

DME DME Assessment Results for SCTWN4 path DNGER_RALEY

Results Summary

Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jeanette CTR Roller
Project File:	C:\Users\Jeanette CTR Roller\Desktop\20210617 Desktop_JT\KSMF SIDs 30730\SCTWN FOUR Final Docs\20210803 SCTWN KSMF SID.tgs
Output File:	C:\Users\Jeanette CTR Roller\Desktop\20210617 Desktop_JT\KSMF SIDs 30730\SCTWN FOUR Final Docs\KSMF [IFPA] SCTWN4 20210803_1449 MDT\DNGER_RALEY\KSMF SCTWN4 SID DNGER RALEY 20210803_1449 MDT.pdf
Procedure Name:	SCTWN4
Software: DmeDmePlugin:	6.3.0
Date/Time:	08/03/2021 14:49 MDT
Databases:	DTED Level 0 Max

Failures

No Failures

Warnings

No Warnings

Notes For Flight Check

None

Flight Plan

Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
DNGER	WP	N38° 38' 54.47", W120° 42' 20.48"	9000	VNAV	200	FLY_BY	TF
RALEY	WP	N38° 34' 19.70", W118° 14' 03.63"	19000	VNAV	260	FLY_BY	TF

Flyability

Flight Type:	SID
Selected Airport:	KSMF [IFPA]
Climb Gradient:	None assigned
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

DME DME Assessment Results for SCTWN4 path DNGER_RALEY

DME/DME	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Not included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Enabled
Disabled DMEs:	None

DME/DME (Continued)										
DMEs Used										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	LIN	N38° 04' 28.49", W121° 00' 13.89"	17.0 E	130	H	IFPA	NO	Enabled	15 %	15 %
2	SWR	N39° 10' 49.16", W120° 16' 10.60"	16.0 E	40	L	IFPA	NO	Enabled	79.2 %	79 %
3	ILA	N39° 04' 16.23", W122° 01' 38.17"	18.0 E	40	L	IFPA	NO	Enabled	19.2 %	19.1 %
4	LLC	N40° 07' 30.95", W118° 34' 39.34"	16.0 E	40	L	IFPA	NO	Enabled	46.3 %	46.5 %
5	FMG	N39° 31' 52.60", W119° 39' 21.87"	16.0 E	130	H	IFPA	NO	Enabled	22.7 %	22.6 %
6	MOD	N37° 37' 38.55", W120° 57' 28.33"	17.0 E	130	H	IFPA	NO	Enabled	39.4 %	39.3 %
7	BAM	N40° 34' 08.69", W116° 55' 20.12"	13.0 E	130	H	IFPA	NO	Enabled	6 %	6.3 %
8	MVA	N38° 33' 55.08", W118° 01' 58.27"	17.0 E	130	H	IFPA	NO	Enabled	38.1 %	38.3 %
9	HNW	N38° 43' 29.01", W120° 44' 57.35"	17.0 E	40	L	IFPA	NO	Enabled	31.2 %	31.1 %

DME DME Assessment Results for SCTWN4 path DNGER_RALEY

Flight Check DME Selection						
Distance [NM]	Selected DMEs					Alternate
0.0	ILA	LIN				
0.8	ILA	LIN	HNW			
8.9	SWR	HNW	LIN	ILA		
9.3	MOD	HNW	SWR	LIN	ILA	
11.4	MOD	HNW	SWR	ILA		
22.3	SWR	HNW	MOD			
36.0	MOD	HNW				
37.0						
41.2	SWR	MOD				
51.6	SWR	MOD	FMG			
55.8	FMG	SWR				
57.9	SWR	MOD	LLC	FMG		
59.5	LLC	SWR	FMG			
62.3	FMG	SWR				
65.3	SWR	MOD	FMG			
65.4	SWR	MOD	LLC	FMG		
67.3	FMG	LIN	SWR			
68.4	FMG	LIN	LLC	SWR		
71.8	FMG	MVA	LIN	LLC	SWR	
73.3	FMG	MVA	LLC	SWR		
73.5	FMG	MVA	LLC			
77.8	FMG	MVA	LLC	LIN		
78.0	LLC	MVA				
80.3	LLC	MVA	SWR			
109.0	LLC	MVA	SWR	BAM		
112.9	LLC	MVA	BAM			

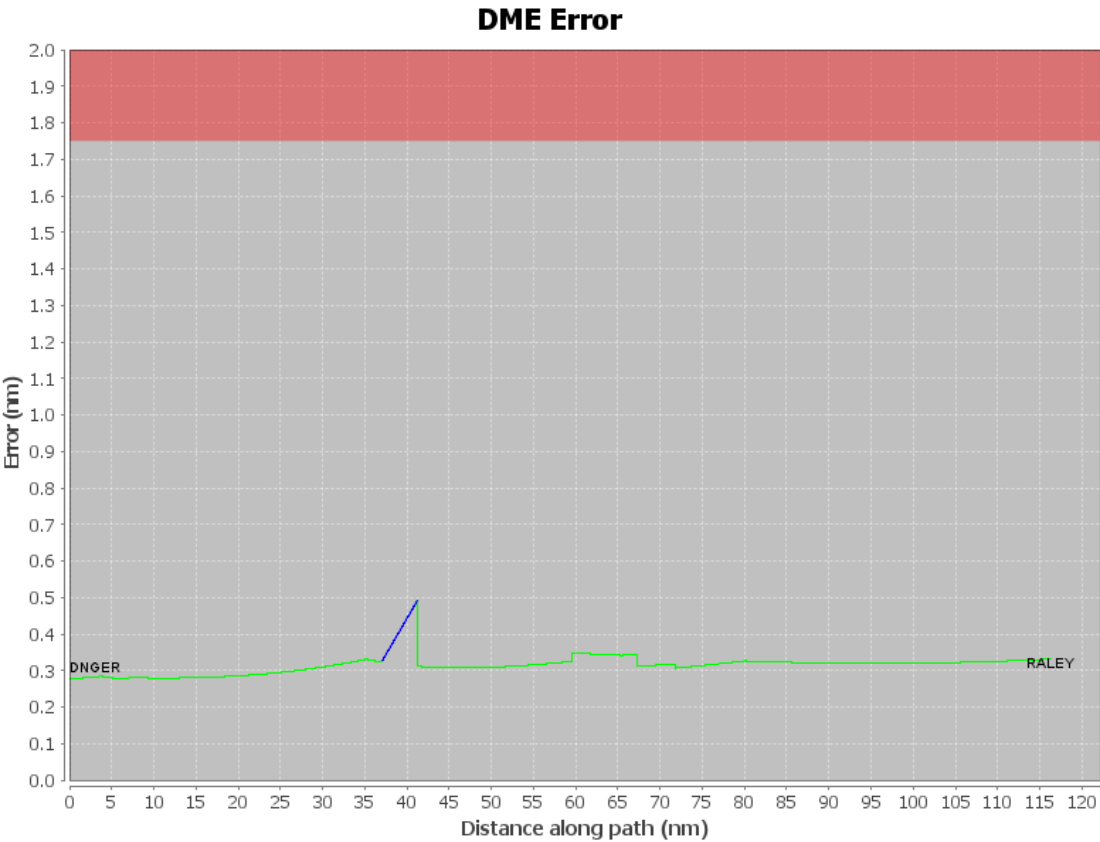
Inertial Drift Segments			
#	Start Location	End Location	Length [NM]
1	N38° 37' 47.35", W119° 55' 04.61"	N38° 37' 38.61", W119° 49' 45.83"	4.166

Available DMEs by Waypoints		
Waypoint Before	Waypoint After	DME List
DNGER	RALEY	LIN, HNW, FMG, LLC, MOD, MVA, BAM, ILA, SWR

