

SEMC/XMS
CRNL. E. CARVAJAL

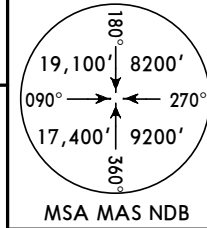
JEPPESEN
19 MAY 17 **10-3** Eff 25 May

MACAS, ECUADOR

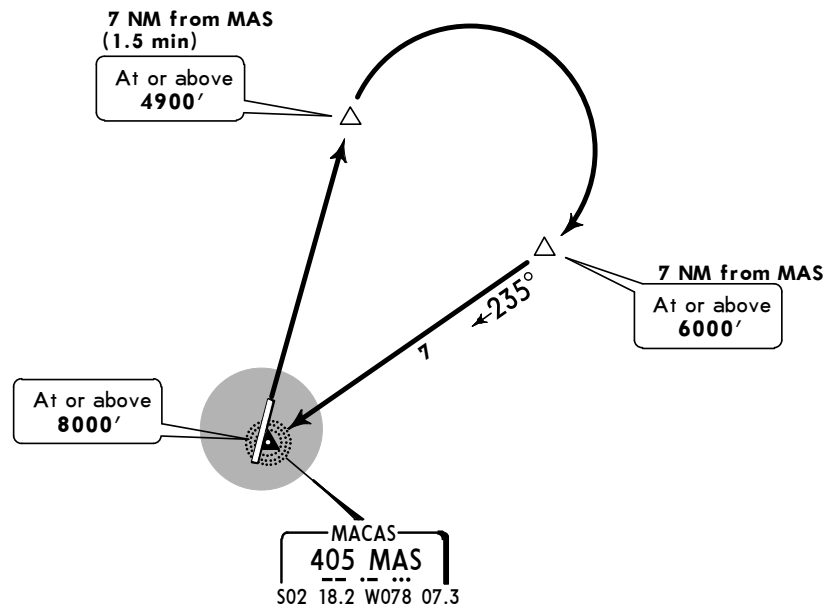
SID

Apt Elev
3452'

Trans level: FL070 Trans alt: 7000'



MACAS NDB 1 DEPARTURE [MAS1] (RWY 02)



This SID requires take-off minimums:
Ceiling 150m, Visibility 4000m.
This SID requires a minimum climb gradient
of 4.0% (243' per NM).

Gnd speed-KT	75	100	150	200	250	300
4.0% V/V (fpm)	304	405	608	810	1013	1215

ROUTING

After take-off MAINTAIN runway heading to 7 NM from MAS (1.5 min) at or above 4900'. Turn RIGHT and at 7 NM from MAS, 235° bearing to MAS NDB to cross at or above 8000'. Then proceed in accordance with ATC instructions.

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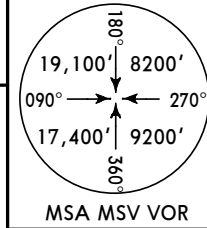
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19 MAY 17 10-3A Eff 25 May

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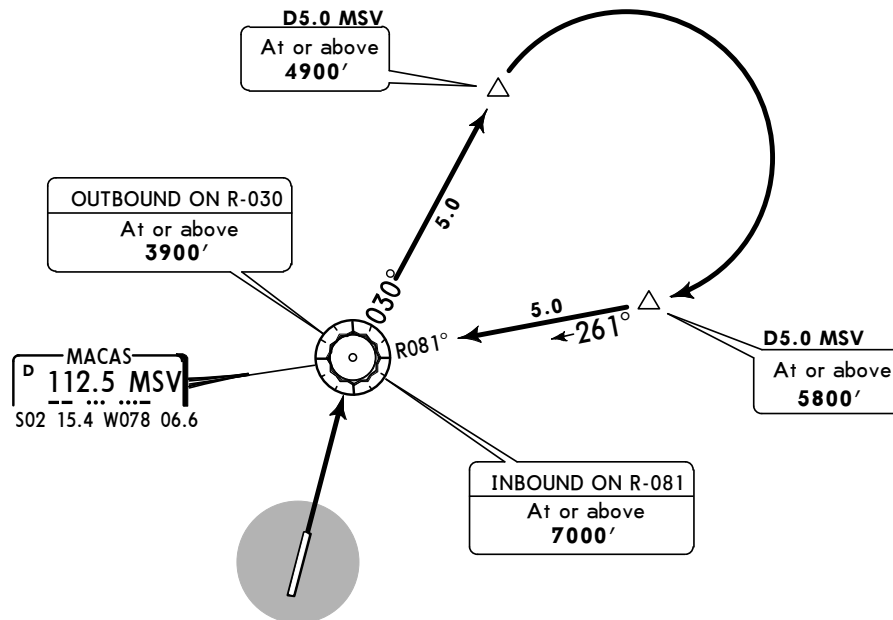
SID

Apt Elev
3452'

Trans level: FL070 Trans alt: 7000'



MACAS VOR 1 DEPARTURE [MSV1] (RWY 02)



This SID requires take-off minimums:
Ceiling 150m, Visibility 4000m.
Altitude at distance from MSV.

