AC98 AT825		3100				
							6. TERRAIN		465245.00N/0920539.00W		1477 (1500)		AS1500		3000				
FINAL: LNAV			CUXER		FEMUG/1.00 NM TO		7. AAO		465148.86N/0920459.36W		1629 (2C)	250			1880				
					DUKTE														
FINAL: LNAV STEPDOWN			FEMUG/1.00 NM TO		DUKTE		8. TREE		464929.12N/0920548.19W		1419 (2C)	250			1680				
			DUKTE																
2. HOLD-IN-LIEU-OF-PT			EHOSI		P-4		9. AAO		470333.00N/0920324.00W		1788 (4E)	1000			2800				
							10. TERRAIN		470333.00N/0920324.00W		1588 (1600)		AS1500		3100				
3. MISSED APPROACH	MAP:		DUKTE		LAZNU							ASC			3100				
							11. AAO		464818.00N/0920657.00W		1316 (4E)	1000			2400				
	ELEV:		1430				12. TERRAIN		464818.00N/0920657.00W		1116 (1100)		AS1500		2600				
4. CIRCLING AREA		DISTANCE	REQUIRED	350	ACTUAL	HT. ABV. ARPT.													
CATEGORY A	1.3 NM																		
CATEGORY B	1.5 NM																		
CATEGORY C	1.7 NM																		
CATEGORY D	2.3 NM																		
CATEGORY E	4.5 NM																		
5. MINIMUM SAFE ALTITUDES																			
PRIMARY NAVAID: DUKTE																			
SECTOR		OBSTRUCTION		BRG/DIST		ELEVATION (MSL)		M S A		SECTOR		OBSTRUCTION		BRG/DIST		ELEVATION (MSL)		M S A	
360-360		AAO		032/24.2		2087 (4E)		3100											
CITY AND STATE				SURFACE ELEVATION: 860				FACILITY				PROCEDURE AND AMENDMENT NO:				REGION			
DULUTH, MN				AIRPORT NAME:				RNAV				COPTER RNAV (GPS) 193, AMDT 2				AGL			
				ST MARY'S HOSPITAL															

PART B - SUPPLEMENTAL DATA										PART C - REMARKS: PRECIPITOUS TERRAIN EVALUATION COMPLETED. SEE ATTACHED AIRSPACE LETTER. VDP NA- REMOTE ALTIMETER IN USE AND VDP WITHIN 1.00 NM OF MAP. KDLH HAS REDUNDANT WEATHER AND ALTIMETER SOURCES AND IS WITHIN 5 NM OF ST MARYS HOSPITAL HELIPORT, NO BACK UP ALTIMETER OR REMOTE ALTIMETER ADJUSTMENT REQUIRED. 10,500 FT VFR TRANSITION AREA CHARTED OBSTACLES. CHART 2049 TOWER 464739N/0920705W. CHART 1778 TOWER 464742N/0920701W. CHART 1603 TOWER 464726N/0920651W. CHART 1663 TOWER 464727N/0920700W. CHART 2049 TOWER 464721N/0920651W. CHART 1656 TOWER 464720N/0920705W. CHART 1610 TOWER 464716N/0920702W. CHART 1647 TOWER 464721N/0920710W. CHART 2026 TOWER 464730N/0920721W. CHART 1606 TOWER 464726N/0920728W. CHART 1541 TOWER 464706N/0920710W. CHART 1740 TOWER 464709N/0920711W. CHART 2049 TOWER 464715N/0920722W. CHART 2049 TOWER 464708N/0920712W. CHART 1725 TOWER 464720N/0920728W. CHART 1767 TOWER 464700N/0920724W.	
1. COMMUNICATIONS WITH:			2. WEATHER SERVICE			3. ALTIMETER SETTING					
DLH TOWER DLH APP CON				N W S	OTHER: ASOS		SOURCE:KDLH				
				F A A			DISTANCE: 4.89				
				A / C			HOURS REMOTE OPERATION: 24				
SATISFACTORY ON:											
X	V H F	X	U H F		H F	LOCATION: KDLH			ADJUSTMENT: 0		
4. MONITOR STATUS	PRIMARY NAVAID:										
	MONITOR POINT:										
	HRS OPTN:	CAT 1		CAT 3							
5. APPROACH & RUNWAY LIGHTING		ALS									
		(S) SALS									
		MAL S									
		HIRL									
		MIRL									
		REIL									
		TDZ									
		C/LINE									
		X	OTHER (SPECIFY) BEACON, OBSTRUCTION LIGHTS, FLOOD LIGHTS								
6. RUNWAY MARKINGS		BASIC									
		ALL WEATHER									
		INSTRUMENT									
7. RUNWAY VISUAL RANGE		APPROACH									
		MIDFIELD									
		ROLL OUT									
8. GLIDE PATH		GP ANGLE:				ELEV RWY THRESHOLD:					
		DISTANCE FROM RWY:				ELEV GP ANTENNA:					
						THRESHOLD CROSSING HEIGHT:					
9. FINAL APPROACH COURSE AIMING				RUNWAY THRESHOLD					FT. FROM THRESHOLD		
				ON CENTERLINE					FT. FROM CENTERLINE		
10. WAIVERS: NONE											
PART D - PREPARED BY: JEROME A. MCCULLOUGH						DATE: 05/06/2015					
TITLE: AERONAUTICAL INFORMATION SPECIALIST						OFFICE: AJV-353					