DME DME Assessment Results for SCTWN4 path DNGER_RALEY

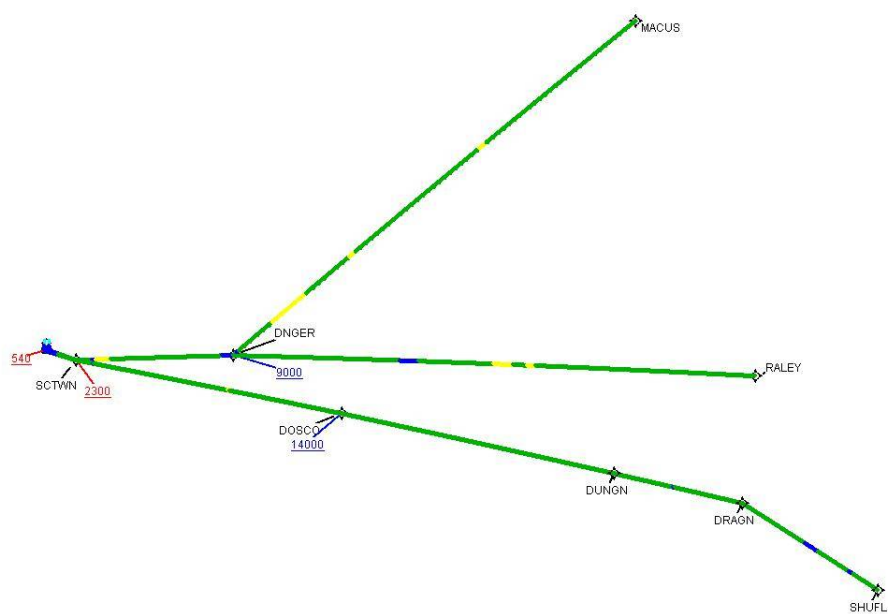
User Data Files								
#	File Name							
1	New Analysis.udt							
User DMEs								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ILA FAA 698161-15 ILA [IFPA]	N39° 04' 16.23", W122° 01' 38.17"	18.0 E	40	49.1	114.4	ILA FAA 698161-15	
ESV:		Bearing [True]: 89.0° to 141.0° Bearing [Mag]: 71.0° to 123.0°				Arc Distance: Out to 89.0 NM Altitude: 7100.0 to 20000.0 ft		
2	BAM FAA 701331-005 BAM [IFPA]	N40° 34' 08.69", W116° 55' 20.12"	13.0 E	130	4544.1	112.2	BAM FAA 701331-005	
ESV:		Bearing [True]: 205.0° to 212.0° Bearing [Mag]: 192.0° to 199.0°				Arc Distance: Out to 141.0 NM Altitude: 18300.0 to 19100.0 ft		
3	FMG FAA 698244-45 FMG [IFPA]	N39° 31' 52.60", W119° 39' 21.87"	16.0 E	130	5949.5	117.9	FMG FAA 698244-45	
ESV:		Bearing [True]: 151.0° to 178.0° Bearing [Mag]: 135.0° to 162.0°				Arc Distance: Out to 66.0 NM Altitude: 13000.0 to 22000.0 ft		
4	LLC FAA 704238-22 LLC [IFPA]	N40° 07' 30.95", W118° 34' 39.34"	16.0 E	40	4790.3	116.5	LLC FAA 704238-22	
ESV:		Bearing [True]: 168.0° to 206.0° Bearing [Mag]: 152.0° to 190.0°				Arc Distance: Out to 100.0 NM Altitude: 13600.0 to 24000.0 ft		
5	MVA FAA 702652-51 MVA [IFPA]	N38° 33' 55.08", W118° 01' 58.27"	17.0 E	130	7860	115.1	MVA FAA 702652-51	
ESV:		Bearing [True]: 316.0° to 338.0° Bearing [Mag]: 299.0° to 321.0°				Arc Distance: Out to 91.0 NM Altitude: 15800.0 to 24000.0 ft		
6	LIN FAA 680309-24 LIN [IFPA]	N38° 04' 28.49", W121° 00' 13.89"	17.0 E	130	266.1	114.8	LIN FAA 680309-24	
ESV:		Bearing [True]: 18.0° to 40.0° Bearing [Mag]: 1.0° to 23.0°				Arc Distance: Out to 72.0 NM Altitude: 9000.0 to 16000.0 ft		
7	MVA FAA 702652-50 MVA [IFPA]	N38° 33' 55.08", W118° 01' 58.27"	17.0 E	130	7860	115.1	MVA FAA 702652-50	
ESV:		Bearing [True]: 248.0° to 297.0° Bearing [Mag]: 231.0° to 280.0°				Arc Distance: Out to 54.0 NM Altitude: 14500.0 to 24000.0 ft		
8	SWR FAA 701993-23 SWR [IFPA]	N39° 10' 49.16", W120° 16' 10.60"	16.0 E	40	8850	113.2	SWR FAA 701993-23	
ESV:		Bearing [True]: 107.0° to 151.0° Bearing [Mag]: 91.0° to 135.0°				Arc Distance: Out to 65.0 NM Altitude: 12300.0 to 28000.0 ft		
9	TPH FAA 704262-073 TPH [IFPA]	N38° 01' 50.32", W117° 02' 00.61"	17.0 E	130	5344.6	116.0	TPH FAA 704262-073	
ESV:		Bearing [True]: 250.0° to 263.0° Bearing [Mag]: 233.0° to 246.0°				Arc Distance: Out to 43.0 NM Altitude: 18900.0 to 19100.0 ft		
10	SWR FAA 701993-24 SWR [IFPA]	N39° 10' 49.16", W120° 16' 10.60"	16.0 E	40	8850	113.2	SWR FAA 701993-24	
ESV:		Bearing [True]: 107.0° to 151.0° Bearing [Mag]: 91.0° to 135.0°				Arc Distance: Out to 100.0 NM Altitude: 15900.0 to 28000.0 ft		
11	MOD FAA 765548-16 MOD [IFPA]	N37° 37' 38.55", W120° 57' 28.33"	17.0 E	130	93	114.6	MOD FAA 765548-16	
ESV:		Bearing [True]: 18.0° to 53.0° Bearing [Mag]: 1.0° to 36.0°				Arc Distance: Out to 93.0 NM Altitude: 9800.0 to 16000.0 ft		
12	LIN FAA 680309-25 LIN [IFPA]	N38° 04' 28.49", W121° 00' 13.89"	17.0 E	130	266.1	114.8	LIN FAA 680309-25	
ESV:		Bearing [True]: 316.0° to 333.0° Bearing [Mag]: 299.0° to 316.0°				Arc Distance: Out to 47.0 NM Altitude: 2000.0 to 16000.0 ft		
13	SAC FAA 704199-56 SAC [IFPA]	N38° 26' 37.46", W121° 33' 05.95"	17.0 E	130	2.7	115.2	SAC FAA 704199-56	
ESV:		Bearing [True]: 15.0° to 66.0° Bearing [Mag]: 358.0° to 49.0°				Arc Distance: Out to 99.0 NM Altitude: 7100.0 to 16000.0 ft		
14	LLC FAA 704238-23 LLC [IFPA]	N40° 07' 30.95", W118° 34' 39.34"	16.0 E	40	4790.3	116.5	LLC FAA 704238-23	
ESV:		Bearing [True]: 217.0° to 232.0° Bearing [Mag]: 201.0° to 216.0°				Arc Distance: Out to 76.0 NM Altitude: 13300.0 to 24000.0 ft		
15	ILA FAA 698161-21 ILA [IFPA]	N39° 04' 16.23", W122° 01' 38.17"	18.0 E	40	49.1	114.4	ILA FAA 698161-21	
ESV:		Bearing [True]: 117.0° to 140.0° Bearing [Mag]: 99.0° to 122.0°				Arc Distance: Out to 43.0 NM Altitude: 1600.0 to 20000.0 ft		
16	HZN FAA 701367-040 HZN [IFPA]	N39° 30' 59.04", W118° 59' 51.67"	17.0 E	40	4085.6	114.1	HZN FAA 701367-040	
ESV:		Bearing [True]: 147.0° to 154.0° Bearing [Mag]: 130.0° to 137.0°				Arc Distance: Out to 116.0 NM Altitude: 18900.0 to 19100.0 ft		

DME DME Assessment Results for SCTWN4 path DNGER_RALEY



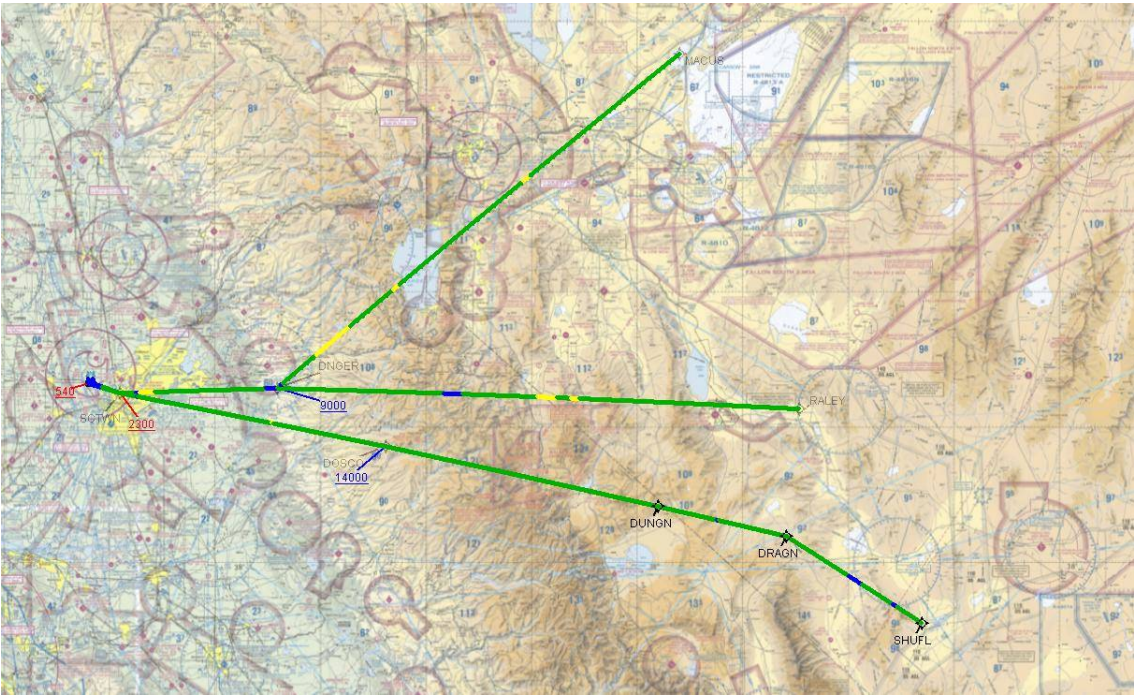
DME DME Assessment Results for SCTWN4 path DNGER_RALEY

Graphic Depiction 1



DME DME Assessment Results for SCTWN4 path DNGER_RALEY

Graphic Depiction 2



DME DME Assessment Results for SCTWN4 path KSMF:RW17L:DER_SHUFL

Results Summary

Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jeanette CTR Roller
Project File:	C:\Users\Jeanette CTR Roller\Desktop\20210617 Desktop_JT\KSMF SIDs 30730\SCTWN FOUR Final Docs\20210803 SCTWN KSMF SID.tgs
Output File:	C:\Users\Jeanette CTR Roller\Desktop\20210617 Desktop_JT\KSMF SIDs 30730\SCTWN FOUR Final Docs\KSMF [IFPA] SCTWN4 20210803_1449 MDT\KSMF-RW17L-DER_SHUFL\KSMF SCTWN4 SID KSMF RW17L SHUFL 20210803_1449 MDT.pdf
Procedure Name:	SCTWN4
Software: DmeDmePlugin:	6.3.0
Date/Time:	08/03/2021 14:49 MDT
Databases:	DTED Level 0 Max

Failures

No Failures

Warnings

No Warnings

Notes For Flight Check

None

Flight Plan

Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KSMF:RW17L:DER	WP	N38° 41' 00.65", W121° 34' 49.64"	22.1	VNAV	130	FLY_OVER	TF
SCTWN	WP	N38° 37' 50.57", W121° 27' 04.47"	2300	VNAV	200	FLY_BY	TF
DOSCO	WP	N38° 25' 59.96", W120° 11' 35.43"	14000	VNAV	240	FLY_BY	TF
DUNGN	WP	N38° 12' 43.12", W118° 54' 15.01"	19000	VNAV	260	FLY_BY	TF
DRAGN	WP	N38° 06' 08.83", W118° 17' 51.76"	19000	VNAV	260	FLY_BY	TF
SHUFL	WP	N37° 46' 54.63", W117° 39' 21.52"	19000	VNAV	260	FLY_BY	TF
Climb Gradient: 500.0 ft/NM up to 540.0 ft MSL 200.0 ft/NM							

Flyability

Flight Type:	SID
Selected Airport:	KSMF [IFPA]
Climb Gradient:	500.0 ft/NM up to 540.0 ft MSL 200.0 ft/NM
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

DME DME Assessment Results for SCTWN4 path KSMF:RW17L:DER_SHUFL

DME/DME	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Not included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Enabled
Disabled DMEs:	None

DME/DME (Continued)										
DMEs Used										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	LIN	N38° 04' 28.49", W121° 00' 13.89"	17.0 E	130	H	IFPA	NO	Enabled	52.8 %	51.3 %
2	HZN	N39° 30' 59.04", W118° 59' 51.67"	17.0 E	40	L	IFPA	NO	Enabled	3.3 %	3.8 %
3	SWR	N39° 10' 49.16", W120° 16' 10.60"	16.0 E	40	L	IFPA	NO	Enabled	22.6 %	24.3 %
4	ILA	N39° 04' 16.23", W122° 01' 38.17"	18.0 E	40	L	IFPA	NO	Enabled	21.3 %	18.2 %
5	MCC	N38° 40' 02.62", W121° 24' 14.98"	17.0 E	25	T	IFPA	NO	Enabled	12.5 %	11 %
6	OAL	N38° 00' 11.74", W117° 46' 13.61"	17.0 E	130	H	IFPA	NO	Enabled	20.3 %	23.3 %
7	MOD	N37° 37' 38.55", W120° 57' 28.33"	17.0 E	130	H	IFPA	NO	Enabled	49.2 %	51 %
8	MVA	N38° 33' 55.08", W118° 01' 58.27"	17.0 E	130	H	IFPA	NO	Enabled	14.3 %	16.3 %
9	SAC	N38° 26' 37.46", W121° 33' 05.95"	17.0 E	130	H	IFPA	NO	Enabled	45.1 %	43.2 %
10	HNW	N38° 43' 29.01", W120° 44' 57.35"	17.0 E	40	L	IFPA	NO	Enabled	36 %	32.5 %
11	TPH	N38° 01' 50.32", W117° 02' 00.61"	17.0 E	130	H	IFPA	NO	Enabled	4.6 %	5.2 %