MSV DME	1	0	1	2	3	4	5
ALTITUDE	3700	3900	4100	4300	4500	4700	4900



ROUTING

After take-off MAINTAIN runway heading to MSV VOR at or above 3900', then MSV R-030 to D5.0 MSV at or above 4900'. Turn RIGHT to intercept MSV R-081 to D5.0 MSV at or above 5800'. Continue to MSV VOR and cross at or above 7000', or proceed in accordance with ATC instructions.

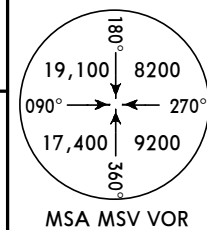
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3 NOV 17 10-3B Eff 9 Nov

MACAS, ECUADOR
SID

Apt Elev
3452'

Trans level: FL070 Trans alt: 7000'



MACAS VOR 1A DEPARTURE [MSV1A] (RWY 02)

PASTAZA
113.1 PAV
S01 31.0 W078 02.6



W23
32.5

D12.0 MSV

At or above
6500'

008°

D8.0 MSV

At or above
5500'

8.0

At or above
3900'

MACAS
112.5 MSV
S02 15.4 W078 06.6



This SID requires take-off minimums:
Ceiling 150m, Visibility 4000m.
Altitude at distance from MSV.

MSV DME	1	0	1	2	3	4	5
ALTITUDE	3700	3900	4100	4300	4500	4700	4900

ROUTING

After take-off MAINTAIN runway heading to MSV VOR at or above 3900', then MSV R-030 to D8.0 MSV at or above 5500'. Turn LEFT to intercept MSV R-008 (airway W-23) to D12.0 MSV and cross at or above 6500'. Then proceed according to ATC instructions.

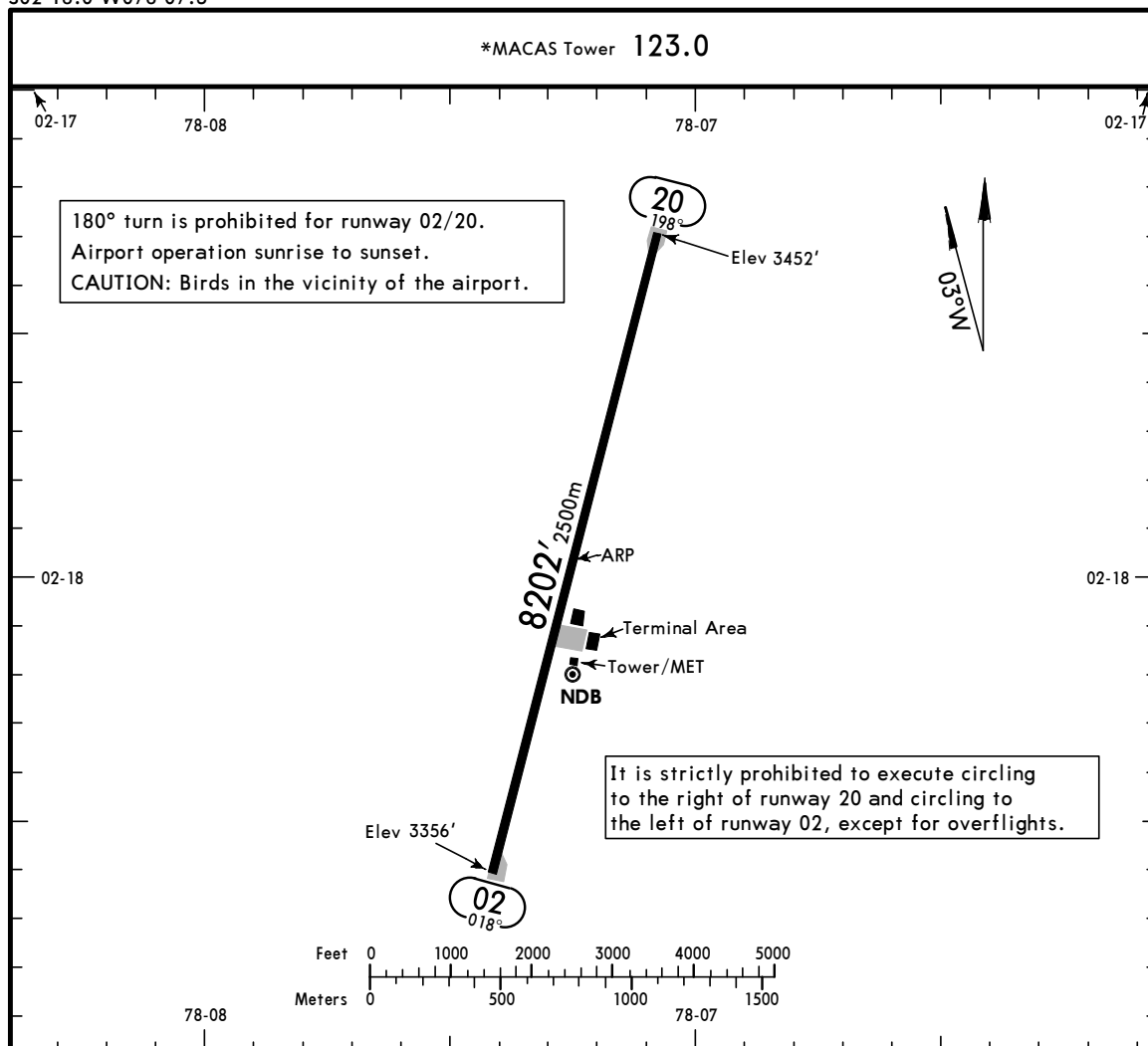
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Apt Elev **3452'**
S02 18.0 W078 07.3

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21 FEB 20 **(10-9)**
MACAS, ECUADOR

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ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS		TAKE-OFF	WIDTH
		LANDING BEYOND Threshold	Glide Slope		
02	20				98' 30m

TAKE-OFF		
All Rwys		
1 & 2 Eng	150m - 4300m	
3 & 4 Eng		

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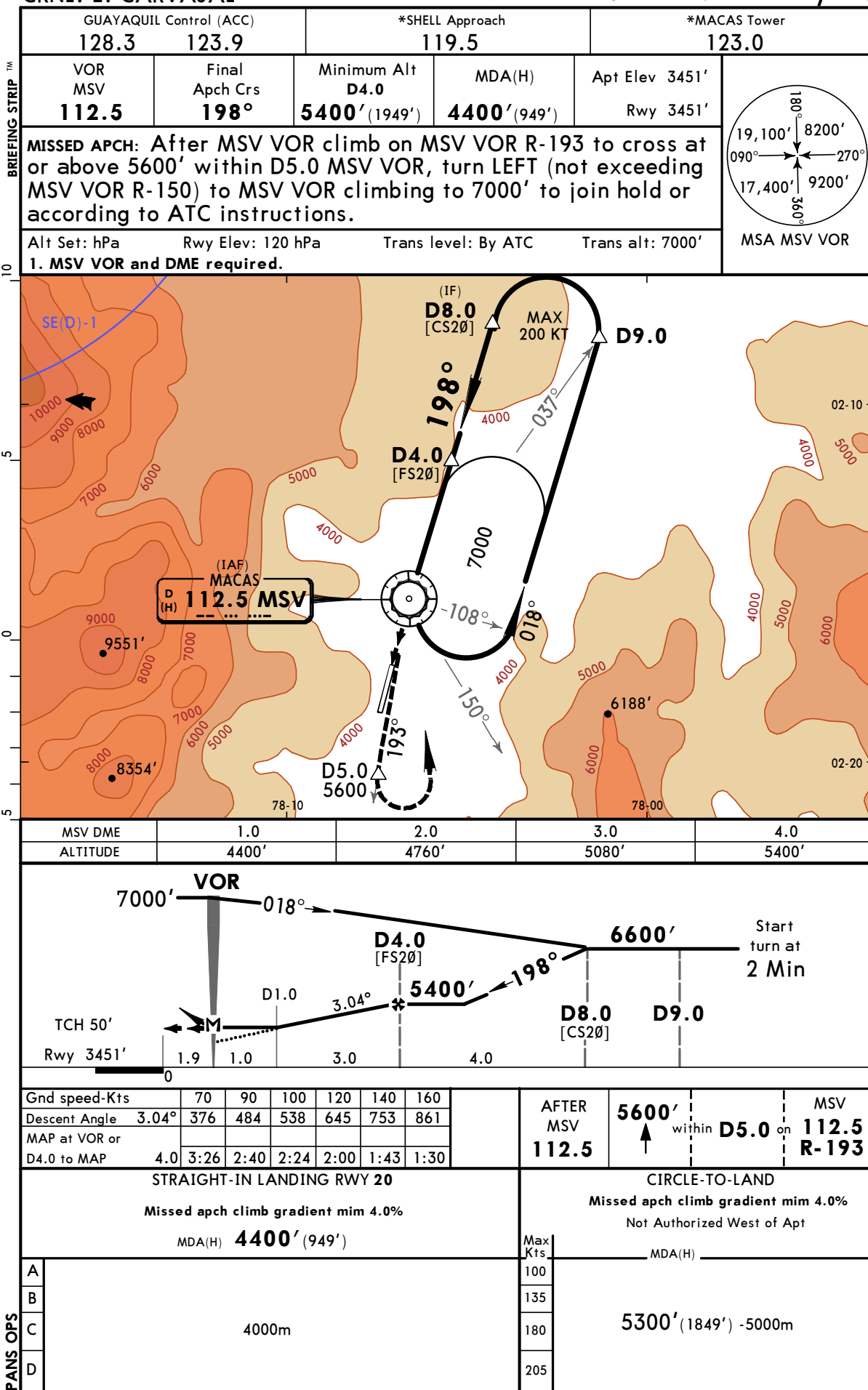
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17 NOV 17