DME DME Assessment Results for SCTWN4 path KSMF:RW17L:DER_SHUFL

Flight Check DME Selection						
Distance [NM]	Selected DMEs					Alternate
0.0						
3.2	SAC	ILA				
3.8						
3.9	SAC	ILA				
6.4	SAC	ILA	LIN			
8.9	ILA	SAC				
11.2						
11.5	LIN	SAC				
11.9	LIN	HNW	MCC	SAC		
33.4	ILA	HNW	LIN	SAC		
42.1	SAC	HNW	LIN			
42.4	ILA	LIN	HNW			
48.9	ILA	MOD	LIN	HNW		
57.8	MOD	HNW	ILA			
61.7	MOD	HNW				
74.3	MOD	HNW	SAC			
75.6	SAC	MOD				
95.9	SWR	MOD	LIN	SAC		
104.0	SWR	MOD	LIN			
118.0	SWR	MOD	LIN	SAC		
134.4	SWR	MOD	LIN			
143.6						
144.2	LIN	MVA				
145.5	MVA	OAL	LIN			
148.4	MVA	OAL				
150.2	MVA	OAL	MOD			
153.3	MVA	OAL				
153.4	MVA	OAL	MOD			
155.6	MVA	OAL				
176.2						
179.6	HZN	OAL				
184.2	TPH	HZN	OAL			
187.1	TPH	OAL				
187.9						
189.1	OAL	TPH				

Inertial Drift Segments			
#	Start Location	End Location	Length [NM]
1	N38° 40' 58.51", W121° 34' 49.68"	N38° 39' 14.82", W121° 32' 11.37"	3.2043
2	N38° 39' 02.91", W121° 31' 27.93"	N38° 39' 02.12", W121° 31' 25.03"	0.0401
3	N38° 37' 08.82", W121° 22' 28.83"	N38° 37' 04.38", W121° 21' 59.60"	0.3889
4	N38° 09' 44.77", W118° 37' 38.90"	N38° 09' 37.05", W118° 36' 56.08"	0.5773
5	N37° 57' 18.41", W118° 00' 04.43"	N37° 55' 29.68", W117° 56' 26.84"	3.392
6	N37° 51' 03.19", W117° 47' 35.21"	N37° 50' 26.06", W117° 46' 21.33"	1.1547

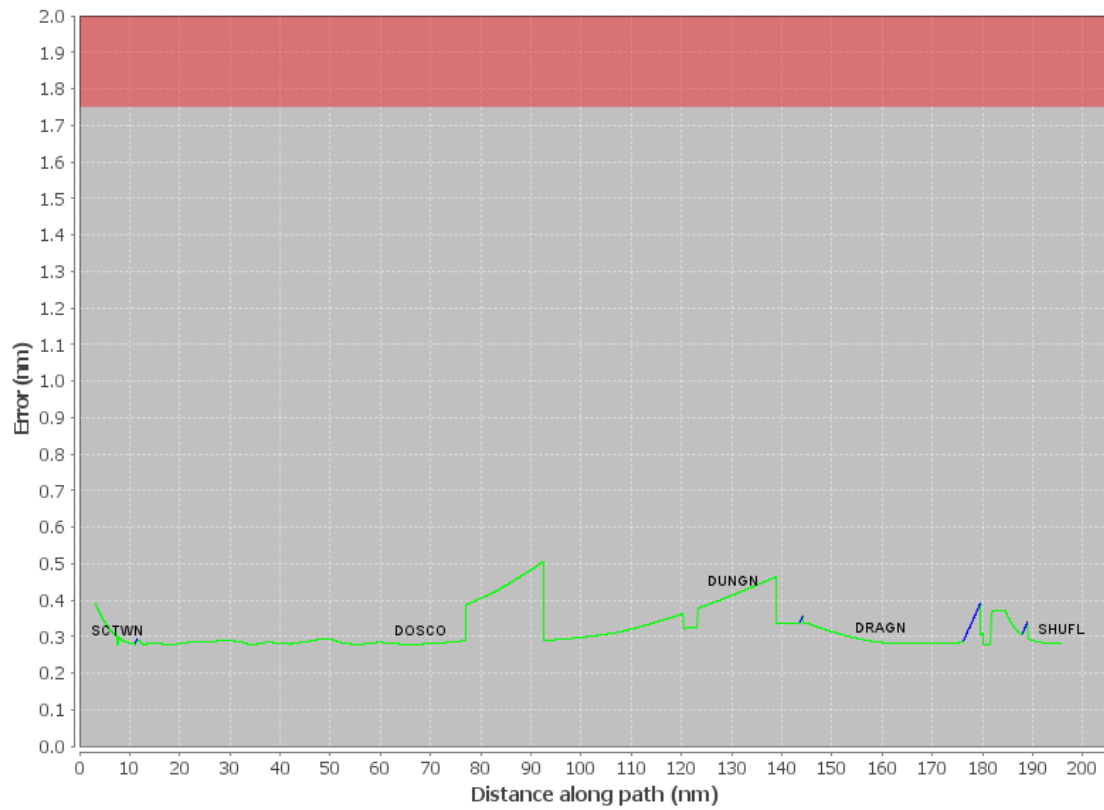
Available DMEs by Waypoints		
Waypoint Before	Waypoint After	DME List
KSMF:RW17L:DER	SCTWN	LIN, SAC, ILA
SCTWN	DOSCO	LIN, HNW, MOD, SAC, MCC, ILA
DOSCO	DUNGN	HNW, LIN, MOD, SAC, SWR
DUNGN	DRAGN	LIN, MOD, SAC, MVA, OAL, SWR
DRAGN	SHUFL	MVA, OAL, HZN, TPH

DME DME Assessment Results for SCTWN4 path KSMF:RW17L:DER_SHUFL

User Data Files								
#	File Name							
1	New Analysis.udt							
User DMEs								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ILA FAA 698161-15 ILA [IFPA]	N39° 04' 16.23", W122° 01' 38.17"	18.0 E	40	49.1	114.4	ILA FAA 698161-15	
ESV:		Bearing [True]: 89.0° to 141.0° Bearing [Mag]: 71.0° to 123.0°				Arc Distance: Out to 89.0 NM Altitude: 7100.0 to 20000.0 ft		
2	BAM FAA 701331-005 BAM [IFPA]	N40° 34' 08.69", W116° 55' 20.12"	13.0 E	130	4544.1	112.2	BAM FAA 701331-005	
ESV:		Bearing [True]: 205.0° to 212.0° Bearing [Mag]: 192.0° to 199.0°				Arc Distance: Out to 141.0 NM Altitude: 18300.0 to 19100.0 ft		
3	FMG FAA 698244-45 FMG [IFPA]	N39° 31' 52.60", W119° 39' 21.87"	16.0 E	130	5949.5	117.9	FMG FAA 698244-45	
ESV:		Bearing [True]: 151.0° to 178.0° Bearing [Mag]: 135.0° to 162.0°				Arc Distance: Out to 66.0 NM Altitude: 13000.0 to 22000.0 ft		
4	LLC FAA 704238-22 LLC [IFPA]	N40° 07' 30.95", W118° 34' 39.34"	16.0 E	40	4790.3	116.5	LLC FAA 704238-22	
ESV:		Bearing [True]: 168.0° to 206.0° Bearing [Mag]: 152.0° to 190.0°				Arc Distance: Out to 100.0 NM Altitude: 13600.0 to 24000.0 ft		
5	MVA FAA 702652-51 MVA [IFPA]	N38° 33' 55.08", W118° 01' 58.27"	17.0 E	130	7860	115.1	MVA FAA 702652-51	
ESV:		Bearing [True]: 316.0° to 338.0° Bearing [Mag]: 299.0° to 321.0°				Arc Distance: Out to 91.0 NM Altitude: 15800.0 to 24000.0 ft		
6	LIN FAA 680309-24 LIN [IFPA]	N38° 04' 28.49", W121° 00' 13.89"	17.0 E	130	266.1	114.8	LIN FAA 680309-24	
ESV:		Bearing [True]: 18.0° to 40.0° Bearing [Mag]: 1.0° to 23.0°				Arc Distance: Out to 72.0 NM Altitude: 9000.0 to 16000.0 ft		
7	MVA FAA 702652-50 MVA [IFPA]	N38° 33' 55.08", W118° 01' 58.27"	17.0 E	130	7860	115.1	MVA FAA 702652-50	
ESV:		Bearing [True]: 248.0° to 297.0° Bearing [Mag]: 231.0° to 280.0°				Arc Distance: Out to 54.0 NM Altitude: 14500.0 to 24000.0 ft		
8	SWR FAA 701993-23 SWR [IFPA]	N39° 10' 49.16", W120° 16' 10.60"	16.0 E	40	8850	113.2	SWR FAA 701993-23	
ESV:		Bearing [True]: 107.0° to 151.0° Bearing [Mag]: 91.0° to 135.0°				Arc Distance: Out to 65.0 NM Altitude: 12300.0 to 28000.0 ft		
9	TPH FAA 704262-073 TPH [IFPA]	N38° 01' 50.32", W117° 02' 00.61"	17.0 E	130	5344.6	116.0	TPH FAA 704262-073	
ESV:		Bearing [True]: 250.0° to 263.0° Bearing [Mag]: 233.0° to 246.0°				Arc Distance: Out to 43.0 NM Altitude: 18900.0 to 19100.0 ft		
10	SWR FAA 701993-24 SWR [IFPA]	N39° 10' 49.16", W120° 16' 10.60"	16.0 E	40	8850	113.2	SWR FAA 701993-24	
ESV:		Bearing [True]: 107.0° to 151.0° Bearing [Mag]: 91.0° to 135.0°				Arc Distance: Out to 100.0 NM Altitude: 15900.0 to 28000.0 ft		
11	MOD FAA 765548-16 MOD [IFPA]	N37° 37' 38.55", W120° 57' 28.33"	17.0 E	130	93	114.6	MOD FAA 765548-16	
ESV:		Bearing [True]: 18.0° to 53.0° Bearing [Mag]: 1.0° to 36.0°				Arc Distance: Out to 93.0 NM Altitude: 9800.0 to 16000.0 ft		
12	LIN FAA 680309-25 LIN [IFPA]	N38° 04' 28.49", W121° 00' 13.89"	17.0 E	130	266.1	114.8	LIN FAA 680309-25	
ESV:		Bearing [True]: 316.0° to 333.0° Bearing [Mag]: 299.0° to 316.0°				Arc Distance: Out to 47.0 NM Altitude: 2000.0 to 16000.0 ft		
13	SAC FAA 704199-56 SAC [IFPA]	N38° 26' 37.46", W121° 33' 05.95"	17.0 E	130	2.7	115.2	SAC FAA 704199-56	
ESV:		Bearing [True]: 15.0° to 66.0° Bearing [Mag]: 358.0° to 49.0°				Arc Distance: Out to 99.0 NM Altitude: 7100.0 to 16000.0 ft		
14	LLC FAA 704238-23 LLC [IFPA]	N40° 07' 30.95", W118° 34' 39.34"	16.0 E	40	4790.3	116.5	LLC FAA 704238-23	
ESV:		Bearing [True]: 217.0° to 232.0° Bearing [Mag]: 201.0° to 216.0°				Arc Distance: Out to 76.0 NM Altitude: 13300.0 to 24000.0 ft		
15	ILA FAA 698161-21 ILA [IFPA]	N39° 04' 16.23", W122° 01' 38.17"	18.0 E	40	49.1	114.4	ILA FAA 698161-21	
ESV:		Bearing [True]: 117.0° to 140.0° Bearing [Mag]: 99.0° to 122.0°				Arc Distance: Out to 43.0 NM Altitude: 1600.0 to 20000.0 ft		
16	HZN FAA 701367-040 HZN [IFPA]	N39° 30' 59.04", W118° 59' 51.67"	17.0 E	40	4085.6	114.1	HZN FAA 701367-040	
ESV:		Bearing [True]: 147.0° to 154.0° Bearing [Mag]: 130.0° to 137.0°				Arc Distance: Out to 116.0 NM Altitude: 18900.0 to 19100.0 ft		