(13-1)

MISSED APCH CLIMB
GRADIENT MIM 4.0%

VOR Z Rwy 20



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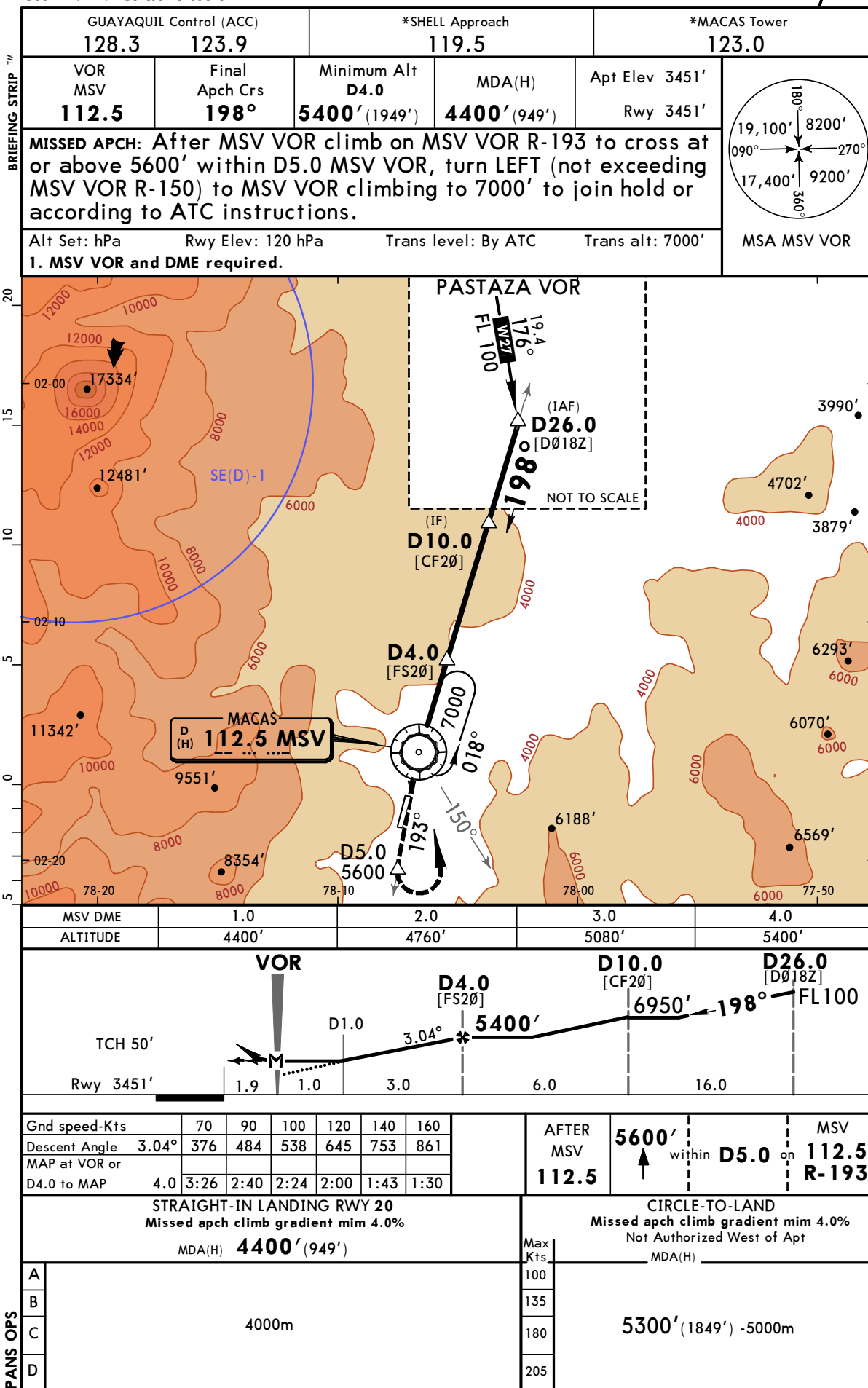
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17 NOV 17

(13-3)

MISSED APCH CLIMB
GRADIENT MIM 4.0%

VOR X Rwy 20



CHANGES: Airway.