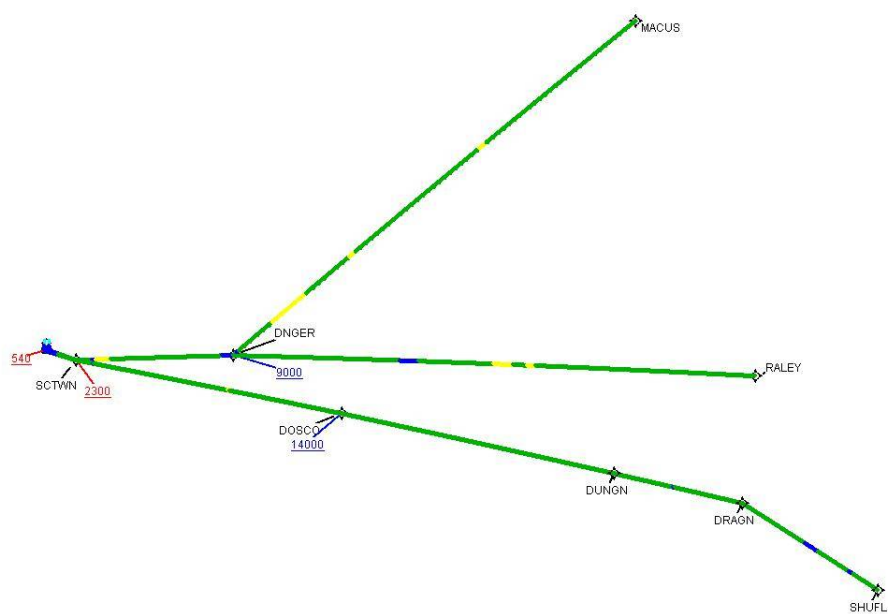
DME DME Assessment Results for SCTWN4 path KSMF:RW17L:DER_SHUFL

DME Error



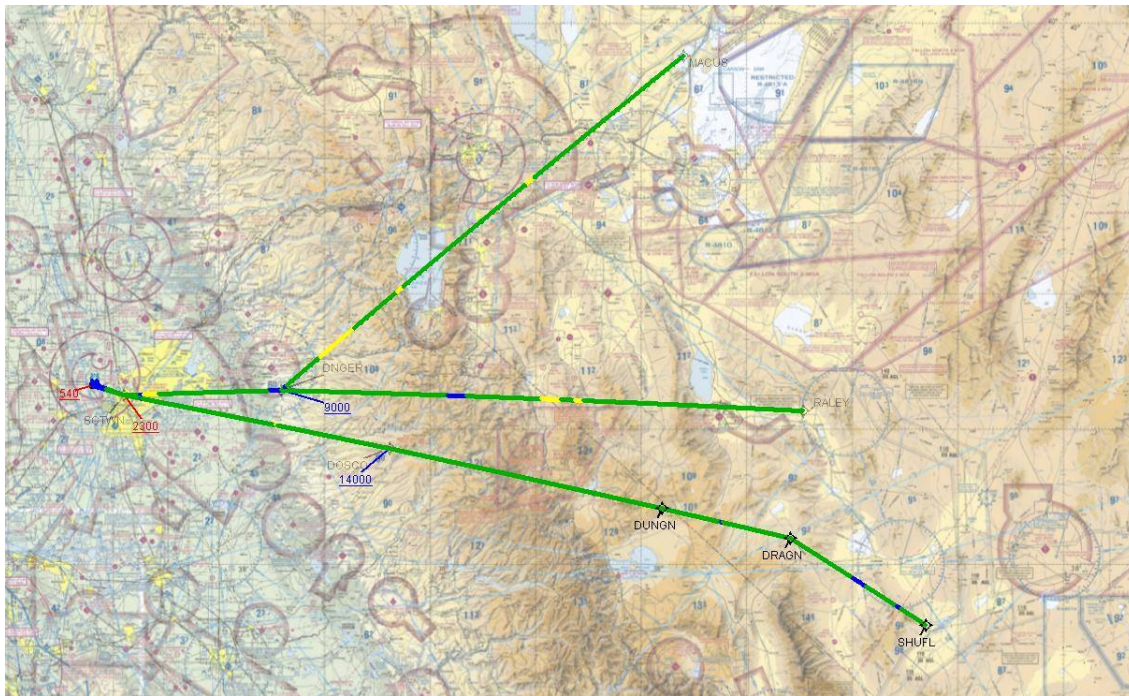
DME DME Assessment Results for SCTWN4 path KSMF:RW17L:DER_SHUFL

Graphic Depiction 1



DME DME Assessment Results for SCTWN4 path KSMF:RW17L:DER_SHUFL

Graphic Depiction 2



DME DME Assessment Results for SCTWN4 path KSMF:RW17R:DER_MACUS

Results Summary

Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jeanette CTR Roller
Project File:	C:\Users\Jeanette CTR Roller\Desktop\20210617 Desktop_JT\KSMF SIDs 30730\SCTWN FOUR Final Docs\20210803 SCTWN KSMF SID.tgs
Output File:	C:\Users\Jeanette CTR Roller\Desktop\20210617 Desktop_JT\KSMF SIDs 30730\SCTWN FOUR Final Docs\KSMF [IFPA] SCTWN4 20210803_1449 MDT\KSMF-RW17R- DER_MACUS\KSMF SCTWN4 SID KSMF RW17R MACUS 20210803_1449 MDT.pdf
Procedure Name:	SCTWN4
Software: DmeDmePlugin:	6.3.0
Date/Time:	08/03/2021 14:49 MDT
Databases:	DTED Level 0 Max

Failures

No Failures

Warnings

No Warnings

Notes For Flight Check

None

Flight Plan

Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KSMF:RW17R:DER	WP	N38° 41' 01.44", W121° 36' 05.31"	22.5	VNAV	130	FLY_OVER	TF
SCTWN	WP	N38° 37' 50.57", W121° 27' 04.47"	2300	VNAV	200	FLY_BY	TF
DNGER	WP	N38° 38' 54.47", W120° 42' 20.48"	9000	VNAV	200	FLY_BY	TF
MACUS	WP	N39° 53' 00.00", W118° 48' 00.00"	18000	VNAV	240	FLY_BY	TF
Climb Gradient: 500.0 ft/NM up to 540.0 ft MSL 200.0 ft/NM							

Flyability

Flight Type:	SID
Selected Airport:	KSMF [IFPA]
Climb Gradient:	500.0 ft/NM up to 540.0 ft MSL 200.0 ft/NM
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

DME DME Assessment Results for SCTWN4 path KSMF:RW17R:DER_MACUS

DME/DME	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Not included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Enabled
Disabled DMEs:	None

DME/DME (Continued)										
DMEs Used										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	LIN	N38° 04' 28.49", W121° 00' 13.89"	17.0 E	130	H	IFPA	NO	Enabled	41.3 %	41.9 %
2	HZN	N39° 30' 59.04", W118° 59' 51.67"	17.0 E	40	L	IFPA	NO	Enabled	33.7 %	34.3 %
3	SWR	N39° 10' 49.16", W120° 16' 10.60"	16.0 E	40	L	IFPA	NO	Enabled	41.2 %	41.9 %
4	ILA	N39° 04' 16.23", W122° 01' 38.17"	18.0 E	40	L	IFPA	NO	Enabled	31.6 %	31.4 %
5	LLC	N40° 07' 30.95", W118° 34' 39.34"	16.0 E	40	L	IFPA	NO	Enabled	32.3 %	32.9 %
6	MCC	N38° 40' 02.62", W121° 24' 14.98"	17.0 E	25	T	IFPA	NO	Enabled	13.7 %	13.9 %
7	FMG	N39° 31' 52.60", W119° 39' 21.87"	16.0 E	130	H	IFPA	NO	Enabled	36.7 %	37.3 %
8	MOD	N37° 37' 38.55", W120° 57' 28.33"	17.0 E	130	H	IFPA	NO	Enabled	12.9 %	13.1 %
9	MVA	N38° 33' 55.08", W118° 01' 58.27"	17.0 E	130	H	IFPA	NO	Enabled	17.4 %	17.7 %
10	SAC	N38° 26' 37.46", W121° 33' 05.95"	17.0 E	130	H	IFPA	NO	Enabled	35.4 %	35.2 %
11	HNW	N38° 43' 29.01", W120° 44' 57.35"	17.0 E	40	L	IFPA	NO	Enabled	36.9 %	37.5 %

DME DME Assessment Results for SCTWN4 path KSMF:RW17R:DER_MACUS

Flight Check DME Selection						
Distance [NM]	Selected DMEs					Alternate
0.0						
3.8	SAC	ILA				
7.2	SAC	ILA	LIN			
10.5	ILA	SAC				
11.9						
12.9	MCC	SAC	LIN	HNW		
32.4	LIN	MCC	ILA	SAC	HNW	
34.1	LIN	MCC	ILA	SAC		
35.0	ILA	LIN	SAC			
36.3	ILA	LIN	HNW	SAC		
38.6	ILA	LIN	SAC			
40.5	ILA	LIN	HNW	SAC		
40.6	ILA	LIN				
40.9						
43.5	ILA	LIN				
44.5						
44.9	ILA	LIN				
47.8	LIN	HNW	ILA			
50.2	ILA	LIN	SWR	HNW		
58.2	ILA	SWR	MOD	LIN	HNW	
75.8	SWR	HNW	SAC	LIN	MOD	
79.0	SWR	HNW	SAC	LIN		
79.4	SWR	HNW	SAC			
84.0	SAC	SWR				
86.2	FMG	SWR	SAC			
86.3	SAC	SWR				
86.5	FMG	SWR	SAC			
88.8	FMG	SWR				
102.2	FMG	SWR	HZN			
106.7	FMG	SWR	HZN	LLC		
116.8	LLC	FMG	HZN			
117.3	LLC	FMG				
119.5	LLC	FMG	HZN			
123.8	LLC	HZN				
130.9	MVA	LLC	HZN	FMG		
153.0	MVA	LLC	HZN			