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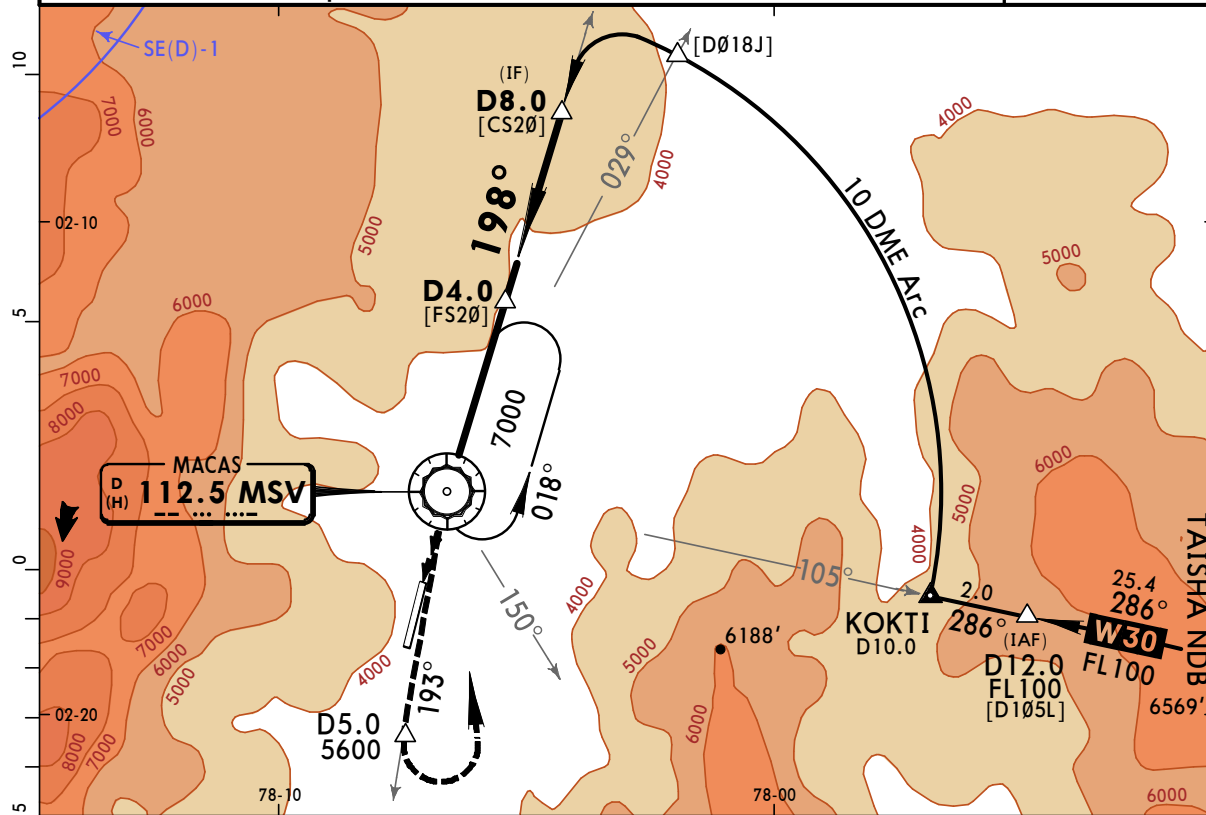
17 NOV 17

(13-4)

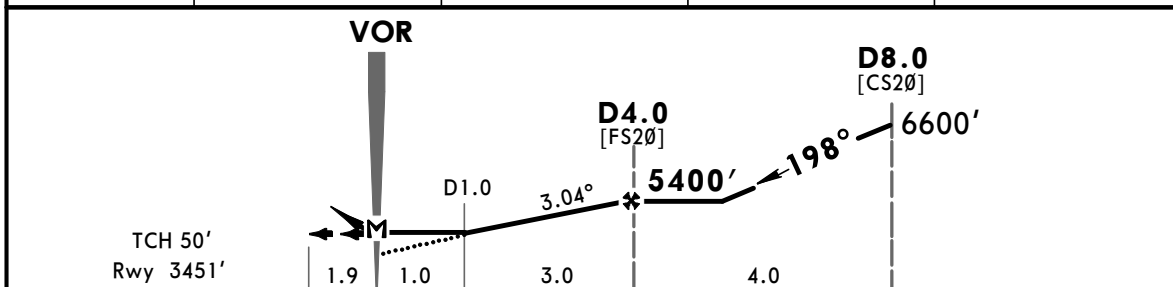
MISSED APCH CLIMB
GRADIENT MIM 4.0%

VOR W Rwy 20

GUAYAQUIL Control (ACC)		*SHELL Approach		*MACAS Tower	
128.3 123.9		119.5		123.0	
VOR MSV	Final Apch Crs	Minimum Alt	MDA(H)	Apt Elev	3451'
112.5	198°	5400' (1949')	4400' (949')	Rwy	3451'
MISSED APCH: After MSV VOR climb on MSV VOR R-193 to cross at or above 5600' within D5.0 MSV VOR, turn LEFT (not exceeding MSV VOR R-150) to MSV VOR climbing to 7000' to join hold or according to ATC instructions.					
Alt Set: hPa		Rwy Elev: 120 hPa		Trans level: By ATC	
1. MSV VOR and DME required.		Trans alt: 7000'		MSA MSV VOR	



MSV DME	1.0	2.0	3.0	4.0
ALTITUDE	4400'	4760'	5080'	5400'



Gnd speed-Kts	70	90	100	120	140	160	AFTER MSV 112.5	5600' within D5.0 on 112.5 R-193
Descent Angle 3.04°	376	484	538	645	753	861		
MAP at VOR or								
D4.0 to MAP	4.0	3:26	2:40	2:24	2:00	1:43		

STRAIGHT-IN LANDING RWY 20		CIRCLE-TO-LAND	
Missed apch climb gradient mim 4.0%		Missed apch climb gradient mim 4.0%	
MDA(H) 4400' (949')		Not Authorized West of Apt	
		MDA(H)	

PANS OPS	A	4000m	Max Kts	5300' (1849') -5000m
	B		100	
	C		135	
	D		180	

CHANGES: None.

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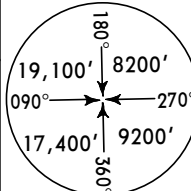
19 MAY 17
Eff 25 May

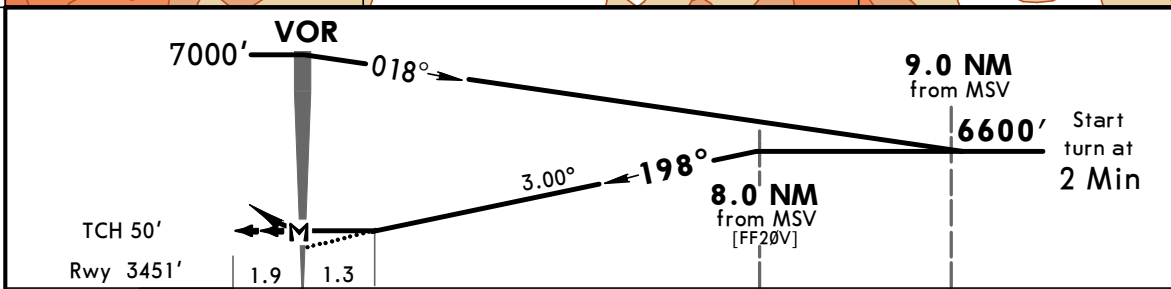
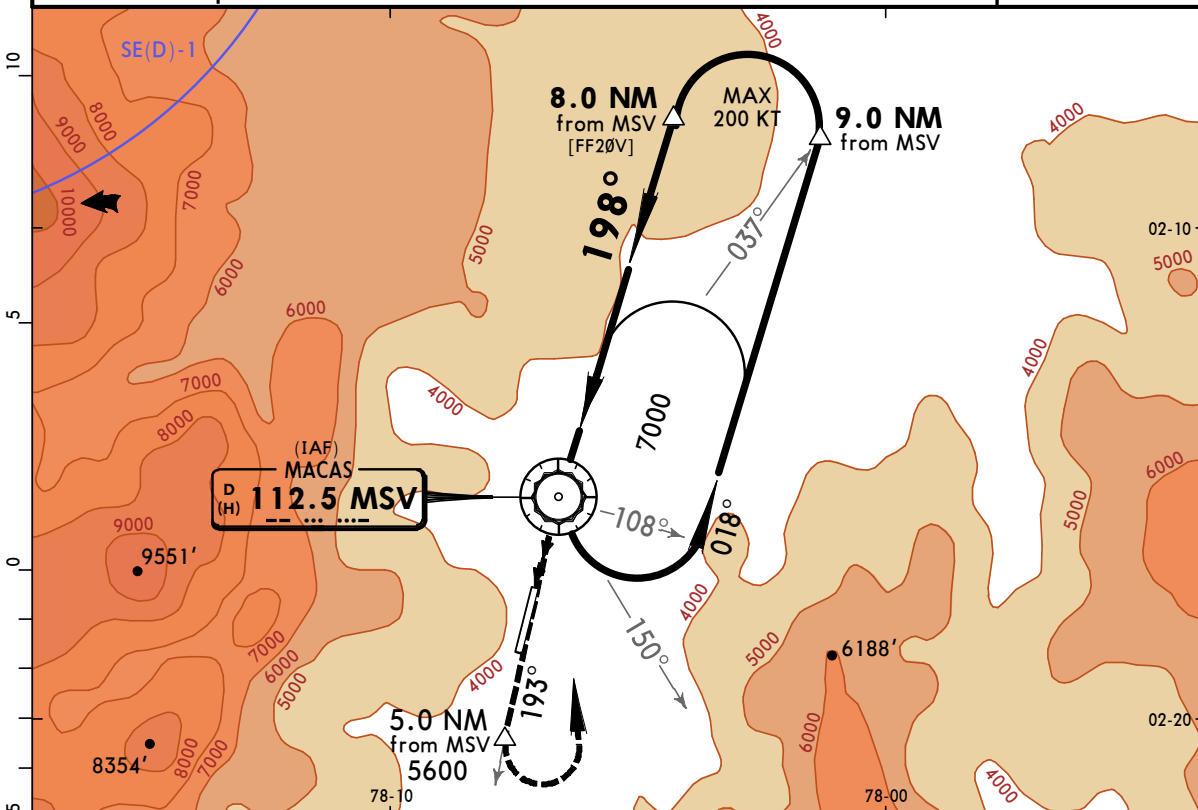
(13-5)