Inertial Drift Segments			
#	Start Location	End Location	Length [NM]
1	N38° 40' 59.30", W121° 36' 05.34"	N38° 39' 11.10", W121° 32' 43.08"	3.7726
2	N38° 37' 57.72", W121° 22' 36.63"	N38° 37' 59.62", W121° 21' 24.35"	0.9444
3	N38° 38' 50.38", W120° 45' 36.87"	N38° 38' 54.47", W120° 42' 20.48"	2.5651
4	N38° 39' 33.40", W120° 41' 22.16"	N38° 39' 50.70", W120° 40' 56.24"	0.4444

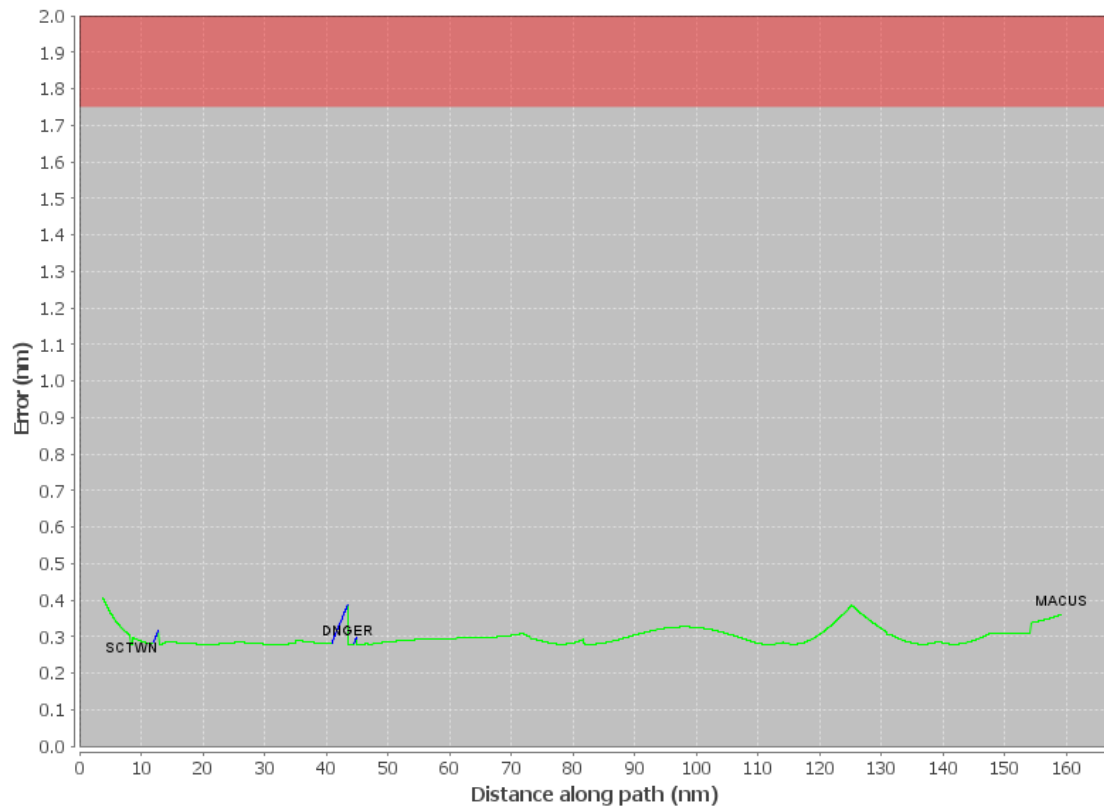
Available DMEs by Waypoints		
Waypoint Before	Waypoint After	DME List
KSMF:RW17R:DER	SCTWN	LIN, SAC, ILA
SCTWN	DNGER	LIN, HNW, SAC, MCC, ILA
DNGER	MACUS	LIN, HNW, FMG, LLC, MOD, SAC, MVA, HZN, ILA, SWR

DME DME Assessment Results for SCTWN4 path KSMF:RW17R:DER_MACUS

User Data Files								
#	File Name							
1	New Analysis.udt							
User DMEs								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ILA FAA 698161-15 ILA [IFPA]	N39° 04' 16.23", W122° 01' 38.17"	18.0 E	40	49.1	114.4	ILA FAA 698161-15	
ESV:		Bearing [True]: 89.0° to 141.0° Bearing [Mag]: 71.0° to 123.0°				Arc Distance: Out to 89.0 NM Altitude: 7100.0 to 20000.0 ft		
2	BAM FAA 701331-005 BAM [IFPA]	N40° 34' 08.69", W116° 55' 20.12"	13.0 E	130	4544.1	112.2	BAM FAA 701331-005	
ESV:		Bearing [True]: 205.0° to 212.0° Bearing [Mag]: 192.0° to 199.0°				Arc Distance: Out to 141.0 NM Altitude: 18300.0 to 19100.0 ft		
3	FMG FAA 698244-45 FMG [IFPA]	N39° 31' 52.60", W119° 39' 21.87"	16.0 E	130	5949.5	117.9	FMG FAA 698244-45	
ESV:		Bearing [True]: 151.0° to 178.0° Bearing [Mag]: 135.0° to 162.0°				Arc Distance: Out to 66.0 NM Altitude: 13000.0 to 22000.0 ft		
4	LLC FAA 704238-22 LLC [IFPA]	N40° 07' 30.95", W118° 34' 39.34"	16.0 E	40	4790.3	116.5	LLC FAA 704238-22	
ESV:		Bearing [True]: 168.0° to 206.0° Bearing [Mag]: 152.0° to 190.0°				Arc Distance: Out to 100.0 NM Altitude: 13600.0 to 24000.0 ft		
5	MVA FAA 702652-51 MVA [IFPA]	N38° 33' 55.08", W118° 01' 58.27"	17.0 E	130	7860	115.1	MVA FAA 702652-51	
ESV:		Bearing [True]: 316.0° to 338.0° Bearing [Mag]: 299.0° to 321.0°				Arc Distance: Out to 91.0 NM Altitude: 15800.0 to 24000.0 ft		
6	LIN FAA 680309-24 LIN [IFPA]	N38° 04' 28.49", W121° 00' 13.89"	17.0 E	130	266.1	114.8	LIN FAA 680309-24	
ESV:		Bearing [True]: 18.0° to 40.0° Bearing [Mag]: 1.0° to 23.0°				Arc Distance: Out to 72.0 NM Altitude: 9000.0 to 16000.0 ft		
7	MVA FAA 702652-50 MVA [IFPA]	N38° 33' 55.08", W118° 01' 58.27"	17.0 E	130	7860	115.1	MVA FAA 702652-50	
ESV:		Bearing [True]: 248.0° to 297.0° Bearing [Mag]: 231.0° to 280.0°				Arc Distance: Out to 54.0 NM Altitude: 14500.0 to 24000.0 ft		
8	SWR FAA 701993-23 SWR [IFPA]	N39° 10' 49.16", W120° 16' 10.60"	16.0 E	40	8850	113.2	SWR FAA 701993-23	
ESV:		Bearing [True]: 107.0° to 151.0° Bearing [Mag]: 91.0° to 135.0°				Arc Distance: Out to 65.0 NM Altitude: 12300.0 to 28000.0 ft		
9	TPH FAA 704262-073 TPH [IFPA]	N38° 01' 50.32", W117° 02' 00.61"	17.0 E	130	5344.6	116.0	TPH FAA 704262-073	
ESV:		Bearing [True]: 250.0° to 263.0° Bearing [Mag]: 233.0° to 246.0°				Arc Distance: Out to 43.0 NM Altitude: 18900.0 to 19100.0 ft		
10	SWR FAA 701993-24 SWR [IFPA]	N39° 10' 49.16", W120° 16' 10.60"	16.0 E	40	8850	113.2	SWR FAA 701993-24	
ESV:		Bearing [True]: 107.0° to 151.0° Bearing [Mag]: 91.0° to 135.0°				Arc Distance: Out to 100.0 NM Altitude: 15900.0 to 28000.0 ft		
11	MOD FAA 765548-16 MOD [IFPA]	N37° 37' 38.55", W120° 57' 28.33"	17.0 E	130	93	114.6	MOD FAA 765548-16	
ESV:		Bearing [True]: 18.0° to 53.0° Bearing [Mag]: 1.0° to 36.0°				Arc Distance: Out to 93.0 NM Altitude: 9800.0 to 16000.0 ft		
12	LIN FAA 680309-25 LIN [IFPA]	N38° 04' 28.49", W121° 00' 13.89"	17.0 E	130	266.1	114.8	LIN FAA 680309-25	
ESV:		Bearing [True]: 316.0° to 333.0° Bearing [Mag]: 299.0° to 316.0°				Arc Distance: Out to 47.0 NM Altitude: 2000.0 to 16000.0 ft		
13	SAC FAA 704199-56 SAC [IFPA]	N38° 26' 37.46", W121° 33' 05.95"	17.0 E	130	2.7	115.2	SAC FAA 704199-56	
ESV:		Bearing [True]: 15.0° to 66.0° Bearing [Mag]: 358.0° to 49.0°				Arc Distance: Out to 99.0 NM Altitude: 7100.0 to 16000.0 ft		
14	LLC FAA 704238-23 LLC [IFPA]	N40° 07' 30.95", W118° 34' 39.34"	16.0 E	40	4790.3	116.5	LLC FAA 704238-23	
ESV:		Bearing [True]: 217.0° to 232.0° Bearing [Mag]: 201.0° to 216.0°				Arc Distance: Out to 76.0 NM Altitude: 13300.0 to 24000.0 ft		
15	ILA FAA 698161-21 ILA [IFPA]	N39° 04' 16.23", W122° 01' 38.17"	18.0 E	40	49.1	114.4	ILA FAA 698161-21	
ESV:		Bearing [True]: 117.0° to 140.0° Bearing [Mag]: 99.0° to 122.0°				Arc Distance: Out to 43.0 NM Altitude: 1600.0 to 20000.0 ft		
16	HZN FAA 701367-040 HZN [IFPA]	N39° 30' 59.04", W118° 59' 51.67"	17.0 E	40	4085.6	114.1	HZN FAA 701367-040	
ESV:		Bearing [True]: 147.0° to 154.0° Bearing [Mag]: 130.0° to 137.0°				Arc Distance: Out to 116.0 NM Altitude: 18900.0 to 19100.0 ft		