MISSED APCH CLIMB
GRADIENT MIM 4.0%

VOR V Rwy 20

BRIEFING STRIP™

GUAYAQUIL Control (ACC)		*SHELL Approach		*MACAS Tower	
128.3 123.9		119.5		123.0	
VOR MSV 112.5	Final Apch Crs 198°	No FAF	MDA(H) 4500' (1049)	Apt Elev 3451' Rwy 3451'	
MISSED APCH: After MSV VOR climb on MSV VOR R-193 to cross at or above 5600' within 5.0 NM MSV VOR, turn LEFT (not exceeding MSV VOR R-150) to MSV VOR climbing to 7000' to join hold or according to ATC instructions.					
Alt Set: hPa Rwy Elev: 120 hPa		Trans level: By ATC		Trans alt: 7000'	
1. MSV VOR required.					
MSA MSV VOR					



Gnd speed-Kts	70	90	100	120	140	160	AFTER MSV		5600'	5.0 NM	MSV
Descent Angle	3.00°	372	478	531	637	743	112.5		↑	MSV	112.5
MAP at VOR or											R-193
8.0 NM to MAP	8.0	6:51	5:20	4:48	4:00	3:26					

STRAIGHT-IN LANDING RWY 20				CIRCLE-TO-LAND			
Missed apch climb gradient mim 4.0%				Missed apch climb gradient mim 4.0%			
MDA(H) 4500' (1049')				Not Authorized West of Apt			
A	5000m			Max Kts	MDA(H) _____		
B				100	5300' (1849') -5000m		
C				135			
D				180			
				205			

CHANGES: Airport and runway elevation.