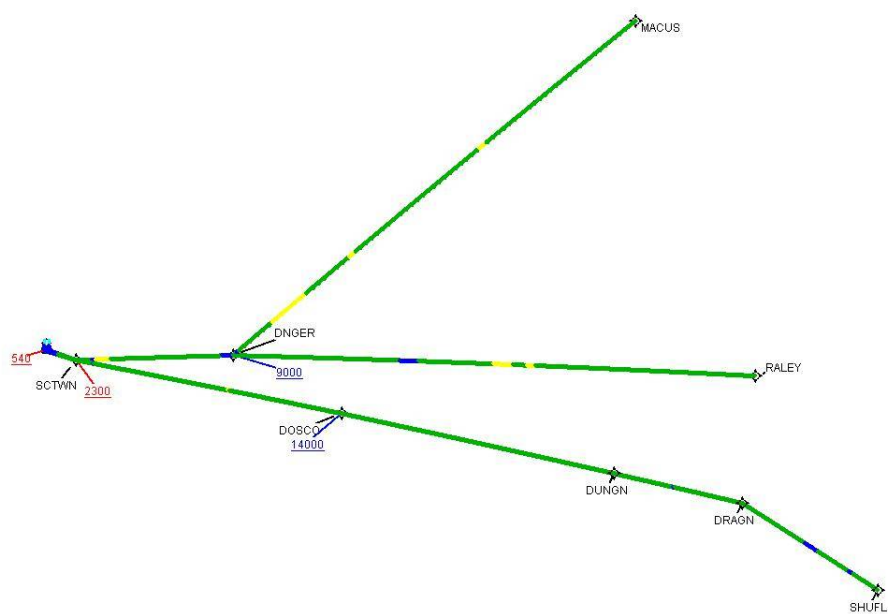
DME DME Assessment Results for SCTWN4 path KSMF:RW17R:DER_MACUS

DME Error



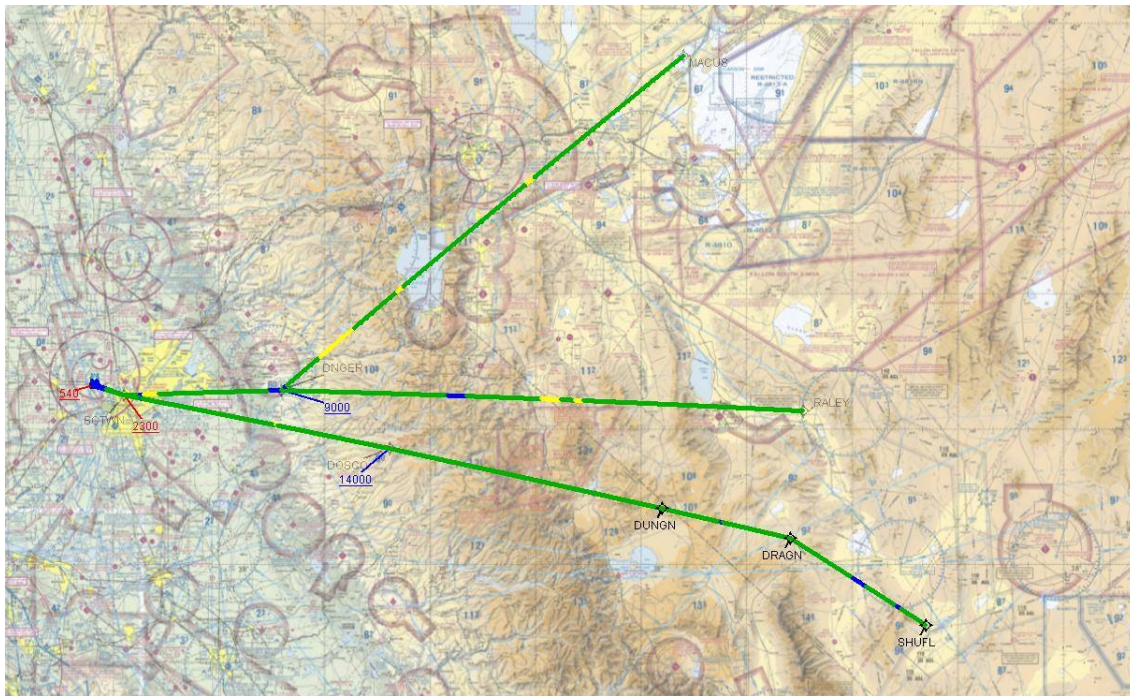
DME DME Assessment Results for SCTWN4 path KSMF:RW17R:DER_MACUS

Graphic Depiction 1



DME DME Assessment Results for SCTWN4 path KSMF:RW17R:DER_MACUS

Graphic Depiction 2



SCTWN

Point Of Contact

Organization Name - Hawaii Oakland District

POC's Name - Thann McLeod

Telephone Number - 916-366-4008

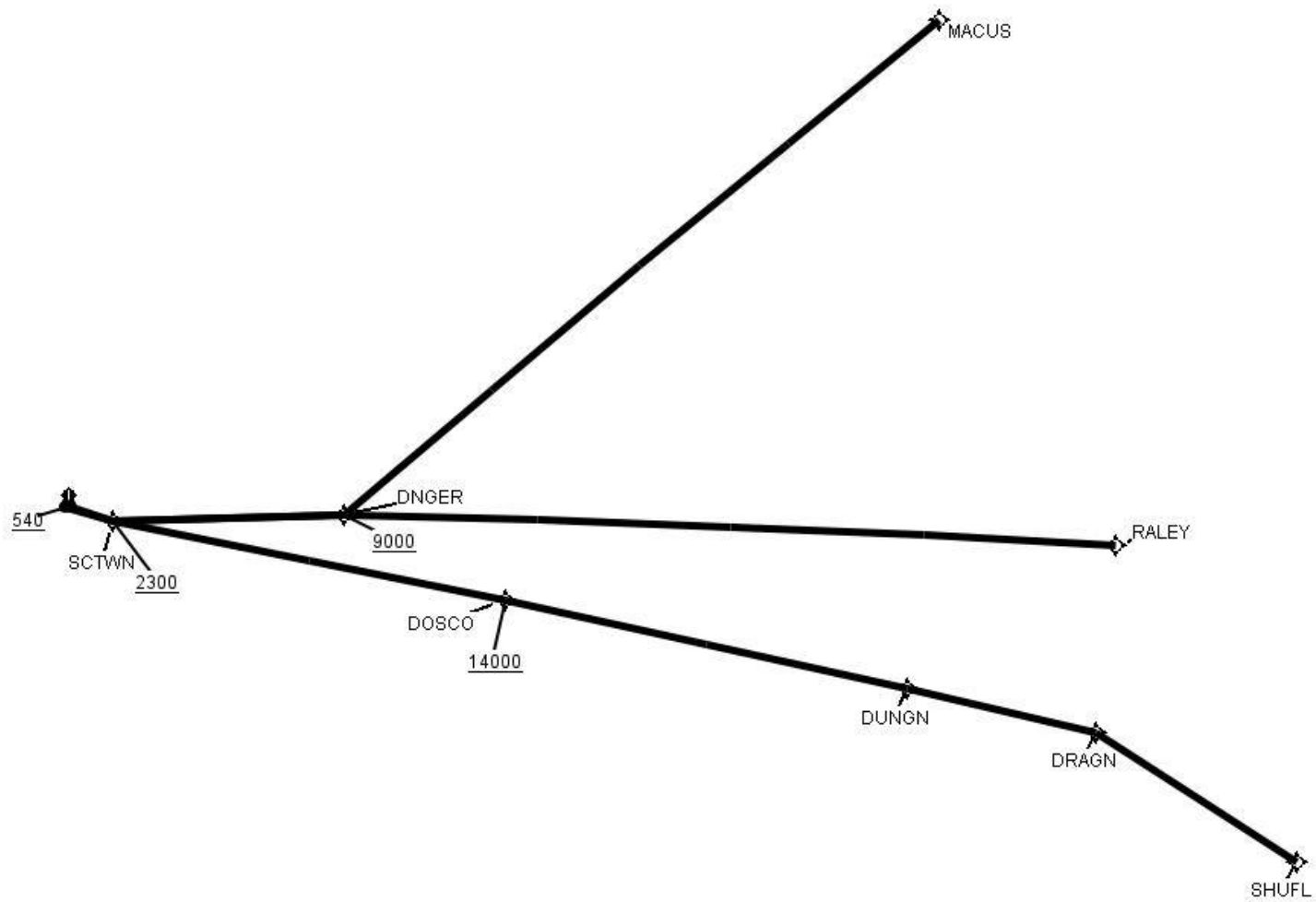
FAX Number -

Email Address - thann.mcleod@faa.gov

TARGETS Distribution Package

Version:6.3.0

Date: Mon Jul 12 11:49:56 MDT 2021



SCTWN

Runway Transition Data - KSMF:RW17L

DB	End Point	Latitude (D° M' S.ss")	Longitude (D° M' S.ss")	FO/ FB	Leg	TC	MC	Dist.	Altitude	Speed	MEA	MOCA	Turn Dir	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
IFPA r19 05-21-20 TO UNK	DER RW17L	N38 41 00.65	W121 34 49.64													
					VA	180.75	167.75	1.04	+540							
IFPA r0 01-08-15 TO UNK	SCTWN WP	N38 37 50.57	W121 27 04.47	FB	DF			6.45	+2300							

Runway Transition Data - KSMF:RW17R

DB	End Point	Latitude (D° M' S.ss")	Longitude (D° M' S.ss")	FO/ FB	Leg	TC	MC	Dist.	Altitude	Speed	MEA	MOCA	Turn Dir	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
IFPA r19 05-21-20 TO UNK	DER RW17R	N38 41 01.44	W121 36 05.31													
					VA	180.75	167.75	1.03	+540							
IFPA r0 01-08-15 TO UNK	SCTWN WP	N38 37 50.57	W121 27 04.47	FB	DF			7.39	+2300							

En Route Transition Data - MACUS

DB	End Point	Latitude (D° M' S.ss")	Longitude (D° M' S.ss")	FO/ FB	Leg	TC	MC	Dist.	Altitude	Speed	MEA	MOCA	Turn Dir	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
IFPA r0 01-08-15 TO UNK	SCTWN WP	N38 37 50.57	W121 27 04.47		IF				+2300							
IFPA r0 01-08-15 TO UNK	DNGER WP	N38 38 54.47	W120 42 20.48	FB	TF	88.03	75.03	35.07	+9000		8800	5200				
IFPA r1 01-08-15 TO UNK	MACUS WP	N39 53 00.00	W118 48 00.00	FB	TF	49.59	36.59	115.61			18000	11500				

SCTWN

En Route Transition Data - RALEY

DB	End Point	Latitude (D° M' S.ss")	Longitude (D° M' S.ss")	FO/ FB	Leg	TC	MC	Dist.	Altitude	Speed	MEA	MOCA	Turn Dir	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
IFPA r0 01-08-15 TO UNK	SCTWN WP	N38 37 50.57	W121 27 04.47		IF				+2300							
IFPA r0 01-08-15 TO UNK	DNGER WP	N38 38 54.47	W120 42 20.48	FB	TF	88.03	75.03	35.07	+9000		8800	5200				
IFPA r1 04-30-15 TO UNK	RALEY WP	N38 34 19.70	W118 14 03.63	FB	TF	91.48	78.48	116.31			19000	13500				

En Route Transition Data - SHUFL

DB	End Point	Latitude (D° M' S.ss")	Longitude (D° M' S.ss")	FO/ FB	Leg	TC	MC	Dist.	Altitude	Speed	MEA	MOCA	Turn Dir	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
IFPA r0 01-08-15 TO UNK	SCTWN WP	N38 37 50.57	W121 27 04.47		IF				+2300							
IFPA r0 01-08-15 TO UNK	DOSCO WP	N38 25 59.96	W120 11 35.43	FB	TF	100.90	87.90	60.40	+14000		13900	9900				
	DUNGN WP	N38 12 43.12	W118 54 15.01	FB	TF	101.90	88.90	62.29			19000	13700				
	DRAGN WP	N38 06 08.83	W118 17 51.76	FB	TF	102.70	89.70	29.44			19000	11800				
	SHUFL WP	N37 46 54.63	W117 39 21.52	FB	TF	122.05	109.05	36.01			19000	11200				