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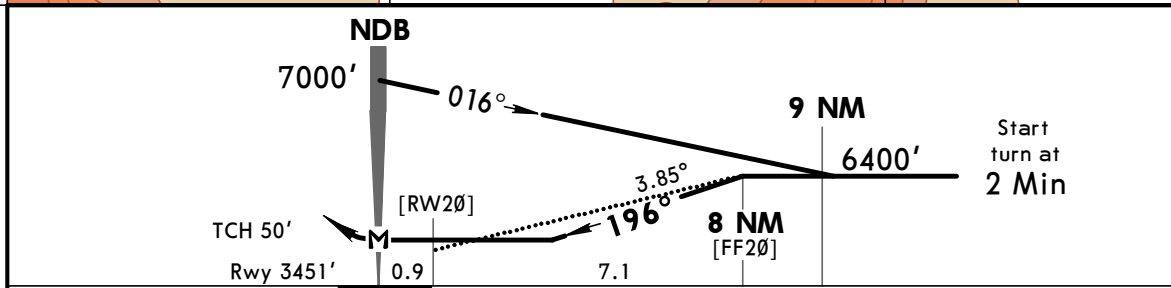
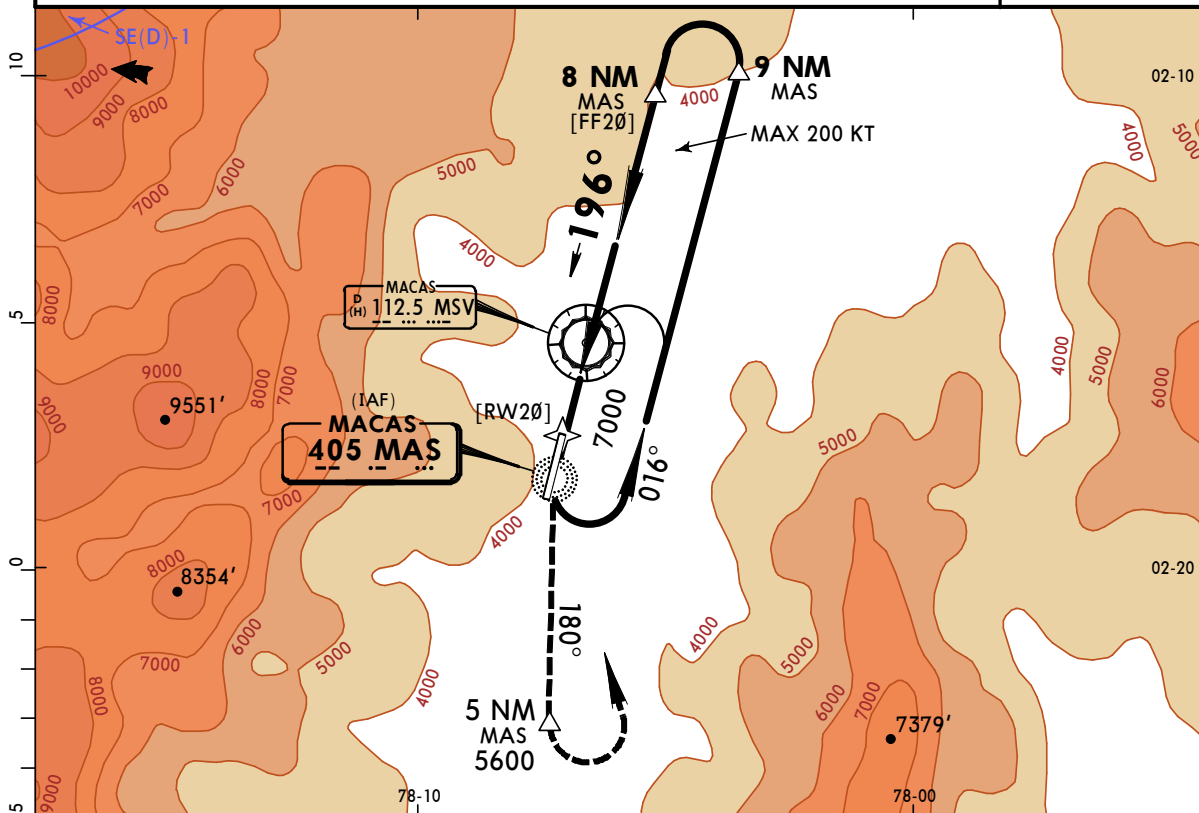
19 MAY 17
Eff 25 May

16-1

**MISSD APCH CLIMB
GRADIENT MIN 4.0%**

NDB Rwy 20

GUAYAQUIL Control (ACC)		*SHELL Approach		*MACAS Tower	
128.3	123.9	119.5		123.0	
NDB MAS 405	Final Apch Crs 196°	No FAF	MDA(H) 4500' (1049')	Apt Elev 3451'	Rwy 3451'
MISSED APCH: After MAS NDB climb on course 180° to cross at or above 5600' within 5 NM MAS NDB, turn LEFT to MAS NDB climbing to 7000' and hold or according to ATC instructions.					
Alt Set: hPa	Rwy Elev: 120 hPa	Trans level: By ATC	Trans alt: 7000'		MSA MAS NDB



Gnd speed-Kts	70	90	100	120	140	160	<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <div style="font-size: 2em; font-weight: bold;">5600'</div> <div style="font-size: 1.5em;">↑</div> </div> <div style="margin: 0 10px;">within</div> <div style="text-align: center;"> <div style="font-size: 2em; font-weight: bold;">5 NM</div> </div> <div style="margin: 0 10px;">on</div> <div style="text-align: center;"> <div style="font-size: 2em; font-weight: bold;">180°</div> </div> </div>
Descent Angle 3.85°	477	613	682	818	954	1090	
MAP at NDB or							
8 NM to MAP 8.0	6:51	5:20	4:48	4:00	3:26	3:00	

STRAIGHT-IN LANDING RWY 20		CIRCLE-TO-LAND	
Missed apch climb gradient min 4.0%		Missed apch climb gradient min 4.0%	
MDA(H) 4500' (1049')		Max Kts	Not Authorized West of Apt
A	5000m	100	5300' (1849') -5000m
B		135	
C		180	
D		205	