SCTWN

Point Data

DB	Point	Arc Center	Lat-Long (DMS.S)	Latitude (Deg)	Longitude (Deg)	Latitude (D°, M.mm')	Longitude (D°, M.mm')	Latitude (D° M' S.ss")	Longitude (D° M' S.ss")
IFPA r0 01-08-15 TO UNK	DNGER WP		383854.47N-1204220.48W	N 38.6484639	W 120.7056889	N38 38.908	W120 42.341	N38 38 54.47	W120 42 20.48
IFPA r0 01-08-15 TO UNK	DOSCO WP		382559.96N-1201135.43W	N 38.4333222	W 120.1931750	N38 25.999	W120 11.590	N38 25 59.96	W120 11 35.43
	DRAGN WP		380608.83N-1181751.76W	N 38.1024528	W 118.2977111	N38 06.147	W118 17.863	N38 06 08.83	W118 17 51.76
	DUNGN WP		381243.12N-1185415.01W	N 38.2119778	W 118.9041694	N38 12.719	W118 54.250	N38 12 43.12	W118 54 15.01
IFPA r1 01-08-15 TO UNK	MACUS WP		395300.00N-1184800.00W	N 39.8833333	W 118.8000000	N39 53.000	W118 48.000	N39 53 00.00	W118 48 00.00
IFPA r1 04-30-15 TO UNK	RALEY WP		383419.70N-1181403.63W	N 38.5721389	W 118.2343417	N38 34.328	W118 14.060	N38 34 19.70	W118 14 03.63
IFPA r0 01-08-15 TO UNK	SCTWN WP		383750.57N-1212704.47W	N 38.6307139	W 121.4512417	N38 37.843	W121 27.074	N38 37 50.57	W121 27 04.47
	SHUFL WP		374654.63N-1173921.52W	N 37.7818417	W 117.6559778	N37 46.910	W117 39.359	N37 46 54.63	W117 39 21.52

SCTWN

RS Results SCTWN

Last Evaluation: 12-Jul-2021 11:20:42

Reference Software Version: 2.7.0

Project Chart Date: 09/08/2022

En Route Controlling Obstacles

MOCA

Start Pt	End Pt	Name	Source	Obstacle Type	AC (H/V (ft))	Lat	Long	Height (ft)	Height (ft) AMSL	Mnts Area	Pri/Sec Area	ROC (ft)	Worst Case Veg Ht (ft)	Leg MOCA (ft)	Min OCA (ft)	TARGETS Instance Date	Man - Made Obstacle
DOSCO	DUNGN	TerrainPt_0_KSMF:RW17L:SHUFL_DOSCO:DUNGN	DTED 3 Sec	TERRAIN +AAO	4E (+164/+98)	N38° 17' 12.00"	W119° 39' 03.00"	11440.29	11640.29	true	P	2000.00	0	13641	13640.29		false
DNGER	RALEY	TerrainPt_0_KSMF:RW17L:RALEY_DNGER:RALEY	DTED 3 Sec	TERRAIN +AAO	4E (+164/+98)	N38° 34' 06.00"	W118° 47' 24.00"	11236.88	11436.88	true	P	2000.00	0	13437	13436.88		false
DUNGN	DRAGN	TerrainPt_0_KSMF:RW17L:SHUFL_DUNGN:DRAGN	DTED 3 Sec	TERRAIN +AAO	4E (+164/+98)	N38° 15' 06.00"	W118° 55' 12.00"	9504.59	9704.59	true	P	2000.00	0	11705	11704.59		false
DNGER	MACUS	TerrainPt_0_KSMF:RW17L:MACUS_DNGER:MACUS	DTED 3 Sec	TERRAIN +AAO	4E (+164/+98)	N38° 55' 03.00"	W120° 12' 48.00"	9281.50	9481.50	true	P	2000.00	0	11482	11481.50		false
DRAGN	SHUFL	TerrainPt_0_KSMF:RW17L:SHUFL_DRAGN:SHUFL	DTED 3 Sec	TERRAIN +AAO	4E (+164/+98)	N37° 45' 36.00"	W117° 45' 36.00"	8910.76	9110.76	true	P	2000.00	0	11111	11110.76		false
SCTWN	DOSCO	TerrainPt_0_KSMF:RW17L:SHUFL_SCTWN:DOSCO	DTED 3 Sec	TERRAIN +AAO	4E (+164/+98)	N38° 27' 36.00"	W120° 08' 36.00"	7631.23	7831.23	true	P	2000.00	0	9832	9831.23		false
SCTWN	DNGER	TerrainPt_0_KSMF:RW17L:MACUS_SCTWN:DNGER	DTED 3 Sec	TERRAIN +AAO	4E (+164/+98)	N38° 44' 09.00"	W120° 42' 12.00"	2995.41	3195.41	true	P	2000.00	0	5196	5195.41		false

No MCA Obstacles

Runway Evaluation for RW17L

LNAV Engagement CG (ft/NM):	500.0
LNAV Engagement Termination Altitude (ft):	540.0
Obstacle Climb Gradient (ft/NM):	-
Obstacle CG Termination Altitude (ft):	-
Inhibit controlling obstacles within ICA Extended 3SM Area:	false

Route Evaluation for KSMF:RW17L:MACUS

SCTWN

Required Engagement Climb Gradient (ft/NM): 500.00

KSMF:RW17L:MACUS Evaluation Results Part 1/2

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Spd Restr	Min CG Calc Alt	Turn Ang	Leg Length	Min Seg Length
VA			+540.00			540.00	71.52	1.04	1.04
DF	SCTWN	FLY_BY	+2300.00			1829.87	15.63	6.45	0.0
TF	DNGER	FLY_BY	+9000.00			8844.69	38.91	35.07	3.98
TF	MACUS	FLY_BY				31988.37		115.61	3.51

KSMF:RW17L:MACUS Evaluation Results Part 2/2

Leg Tp	End Pt	Turn Tp	DTA1	DTA1 Turn Rad	DTA1 Turn Alt	DTA1 Turn Spd	DTA1 Bank Ang	DTA1 Tailwind	DTA1 True Airspd	DTA1 vGround	DTA2	DTA2 Turn Rad	DTA2 Turn Alt	DTA2 Turn Spd	DTA2 Bank Ang	DTA2 Tailwind	DTA2 True Airspd	DTA2 vGround
VA					0.0	0.0					2.08	2.89	540.0	265.0	25.0	30.0	274.0	304.0
DF	SCTWN	FLY_BY	2.08	2.89	540.0	265.0	25.0	30.0	274.0	304.0	0.47	3.4	3764.83	265.0	25.0	42.12	287.6	329.72
TF	DNGER	FLY_BY	0.47	3.4	3764.83	265.0	25.0	42.12	287.6	329.72	3.51	9.94	17914.9	300.0	19.45	82.47	408.43	490.91
TF	MACUS	FLY_BY	3.51	9.94	17914.9	300.0	19.45	82.47	408.43	490.91	0.0		41000.0	300.0	0.0	128.18	628.54	570.0

KSMF:RW17L:MACUS Criteria Failures and Warnings

No failures.

Route Evaluation for KSMF:RW17L:RALEY

Required Engagement Climb Gradient (ft/NM): 500.00

KSMF:RW17L:RALEY Evaluation Results Part 1/2

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Spd Restr	Min CG Calc Alt	Turn Ang	Leg Length	Min Seg Length
VA			+540.00			540.00	71.52	1.04	1.04
DF	SCTWN	FLY_BY	+2300.00			1829.87	15.63	6.45	0.0
TF	DNGER	FLY_BY	+9000.00			8844.69	2.99	35.07	1.0
TF	RALEY	FLY_BY				32130.29		116.31	1.0

SCTWN

KSMF:RW17L:RALEY Evaluation Results Part 2/2

Leg Tp	End Pt	Turn Tp	DTA1	DTA1 Turn Rad	DTA1 Turn Alt	DTA1 Turn Spd	DTA1 Bank Ang	DTA1 Tailwind	DTA1 True Airspd	DTA1 vGround	DTA2	DTA2 Turn Rad	DTA2 Turn Alt	DTA2 Turn Spd	DTA2 Bank Ang	DTA2 Tailwind	DTA2 True Airspd	DTA2 vGround
VA					0.0	0.0					2.08	2.89	540.0	265.0	25.0	30.0	274.0	304.0
DF	SCTWN	FLY_BY	2.08	2.89	540.0	265.0	25.0	30.0	274.0	304.0	0.47	3.4	3764.83	265.0	25.0	42.12	287.6	329.72
TF	DNGER	FLY_BY	0.47	3.4	3764.83	265.0	25.0	42.12	287.6	329.72	0.0	40.14	17914.9	300.0	5.0	82.47	408.43	490.91
TF	RALEY	FLY_BY	0.0	40.14	17914.9	300.0	5.0	82.47	408.43	490.91	0.0		41000.0	300.0	0.0	128.18	628.54	570.0

KSMF:RW17L:RALEY Criteria Failures and Warnings

No failures.

Route Evaluation for KSMF:RW17L:SHUFL

Required Engagement Climb Gradient (ft/NM): 500.00

KSMF:RW17L:SHUFL Evaluation Results Part 1/2

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Spd Restr	Min CG Calc Alt	Turn Ang	Leg Length	Min Seg Length
VA			+540.00			540.00	71.52	1.04	1.04
DF	SCTWN	FLY_BY	+2300.00			1829.87	26.81	6.45	0.0
TF	DOSCO	FLY_BY	+14000.00			13914.56	0.21	60.4	1.0
TF	DUNGN	FLY_BY				26384.93	0.0	62.29	1.0
TF	DRAGN	FLY_BY				32281.46	18.98	29.44	9.05
TF	SHUFL	FLY_BY				39496.42		36.01	9.05

KSMF:RW17L:SHUFL Evaluation Results Part 2/2

Leg Tp	End Pt	Turn Tp	DTA1	DTA1 Turn Rad	DTA1 Turn Alt	DTA1 Turn Spd	DTA1 Bank Ang	DTA1 Tailwind	DTA1 True Airspd	DTA1 vGround	DTA2	DTA2 Turn Rad	DTA2 Turn Alt	DTA2 Turn Spd	DTA2 Bank Ang	DTA2 Tailwind	DTA2 True Airspd	DTA2 vGround
VA					0.0	0.0					2.08	2.89	540.0	265.0	25.0	30.0	274.0	304.0
DF	SCTWN	FLY_BY	2.08	2.89	540.0	265.0	25.0	30.0	274.0	304.0	0.81	3.4	3764.83	265.0	25.0	42.12	287.6	329.72
TF	DOSCO	FLY_BY	0.81	3.4	3764.83	265.0	25.0	42.12	287.6	329.72	0.0	51.0	26791.83	300.0	5.0	100.05	477.2	553.34
TF	DUNGN	FLY_BY	0.0	51.0	26791.83	300.0	5.0	100.05	477.2	553.34	0.0		41000.0	300.0	0.0	128.18	628.54	570.0
TF	DRAGN	FLY_BY	0.0		41000.0	300.0	0.0	128.18	628.54	570.0	9.05	54.11	41000.0	300.0	5.0	128.18	628.54	570.0
TF	SHUFL	FLY_BY	9.05	54.11	41000.0	300.0	5.0	128.18	628.54	570.0	0.0		41000.0	300.0	0.0	128.18	628.54	570.0

KSMF:RW17L:SHUFL Criteria Failures and Warnings

RDO253: [Warning] The turn at SCTWN results in an inside arc that does not intersect the Secondary leg boundaries inbound to the fix. An alternate boundary construction method was used to complete the evaluation..

SCTWN

Runway Evaluation for RW17R

LNAV Engagement CG (ft/NM):	500.0
LNAV Engagement Termination Altitude (ft):	540.0
Obstacle Climb Gradient (ft/NM):	-
Obstacle CG Termination Altitude (ft):	-
Inhibit controlling obstacles within ICA Extended 3SM Area:	false

Route Evaluation for KSMF:RW17R:MACUS

Required Engagement Climb Gradient (ft/NM): 500.00

KSMF:RW17R:MACUS Evaluation Results Part 1/2

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Spd Restr	Min CG Calc Alt	Turn Ang	Leg Length	Min Seg Length
VA			+540.00			540.00	73.94	1.03	1.03
DF	SCTWN	FLY_BY	+2300.00			2018.61	13.04	7.39	0.0
TF	DNGER	FLY_BY	+9000.00			9033.50	38.91	35.07	3.95
TF	MACUS	FLY_BY				32177.38		115.61	3.55

KSMF:RW17R:MACUS Evaluation Results Part 2/2

Leg Tp	End Pt	Turn Tp	DTA1	DTA1 Turn Rad	DTA1 Turn Alt	DTA1 Turn Spd	DTA1 Bank Ang	DTA1 Tailwind	DTA1 True Airspd	DTA1 vGround	DTA2	DTA2 Turn Rad	DTA2 Turn Alt	DTA2 Turn Spd	DTA2 Bank Ang	DTA2 Tailwind	DTA2 True Airspd	DTA2 vGround
VA					0.0	0.0					2.17	2.89	540.0	265.0	25.0	30.0	274.0	304.0
DF	SCTWN	FLY_BY	2.17	2.89	540.0	265.0	25.0	30.0	274.0	304.0	0.39	3.44	4236.73	265.0	25.0	42.12	289.68	331.79
TF	DNGER	FLY_BY	0.39	3.44	4236.73	265.0	25.0	42.12	289.68	331.79	3.55	10.06	18245.45	300.0	19.45	83.13	410.73	493.85
TF	MACUS	FLY_BY	3.55	10.06	18245.45	300.0	19.45	83.13	410.73	493.85	0.0		41000.0	300.0	0.0	128.18	628.54	570.0

KSMF:RW17R:MACUS Criteria Failures and Warnings

No failures.

Route Evaluation for KSMF:RW17R:RALEY

Required Engagement Climb Gradient (ft/NM): 500.00

SCTWN

KSMF:RW17R:RALEY Evaluation Results Part 1/2

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Spd Restr	Min CG Calc Alt	Turn Ang	Leg Length	Min Seg Length
VA			+540.00			540.00	73.94	1.03	1.03
DF	SCTWN	FLY_BY	+2300.00			2018.61	13.04	7.39	0.0
TF	DNGER	FLY_BY	+9000.00			9033.50	2.99	35.07	1.0
TF	RALEY	FLY_BY				32319.31		116.31	1.0

KSMF:RW17R:RALEY Evaluation Results Part 2/2

Leg Tp	End Pt	Turn Tp	DTA1	DTA1 Turn Rad	DTA1 Turn Alt	DTA1 Turn Spd	DTA1 Bank Ang	DTA1 Tailwind	DTA1 True Airspd	DTA1 vGround	DTA2	DTA2 Turn Rad	DTA2 Turn Alt	DTA2 Turn Spd	DTA2 Bank Ang	DTA2 Tailwind	DTA2 True Airspd	DTA2 vGround
VA					0.0	0.0					2.17	2.89	540.0	265.0	25.0	30.0	274.0	304.0
DF	SCTWN	FLY_BY	2.17	2.89	540.0	265.0	25.0	30.0	274.0	304.0	0.39	3.44	4236.73	265.0	25.0	42.12	289.68	331.79
TF	DNGER	FLY_BY	0.39	3.44	4236.73	265.0	25.0	42.12	289.68	331.79	0.0	40.62	18245.45	300.0	5.0	83.13	410.73	493.85
TF	RALEY	FLY_BY	0.0	40.62	18245.45	300.0	5.0	83.13	410.73	493.85	0.0		41000.0	300.0	0.0	128.18	628.54	570.0

KSMF:RW17R:RALEY Criteria Failures and Warnings

No failures.

Route Evaluation for KSMF:RW17R:SHUFL

Required Engagement Climb Gradient (ft/NM): 500.00

KSMF:RW17R:SHUFL Evaluation Results Part 1/2

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Spd Restr	Min CG Calc Alt	Turn Ang	Leg Length	Min Seg Length
VA			+540.00			540.00	73.94	1.03	1.03
DF	SCTWN	FLY_BY	+2300.00			2018.61	22.24	7.39	0.0
TF	DOSCO	FLY_BY	+14000.00			14103.41	0.21	60.4	1.0
TF	DUNGN	FLY_BY				26573.89	0.0	62.29	1.0
TF	DRAGN	FLY_BY				32470.47	18.98	29.44	9.05
TF	SHUFL	FLY_BY				39685.50		36.01	9.05

SCTWN

KSMF:RW17R:SHUFL Evaluation Results Part 2/2

Leg Tp	End Pt	Turn Tp	DTA1	DTA1 Turn Rad	DTA1 Turn Alt	DTA1 Turn Spd	DTA1 Bank Ang	DTA1 Tailwind	DTA1 True Airspd	DTA1 vGround	DTA2	DTA2 Turn Rad	DTA2 Turn Alt	DTA2 Turn Spd	DTA2 Bank Ang	DTA2 Tailwind	DTA2 True Airspd	DTA2 vGround
VA					0.0	0.0					2.17	2.89	540.0	265.0	25.0	30.0	274.0	304.0
DF	SCTWN	FLY_BY	2.17	2.89	540.0	265.0	25.0	30.0	274.0	304.0	0.68	3.44	4236.73	265.0	25.0	42.12	289.68	331.79
TF	DOSCO	FLY_BY	0.68	3.44	4236.73	265.0	25.0	42.12	289.68	331.79	0.0	51.6	27122.52	300.0	5.0	100.7	480.09	556.63
TF	DUNGN	FLY_BY	0.0	51.6	27122.52	300.0	5.0	100.7	480.09	556.63	0.0		41000.0	300.0	0.0	128.18	628.54	570.0
TF	DRAGN	FLY_BY	0.0		41000.0	300.0	0.0	128.18	628.54	570.0	9.05	54.11	41000.0	300.0	5.0	128.18	628.54	570.0
TF	SHUFL	FLY_BY	9.05	54.11	41000.0	300.0	5.0	128.18	628.54	570.0	0.0		41000.0	300.0	0.0	128.18	628.54	570.0

KSMF:RW17R:SHUFL Criteria Failures and Warnings

No failures.

Evaluation Input

Name:	RS Results SCTWN
Project:	20210712 KSMF SIDs
Last Evaluated:	12-Jul-2021 11:20:42
Evaluated Obstacles?:	true
Obstacle Source:	IFPA Auto-Import
Converted 9I Accuracies to 4D?:	true
Evaluated Terrain?:	true
Worst Case Vegetation Height (ft) AGL:	0
Evaluated Airspace?:	false
Maximum Aircraft Category:	D
MVA Prior to the IF (ft) MSL:	-

Airport

Name:	KSMF [IFPA r16 04-30-15 TO UNK]
Location:	N38° 41' 43.60",W121° 35' 26.80"
Elevation (ft):	26.9
Magnetic Variation (degs):	13 (2020)

AAO Exempt Airports

Name	Location	Elevation (ft)
KSMF	N38° 41' 43.60",W121° 35' 26.80"	26.9

SCTWN

Runways

Name	Airport	Location	Elevation (ft)	TDZE (ft)	True Course (degs)	Survey?
RW17L	KSMF	N38° 42' 25.70",W121° 34' 48.21"	26.9	26.9	180.8	PAT
RW17R	KSMF	N38° 42' 26.42",W121° 36' 03.90"	24.8	25.3	180.7	PAT
RW35L	KSMF	N38° 41' 01.44",W121° 36' 05.31"	22.5	23.9	0.7	PAT
RW35R	KSMF	N38° 41' 00.65",W121° 34' 49.64"	22.1	23.8	0.8	PAT

Terrain Information

Terrain Extractor Name	Extractor Location	Extractor Type	Resolution
DTED 3 Sec	C:\Program Files (x86)\TARGETS\data\DTED-3Sec	org.mitre.caasd.terrain.DTEExtractor	3.0

Criteria Failures and Warnings

RDO253: [Warning] The turn at SCTWN results in an inside arc that does not intersect the Secondary leg boundaries inbound to the fix. An alternate boundary construction method was used to complete the evaluation..

Software Evaluation Failures, Warnings, and Notes

CEW3: Note: User Defined Tailwind component was used for fix SCTWN.
 Procedure database airport KSMF record magnetic variation of 13.0E (EY 2020) is within 3 degrees of next future epoch year value 13.0E (EY 2025).
 CEW59: The procedure excludes digital terrain evaluation within one or more legacy survey areas that are not included in FAA Order 8260.19.

Obstacles Requiring Accuracy Code Verification

[06-000459 [IFPA r3], 06-001953 [IFPA r1], 06-001984 [IFPA r1], 06-002385 [IFPA r1], 06-006135 [IFPA r1], 06-006139 [IFPA r1], 06-006141 [IFPA r1], 06-006142 [IFPA r1], 06-006143 [IFPA r1], 06-006145 [IFPA r1], 06-006147 [IFPA r1], 06-006174 [IFPA r1], 06-006175 [IFPA r1], 06-006179 [IFPA r1], 06-038724 [IFPA r1], 06-038749 [IFPA r1], 06-038822 [IFPA r1], 32-000021 [IFPA r2], 32-000175 [IFPA r1], 32-006009 [IFPA r1], 32-020008 [IFPA r1], 32-023900 [IFPA r1], 32-023904 [IFPA r1], 32-023998 [IFPA r1]]

Ignored Obstacles

None.

Procedure Notes

None.

SCTWN

Database Effective Dates

Database	Date
UddfObstacle	07/13/2017
Tiled IFPA	N/A
OEAAA	N/A
DOF	05/20/2021
IFP_OFFLINE	N/A
NFDC	06/17/2021
AVNII_OFFLINE	N/A
IFPA	07/12/2021
CIFP	06/17/2021

Notes: