

JEPPESEN

30 JAN 15

10-1B

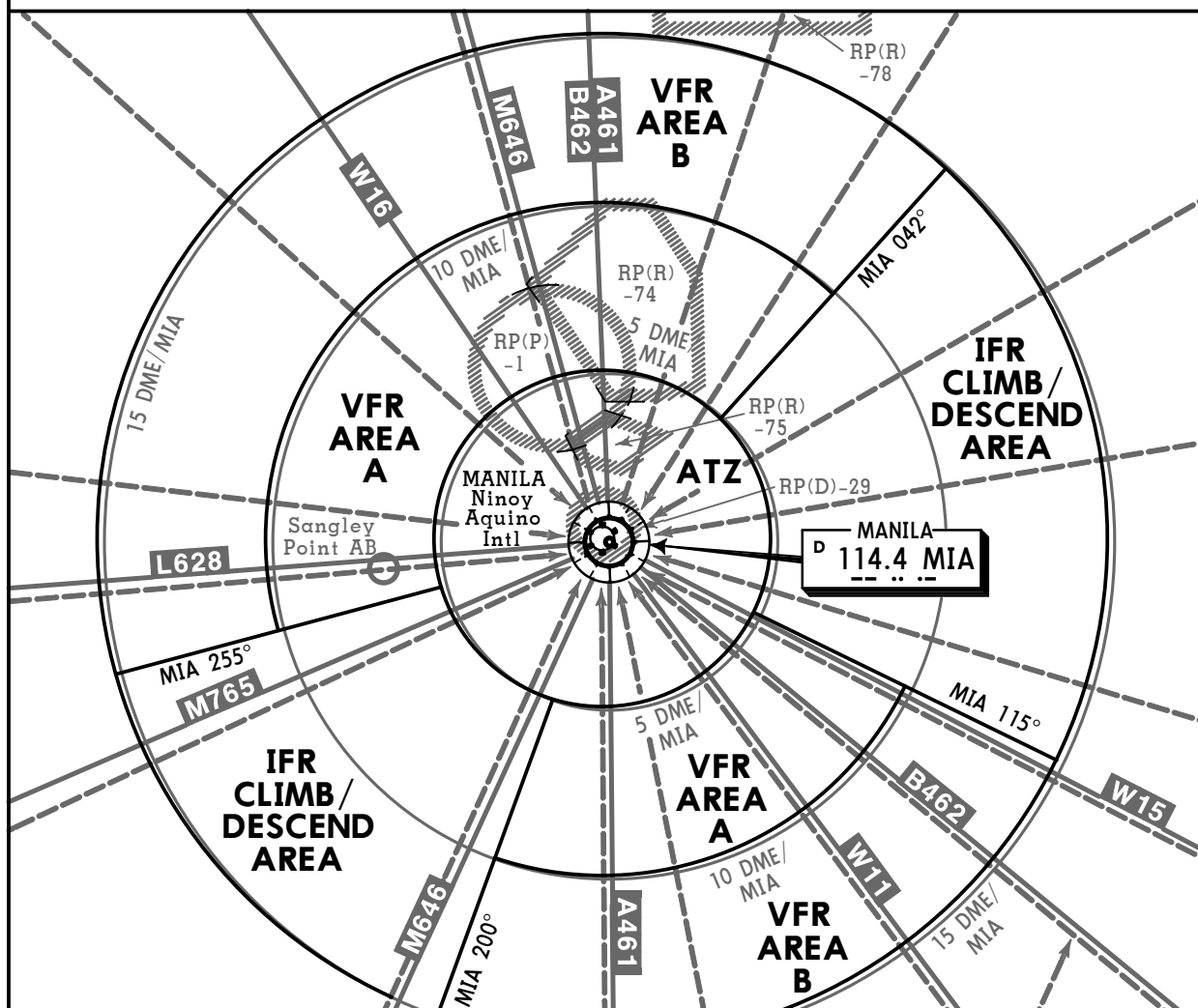
MANILA, PHILIPPINES
MANILA VFR AREAS AND
IFR CLIMB/DESCEND AREAS

(FOR ORIENTATION USE ONLY)

MANILA TRAFFIC CONTROL PROCEDURES

COMMUNICATIONS

VFR AREAS Manila Twr 118.1 118.4 IFR CLIMB/DESCEND AREAS Manila App 119.7 127.7



SECTOR ALTITUDES

IFR CLIMB/DESCEND AREA	VFR AREA A	VFR AREA B	ATZ
UNL	1500	2500	1999
GND	GND	GND	GND

FLIGHT PROCEDURES

SPEED RESTRICTIONS WITHIN MANILA TMA (FOR ARRIVING AIRCRAFT)

Mandatory IAS unless otherwise authorized by ATC.

Entering TMA: 250 KTS. At 20NM Ninoy Aquino Intl Apt: 210 KTS. At 10NM Ninoy Aquino Intl Apt: 180 KTS. At 5NM Ninoy Aquino Intl Apt: 150 KTS.

VFR OPERATIONS:

1. Be equipped with 118.1 MHz transceivers and any of the following approach frequencies: 119.7 MHz, 121.1 MHz, and 125.1 MHz.
2. Prior to entering the designated VFR areas, contact Manila Tower on 118.1.
3. Adhere to the established MIA VFR arrival/departure routings.
4. Maintain the required altitude of 2500FT or below within 15NM from the APT. Cruise/climb to higher altitude shall be on a prior approval from Manila Approach.
5. When intending to transit the IFR climb/descend areas, contact Manila Approach on 119.7 MHz, 121.1 MHz, 125.1 MHz for the necessary clearance.
6. When requesting radar vector within 15NM radius maintain 2500FT unless otherwise instructed by Manila Approach Control.

IFR OPERATIONS:

1. The radar traffic circuit shall not penetrate the aerodrome traffic zone.
2. IFR traffic radar vector to final approach of runways 06/24 shall maintain 3500FT prior to entering the IFR climb/descend area. Descent shall be made without violating the radar minimum altitude.
3. In the event of radar and/or radio communication failure, descent to 3000FT shall be effected only in the designated VFR areas-10 miles from the APT. Otherwise, follow the Lost Communication Procedures.
4. Arriving aircraft on radar vector to Manila shall not cancel IFR clearance within 20NM.

RPLL/MNL

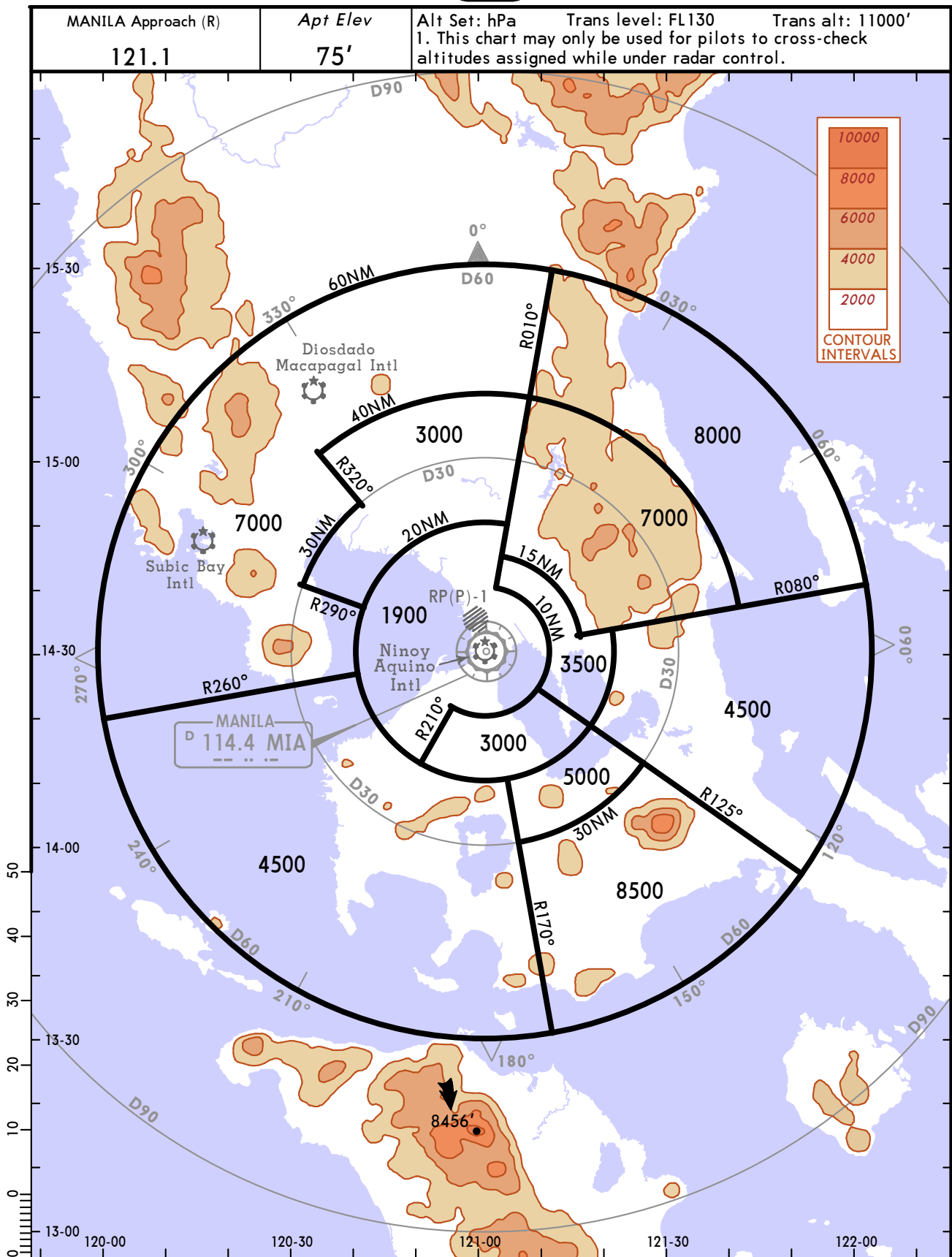
JEPPESEN

MANILA, PHILIPPINES

NINYO AQUINO INTL

24 OCT 14 (10-1R)

RADAR MINIMUM ALTITUDES



1. Minimum altitudes are calculated taking into account of minimum clearance above terrain/obstacles. Radar control service cannot be provided to aircraft below the applicable minimum. However, aircraft at designated altitude in relevant sector is not assured of radar contact.
2. LOSS OF COMMUNICATION
 - a. SQUAWK 7600 immediately, and
 - b. Follow established procedures.

RPLL/MNL
NINOY AQUINO INTL

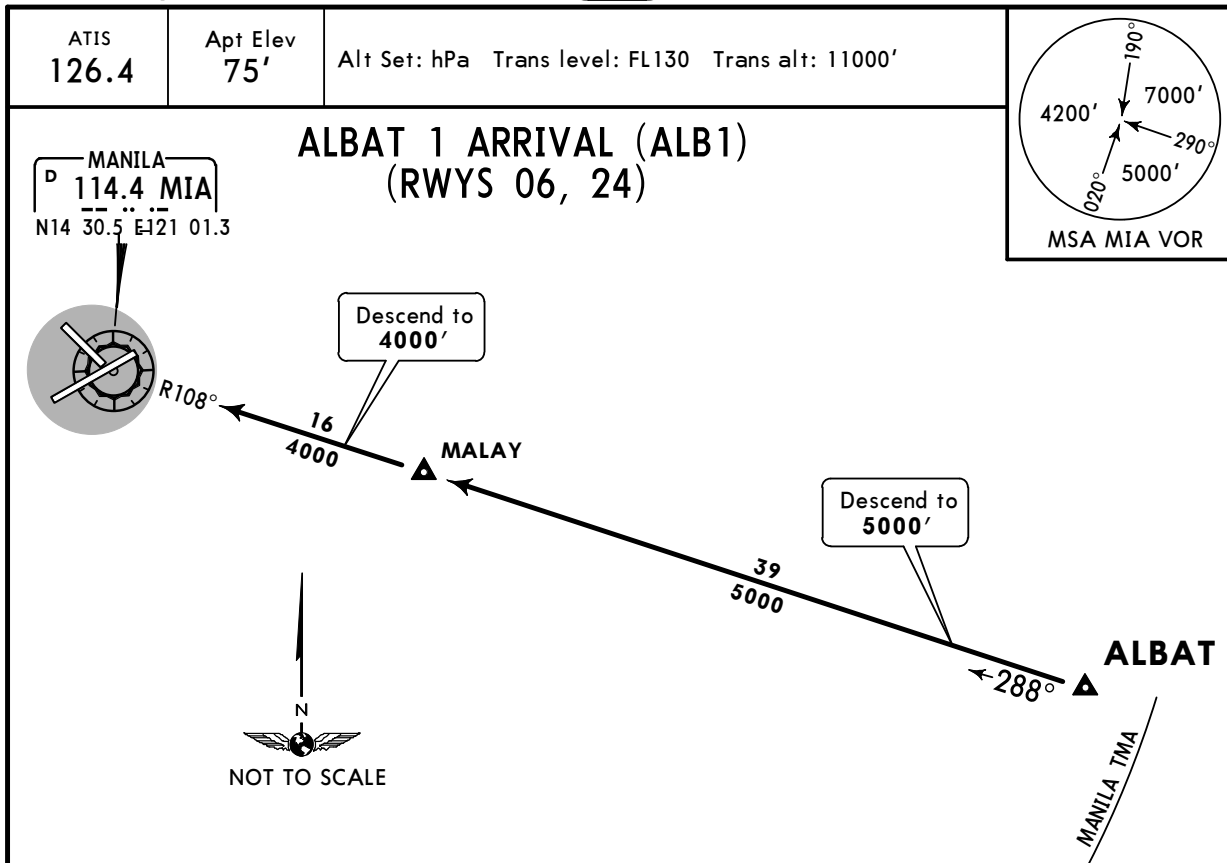
JEPPESEN

24 FEB 17

10-2

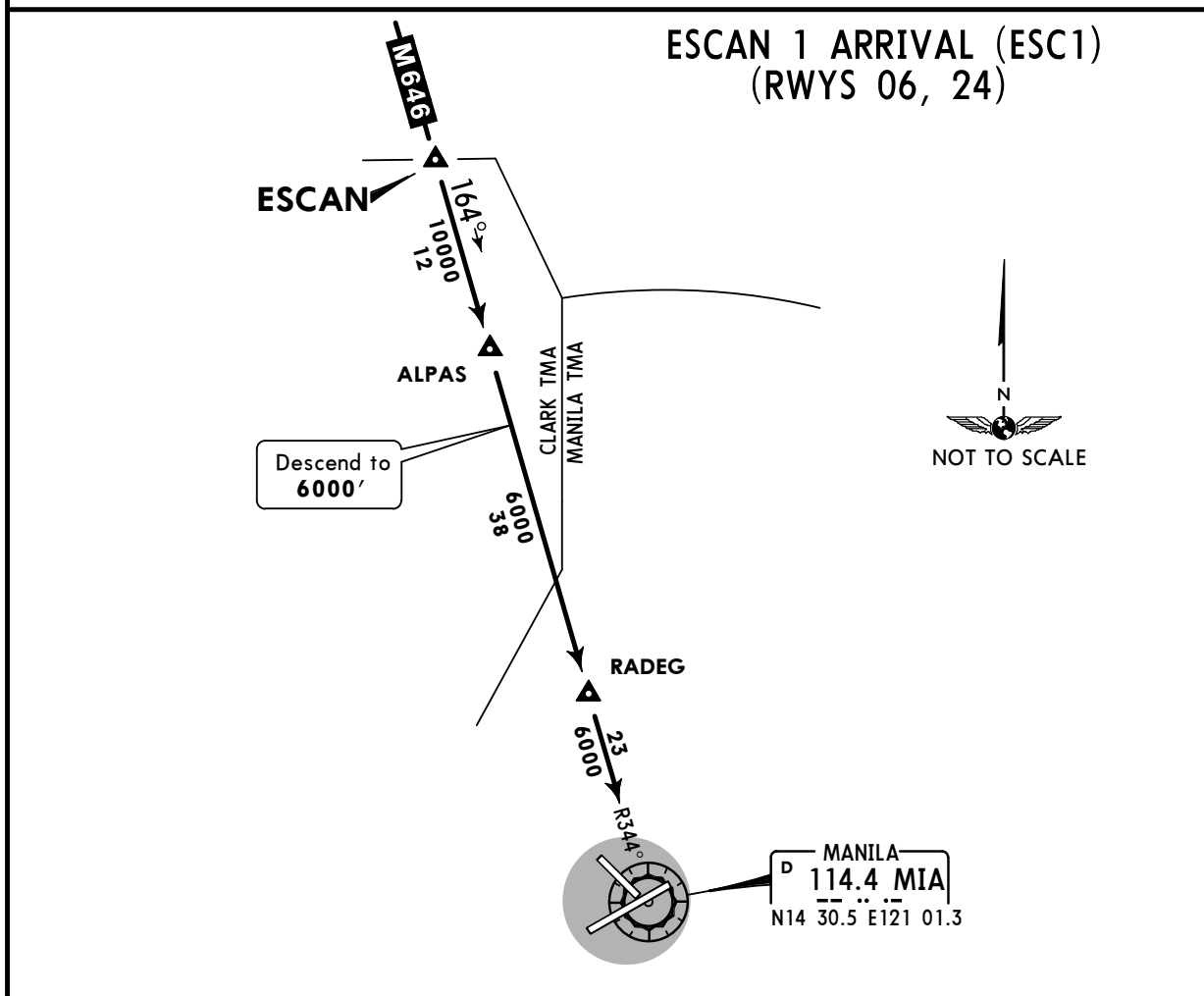
Eff 2 Mar

MANILA, PHILIPPINES

STAR

ROUTING

At ALBAT, track in on MIA R-108 and descend to 5000'. At MALAY, descend to 4000'.



ROUTING

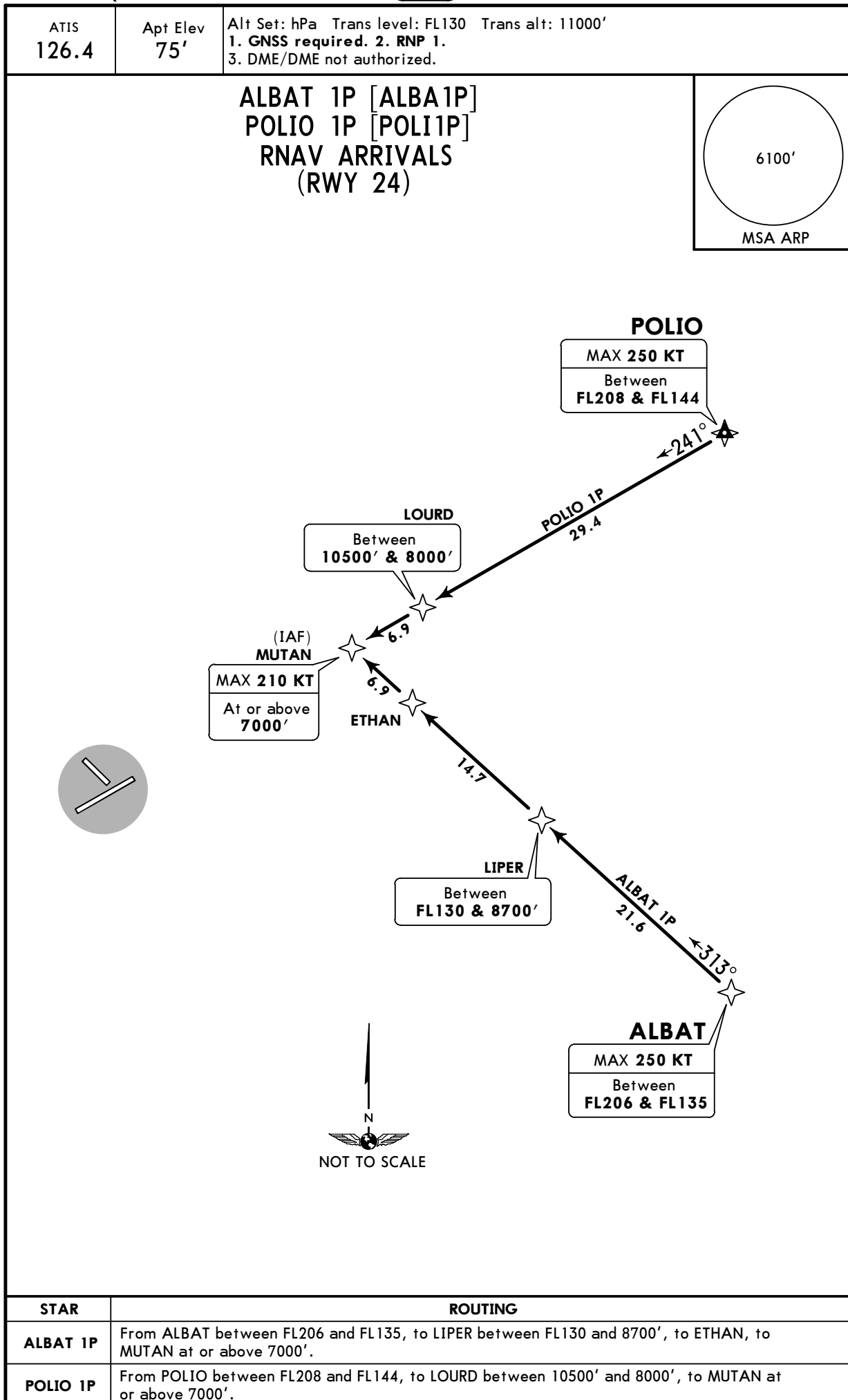
At ESCAN, track in on MIA R-344 to ALPAS. At ALPAS, descend to 6000' to MIA VOR via RADEG.

RPLL/MNL
NINOY AQUINO INTL

JEPPESEN
24 FEB 17 **(10-2A)** **Eff 2 Mar**

MANILA, PHILIPPINES

RNAV STAR



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NINYO AQUINO INTL

JEPPESEN

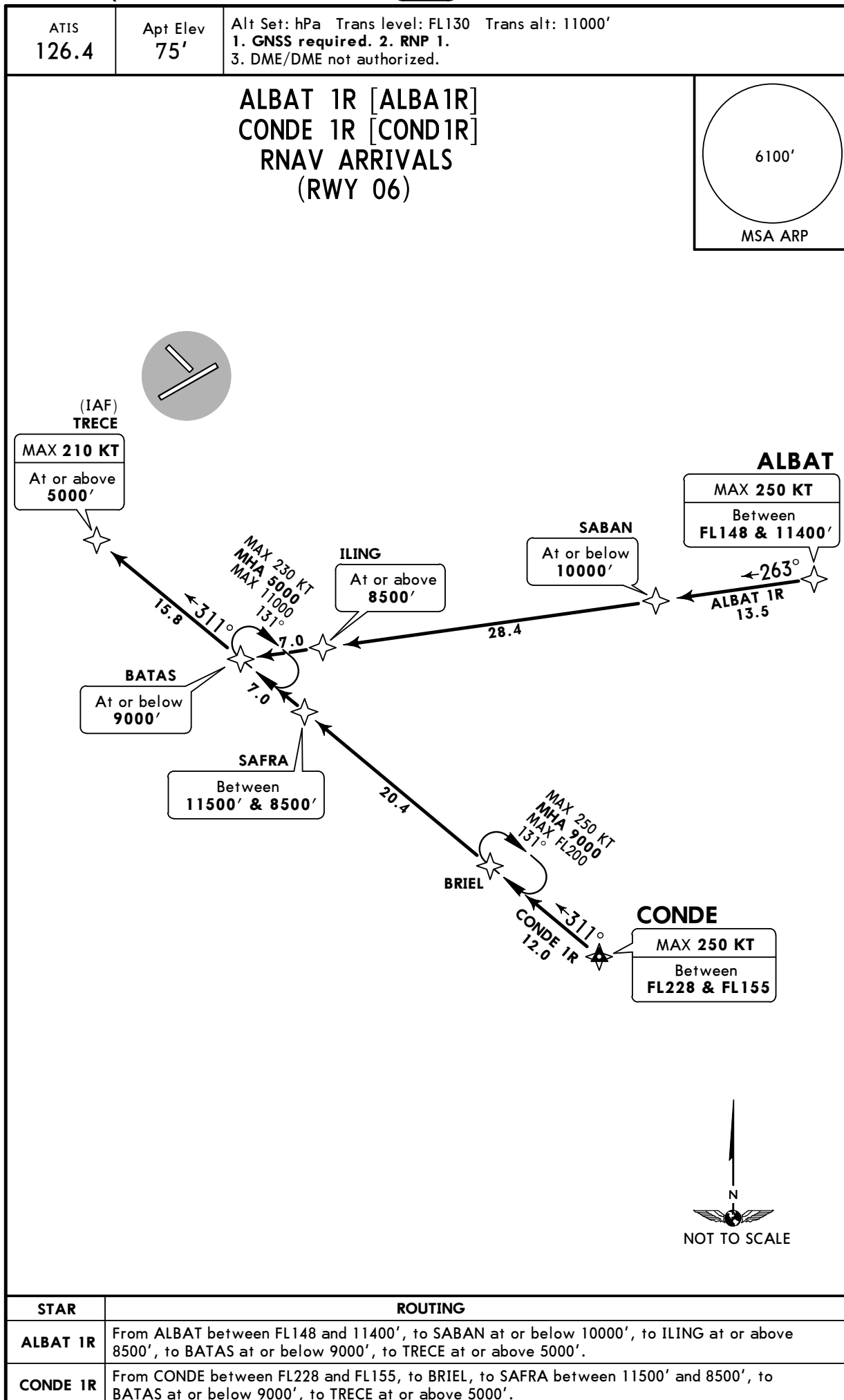
24 FEB 17

(10-2B)

Eff 2 Mar

MANILA, PHILIPPINES

RNAV STAR



RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 FEB 17 **(10-2C)** **Eff 2 Mar**

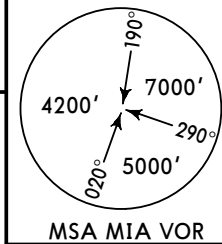
MANILA, PHILIPPINES

STAR

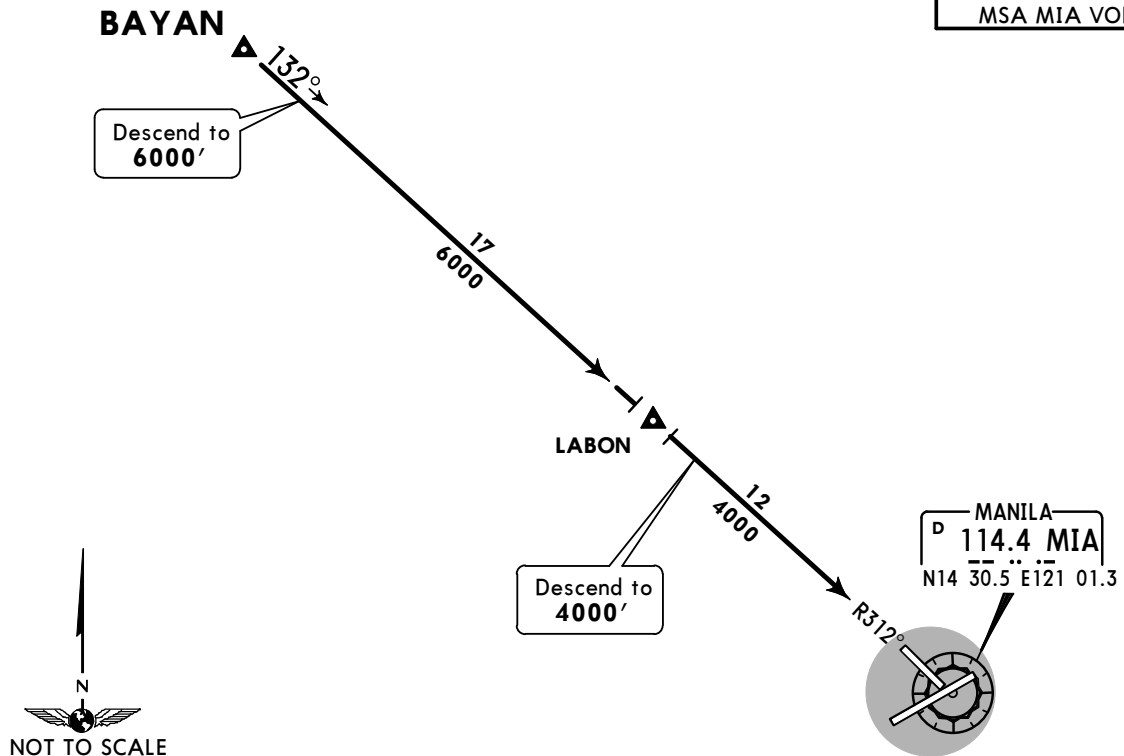
ATIS
126.4

Apt Elev
75'

Alt Set: hPa Trans level: FL130 Trans alt: 11000'



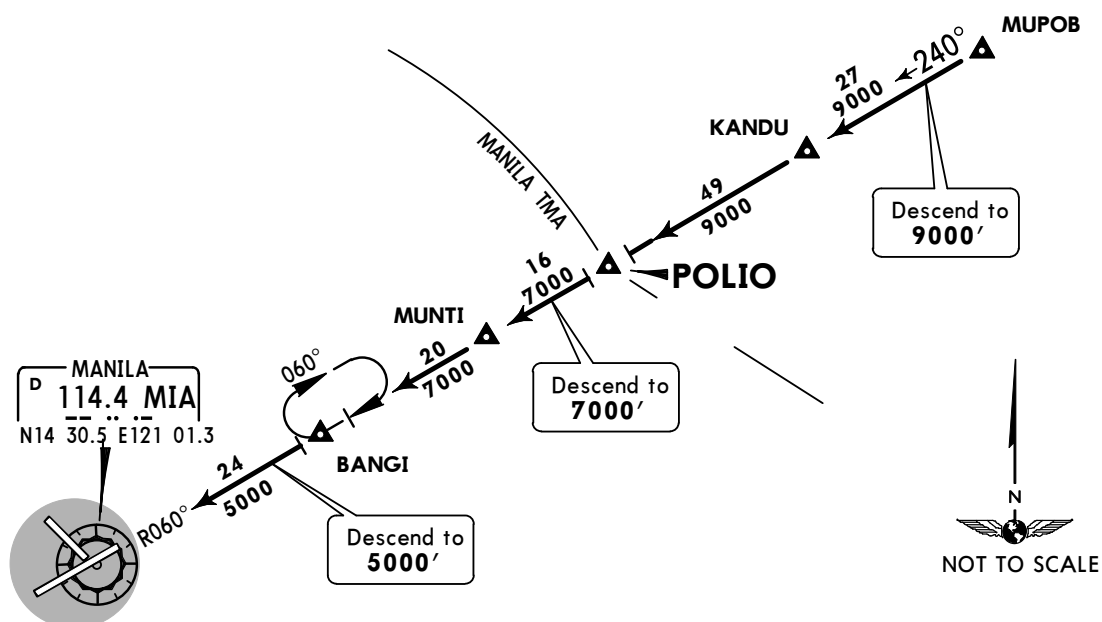
BAYAN 1A ARRIVAL (BYN1A)
(RWYS 06, 24)



ROUTING

At BAYAN, track in on MIA R-312 and descend to 6000'. At LABON, descend to 4000'.

POLIO 1 ARRIVAL (PLO1)
(RWYS 06, 24)



ROUTING

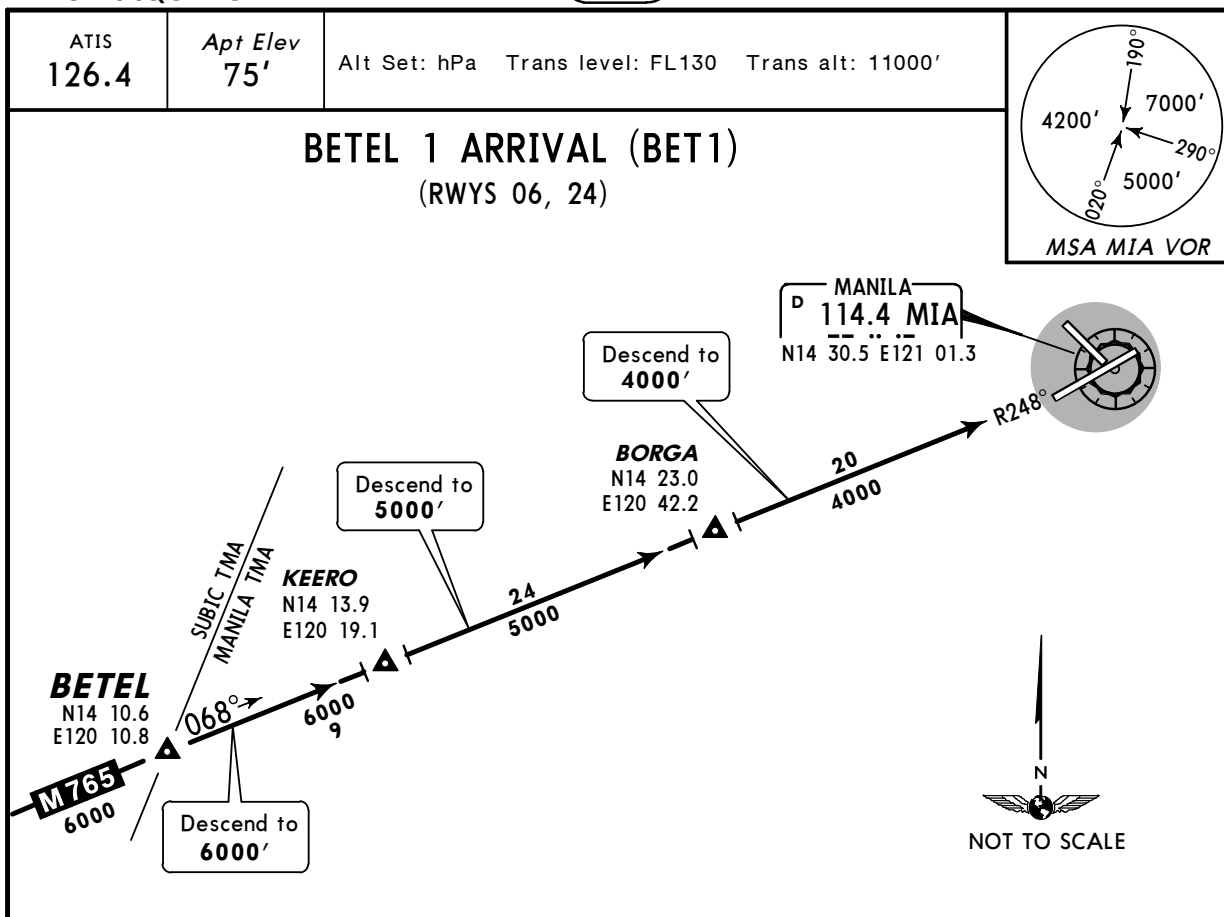
At MUPOB, track in on MIA R-060 to POLIO and descend to 9000'. At POLIO, proceed to BANGI via MUNTI and descend to 7000'. At BANGI, descend to 5000'.

RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 OCT 14 **(10-2D)**

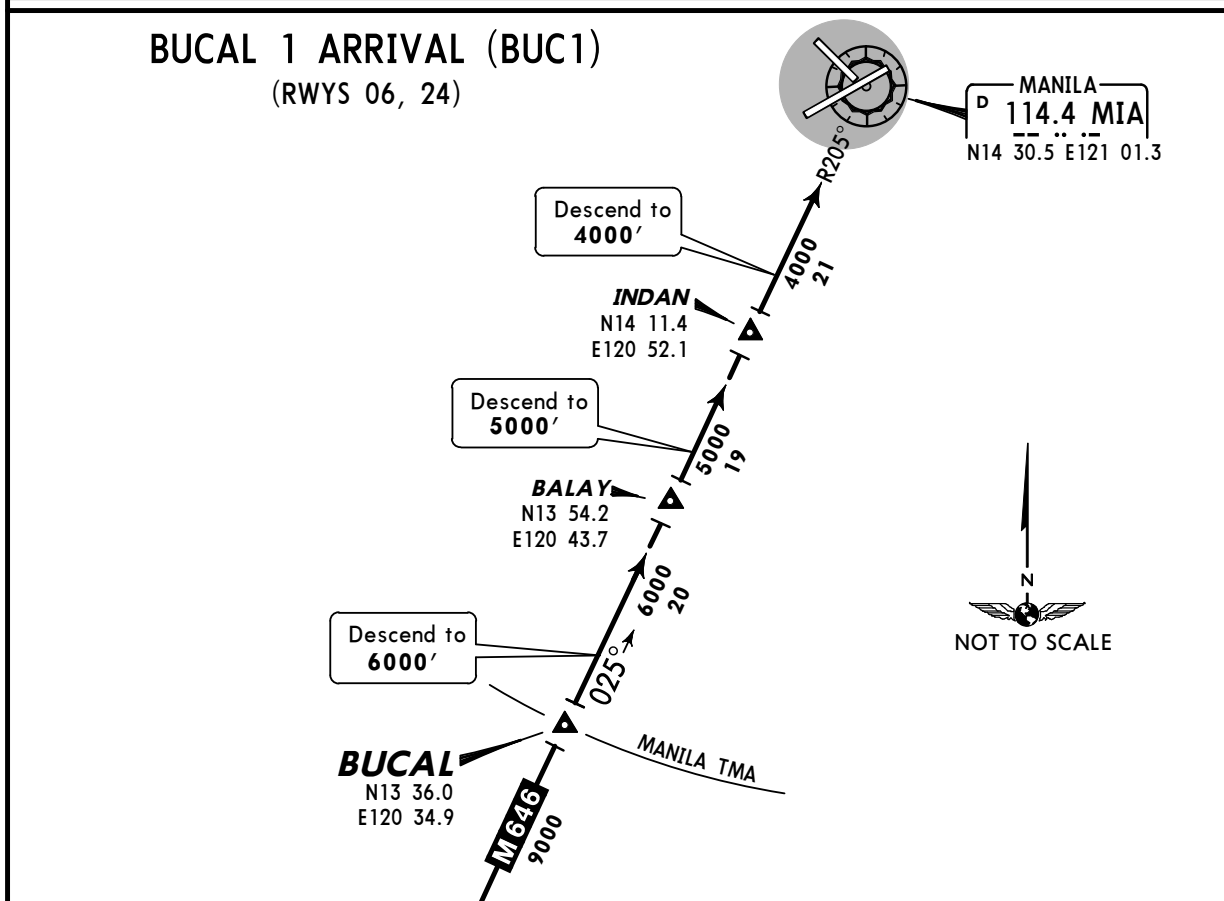
MANILA, PHILIPPINES

STAR



R OUT ING

At BETEL, track in on MIA R-248 and descend to 6000'. At KEERO, descend to 5000'.
At BORGA, descend to 4000'.



R OUT ING

At BUCAL, track in on MIA R-205 and descend to 6000'. At BALAY, descend to 5000'.
At INDAN, descend to 4000'.

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NINYO AQUINO INTL

JEPPESSEN
24 OCT 14 **(10-2E)**

MANILA, PHILIPPINES

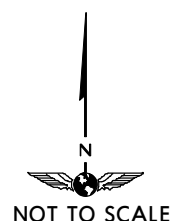
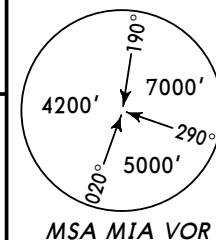
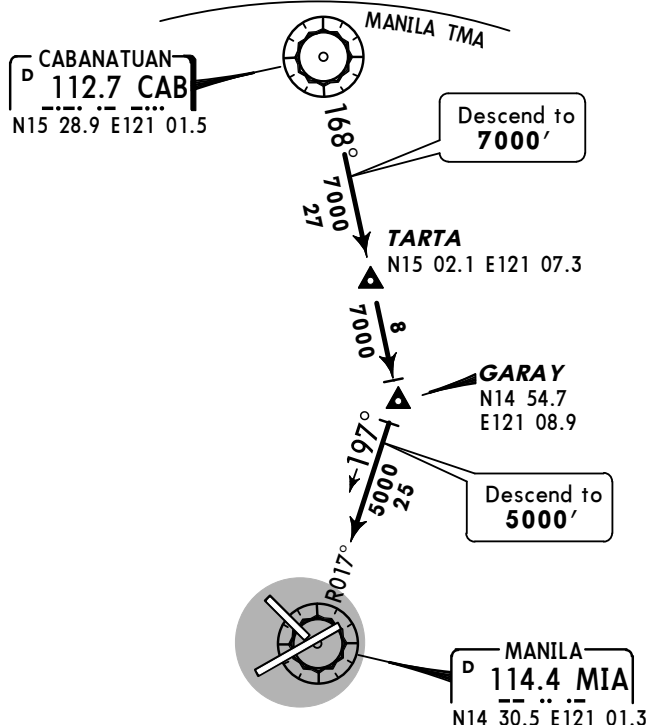
STAR

ATIS
126.4

Apt Elev
75'

Alt Set: hPa Trans level: FL130 Trans alt: 11000'

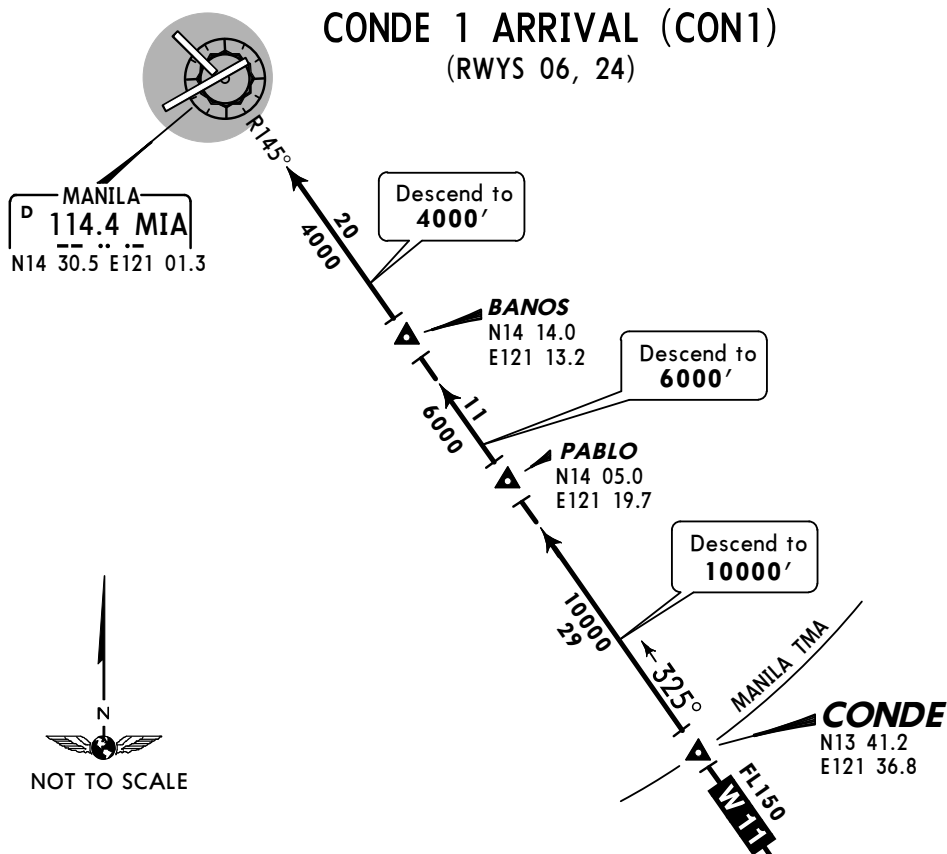
CABANATUAN 1 ARRIVAL (CAB1)
(RWYS 06, 24)



R OUT ING

At CAB, track out on CAB R-168 and descend to 7000' to GARAY via TARTA. At GARAY, track in on MIA R-017 and descend to 5000'.

CONDE 1 ARRIVAL (CON1)
(RWYS 06, 24)



R OUT ING

At CONDE, track in on MIA R-145 and descend to 10000'. At PABLO, descend to 6000'. At BANOS, descend to 4000'.

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NINYO AQUINO INTL

JEPPESEN

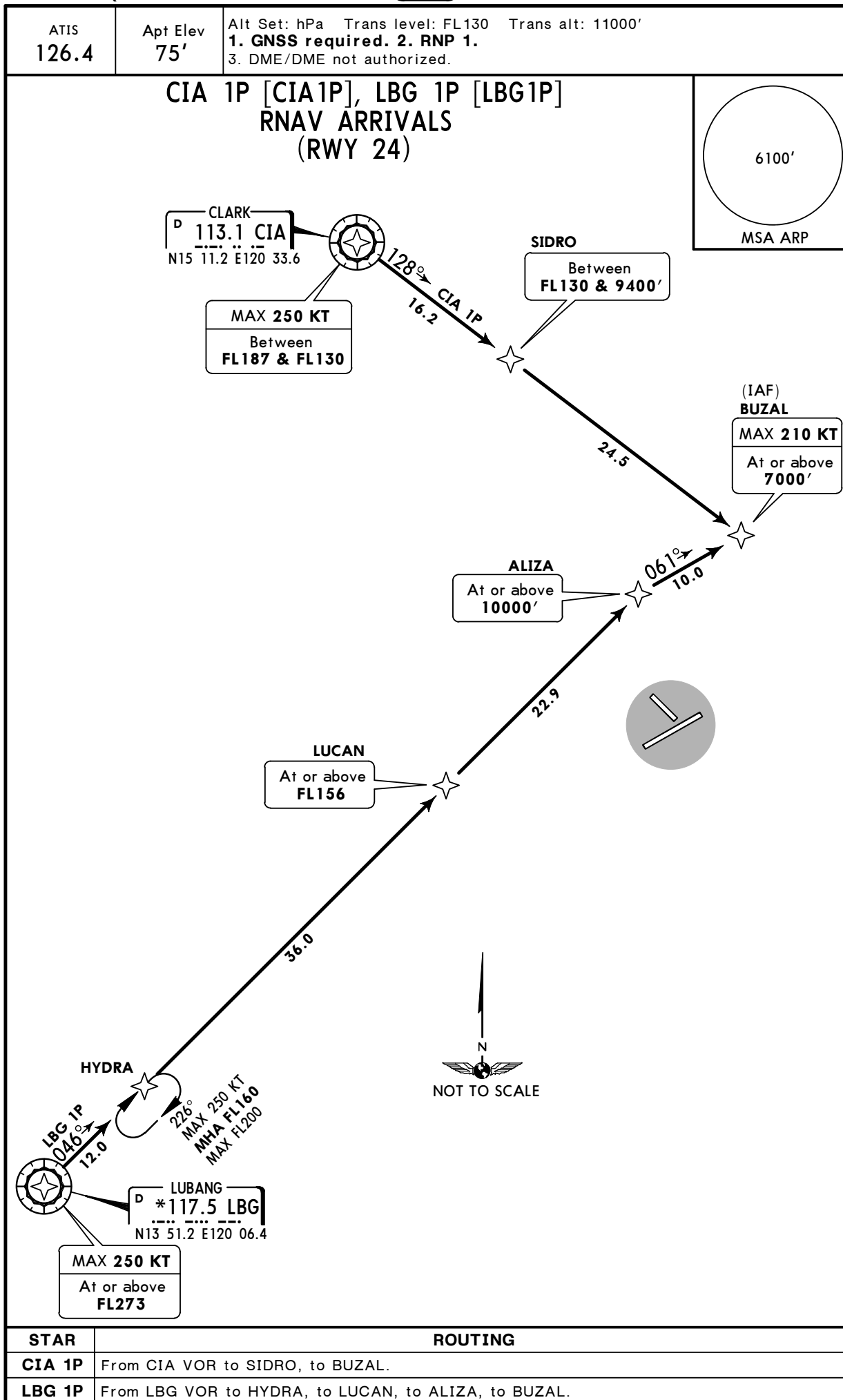
24 FEB 17

10-2F

Eff 2 Mar

MANILA, PHILIPPINES

RNAV STAR



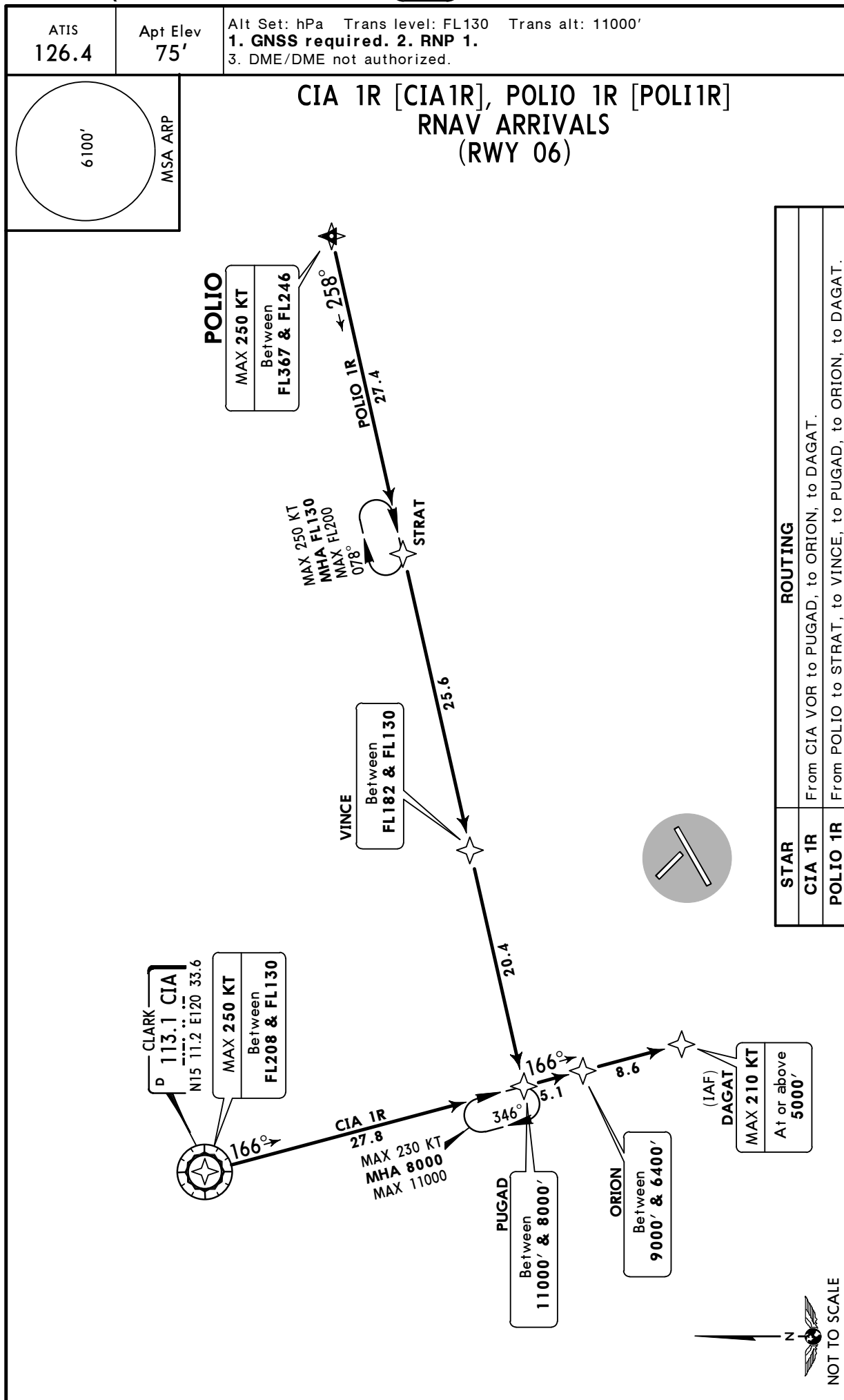
RPLL/MNL
NINYO AQUINO INTL

JEPPESEN
24 FEB 17 **10-2G**

Eff 2 Mar

MANILA, PHILIPPINES

RNAV STAR

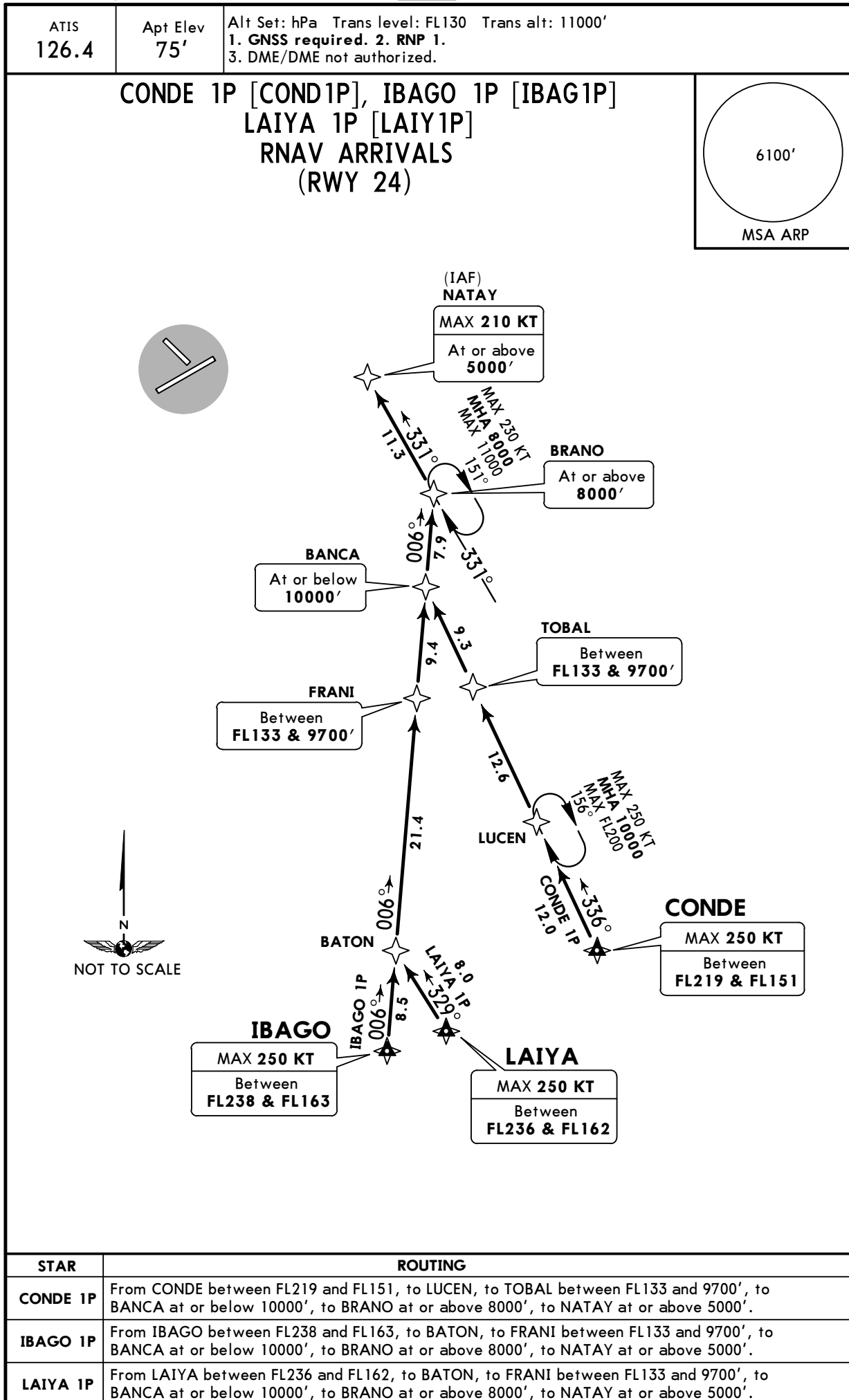


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NINOY AQUINO INTL

JEPPesen
24 FEB 17 **10-2G1** **Eff 2 Mar**

MANILA, PHILIPPINES

RNAV STAR



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NINYO AQUINO INTL

JEPPESEN

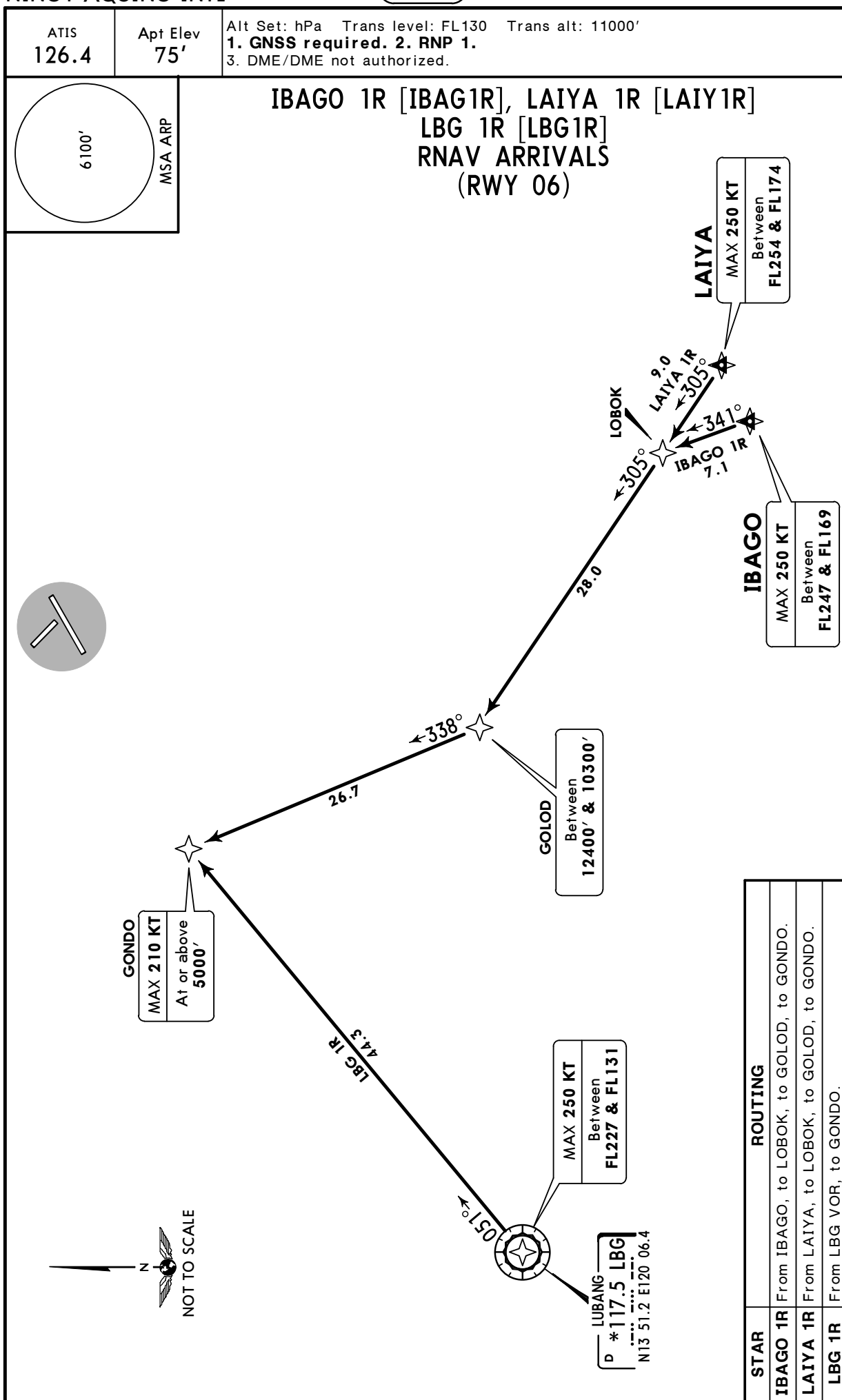
24 FEB 17

10-2G2

Eff 2 Mar

MANILA, PHILIPPINES

RNAV STAR



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NINYO AQUINO INTL

JEPPESEN
24 FEB 17 **(10-2H)** **Eff 2 Mar**

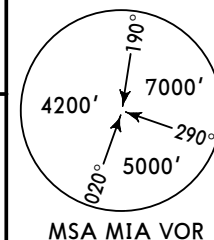
MANILA, PHILIPPINES

STAR

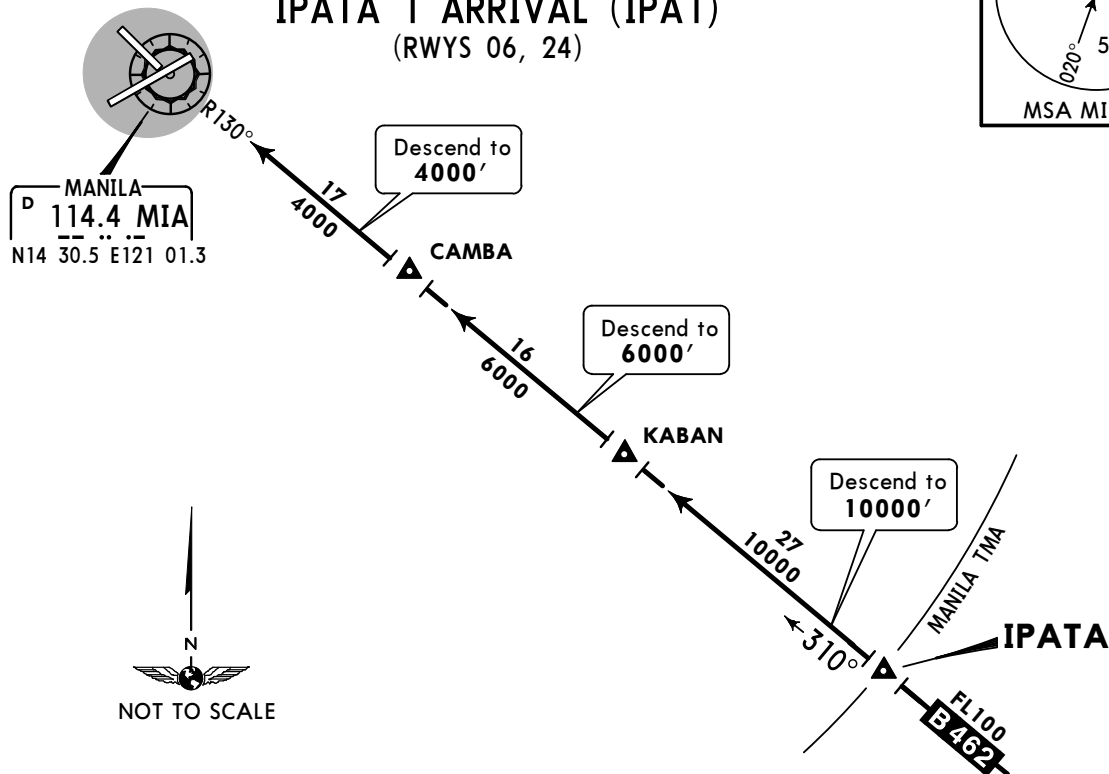
ATIS
126.4

Apt Elev
75'

Alt Set: hPa Trans level: FL130 Trans alt: 11000'



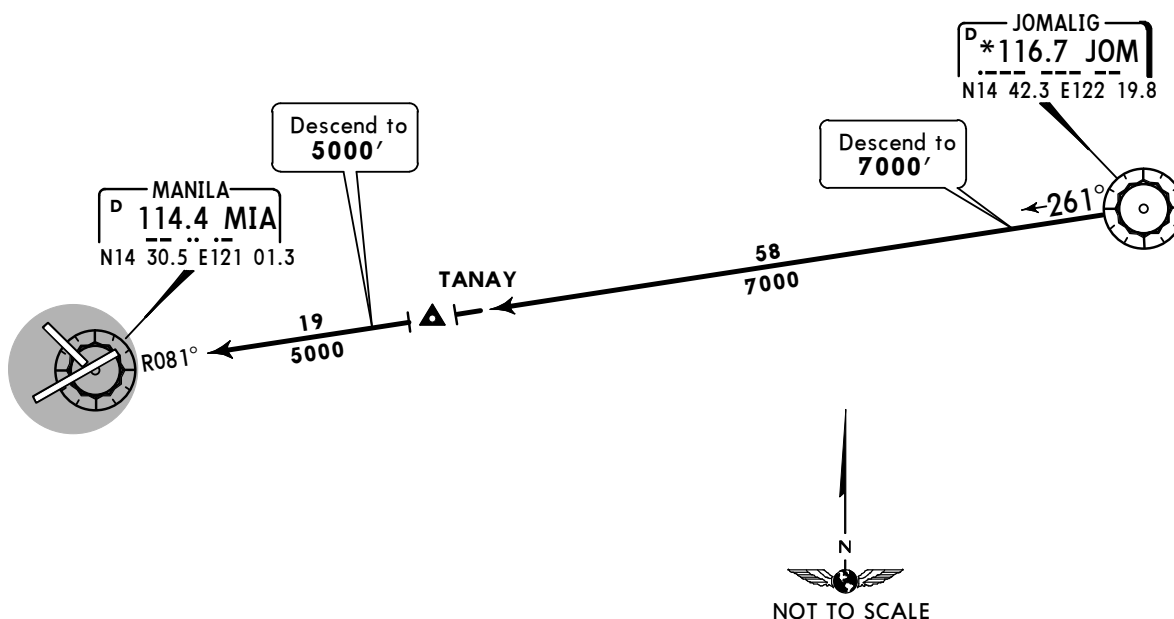
IPATA 1 ARRIVAL (IPA1)
(RWYS 06, 24)



R OUT ING

At IPATA, track in on MIA R-130 and descend to 10000'. At KABAN, descend to 6000'. At CAMBA, descend to 4000'.

JOMALIG 1 ARRIVAL (JOM1)
(RWYS 06, 24)



R OUT ING

At JOM, track in on MIA R-081 and descend to 7000'. At TANAY, descend to 5000'.

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JEPPESEN
24 FEB 17 **(10-2J)** Eff 2 Mar

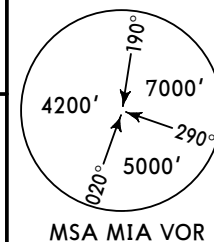
MANILA, PHILIPPINES

STAR

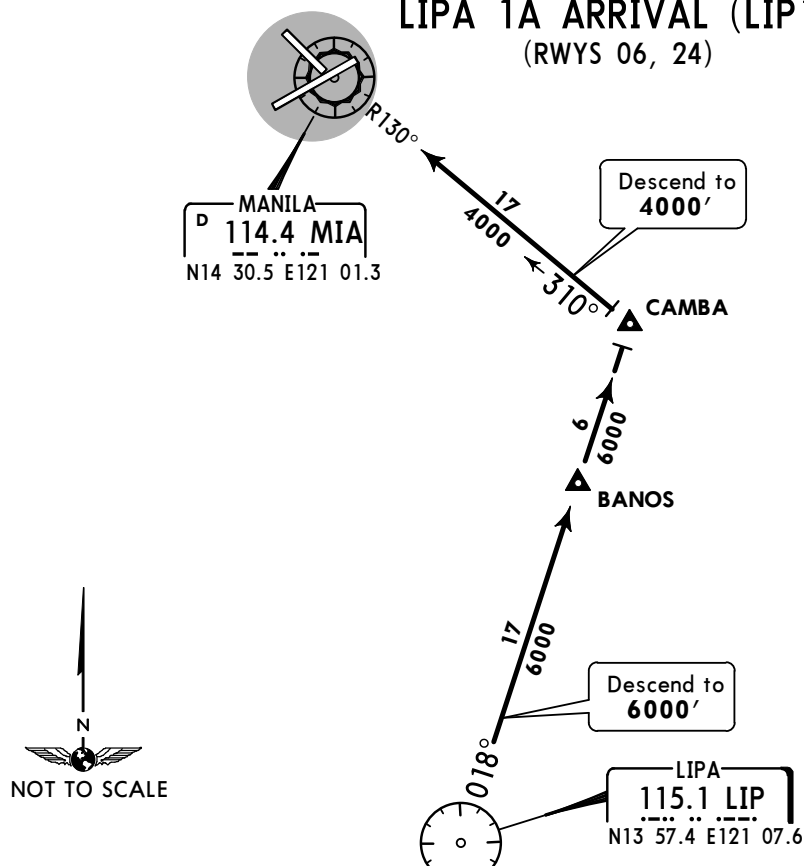
ATIS
126.4

Apt Elev
75'

Alt Set: hPa Trans level: FL130 Trans alt: 11000'



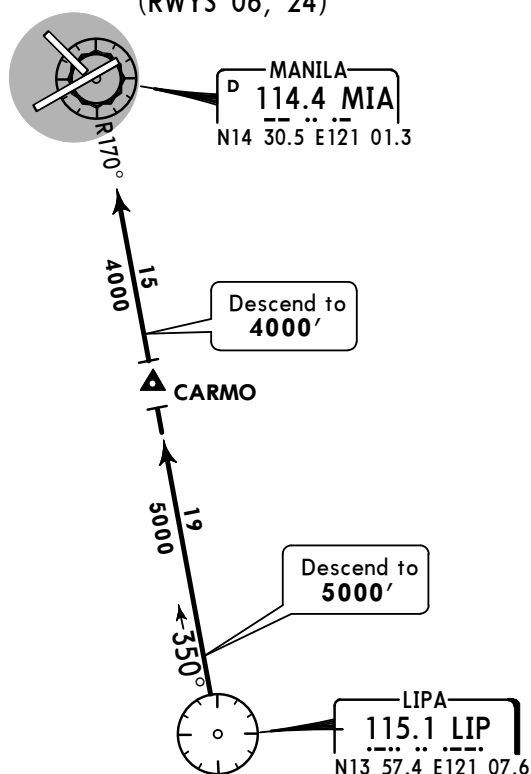
LIPA 1A ARRIVAL (LIP1A)
(RWYS 06, 24)



R OUT IN

At LIP, track out on LIP R-018 and descend to 6000' to CAMBA via BANOS. At CAMBA, track in on MIA R-130 and descend to 4000'.

LIPA 1B ARRIVAL (LIP1B)
(RWYS 06, 24)



R OUT IN

At LIP, track in on MIA R-170 and descend to 5000' to CARMO. At CARMO, descend to 4000'.

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NINYO AQUINO INTL

JEPPESEN
24 OCT 14 **(10-2K)**

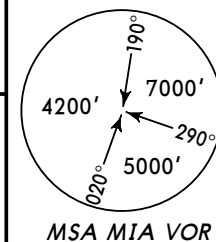
MANILA, PHILIPPINES

STAR

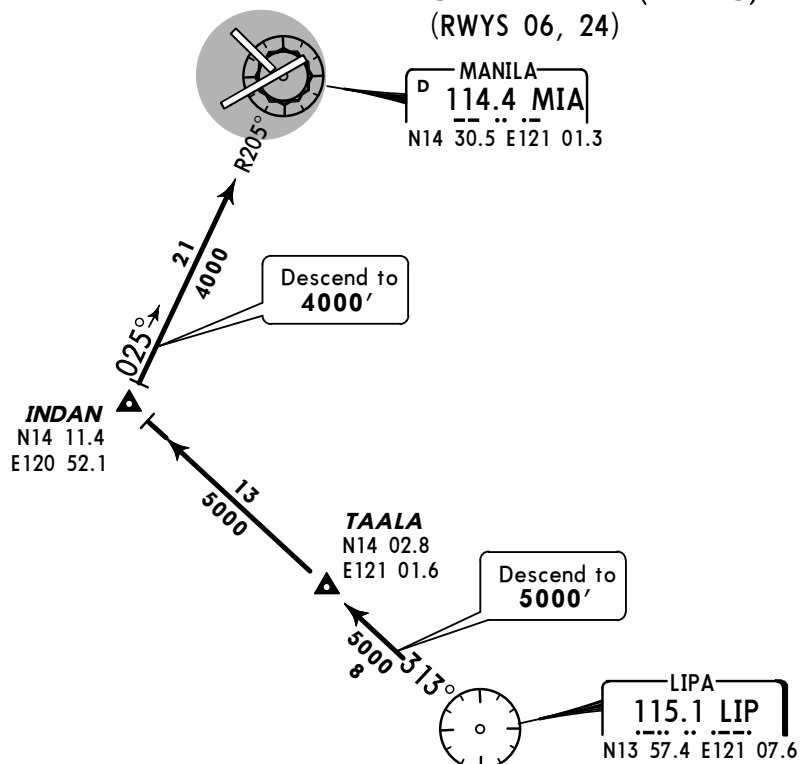
ATIS
126.4

Apt Elev
75'

Alt Set: hPa Trans level: FL130 Trans alt: 11000'



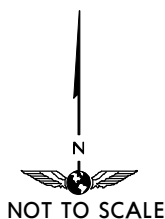
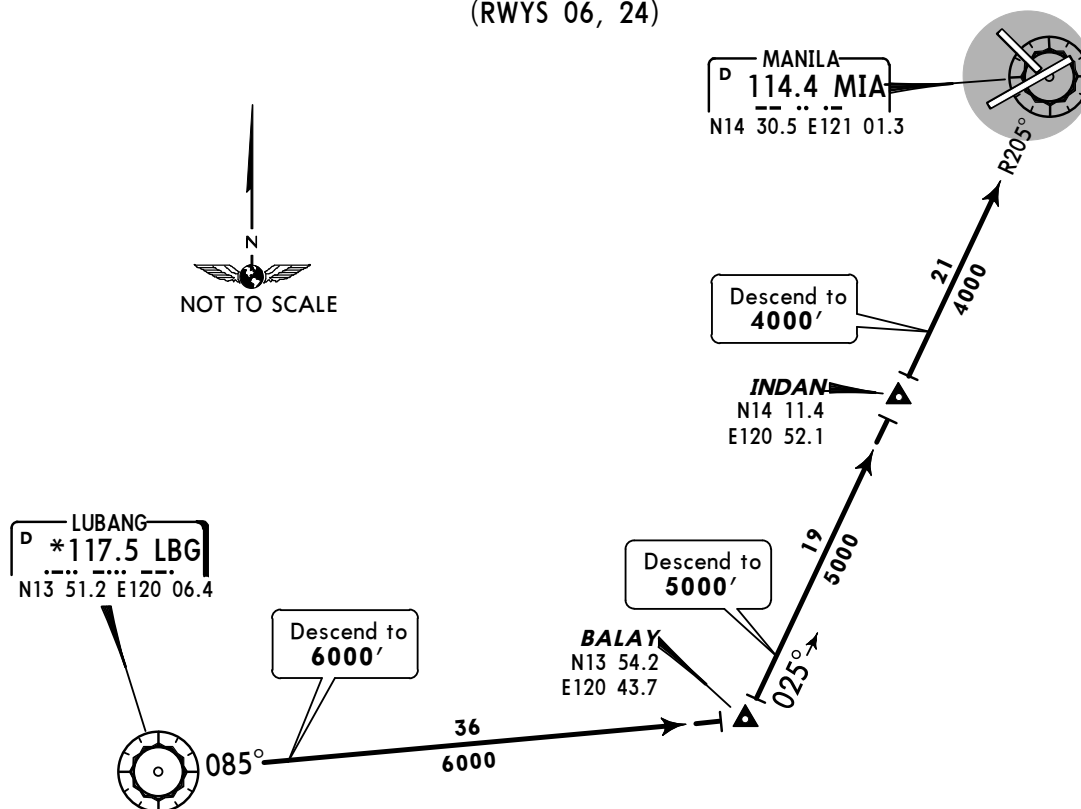
LIPA 1C ARRIVAL (LIP1C)
(RWYS 06, 24)



R OUT ING

At LIP, track out on LIP R-313 and descend to 5000' to INDAN via TAALA. At INDAN, track in on MIA R-205 and descend to 4000'.

LUBANG 1A ARRIVAL (LBG1A)
(RWYS 06, 24)



R OUT ING

At LBG, track out on LBG R-085 and descend to 6000' to BALAY. At BALAY, track in on MIA R-205 and descend to 5000'. At INDAN, descend to 4000'.

RPLL/MNL
NINYO AQUINO INTL

JEPPESSEN
24 OCT 14 **(10-2L)**

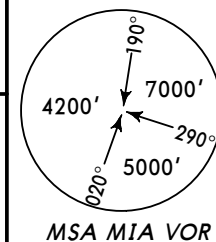
MANILA, PHILIPPINES

STAR

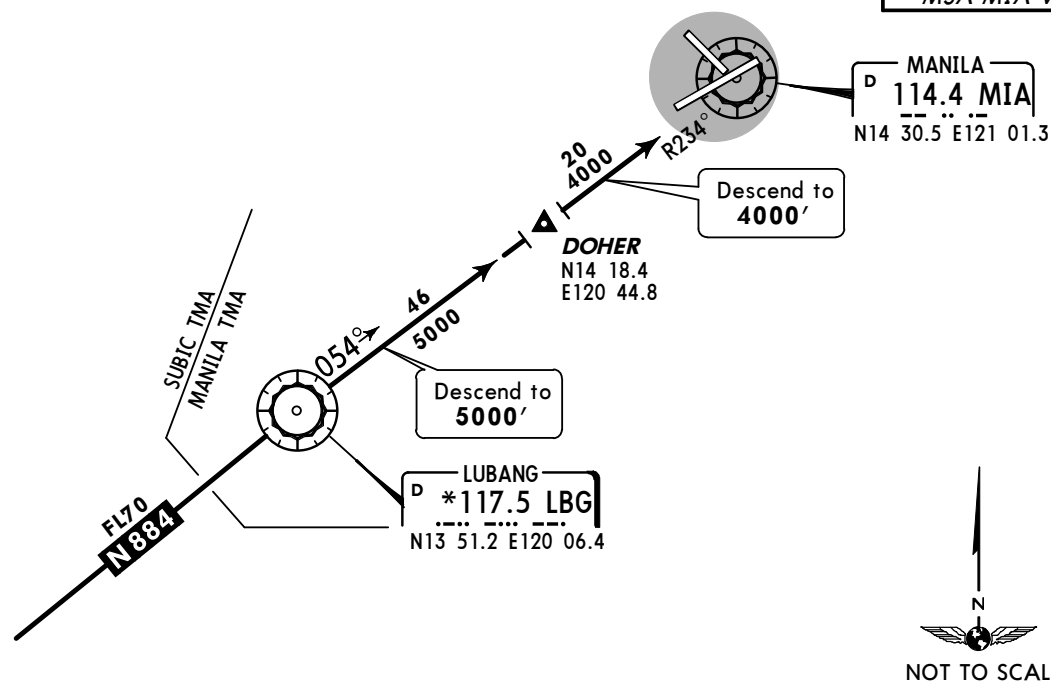
ATIS
126.4

Apt Elev
75'

Alt Set: hPa Trans level: FL130 Trans alt: 11000'



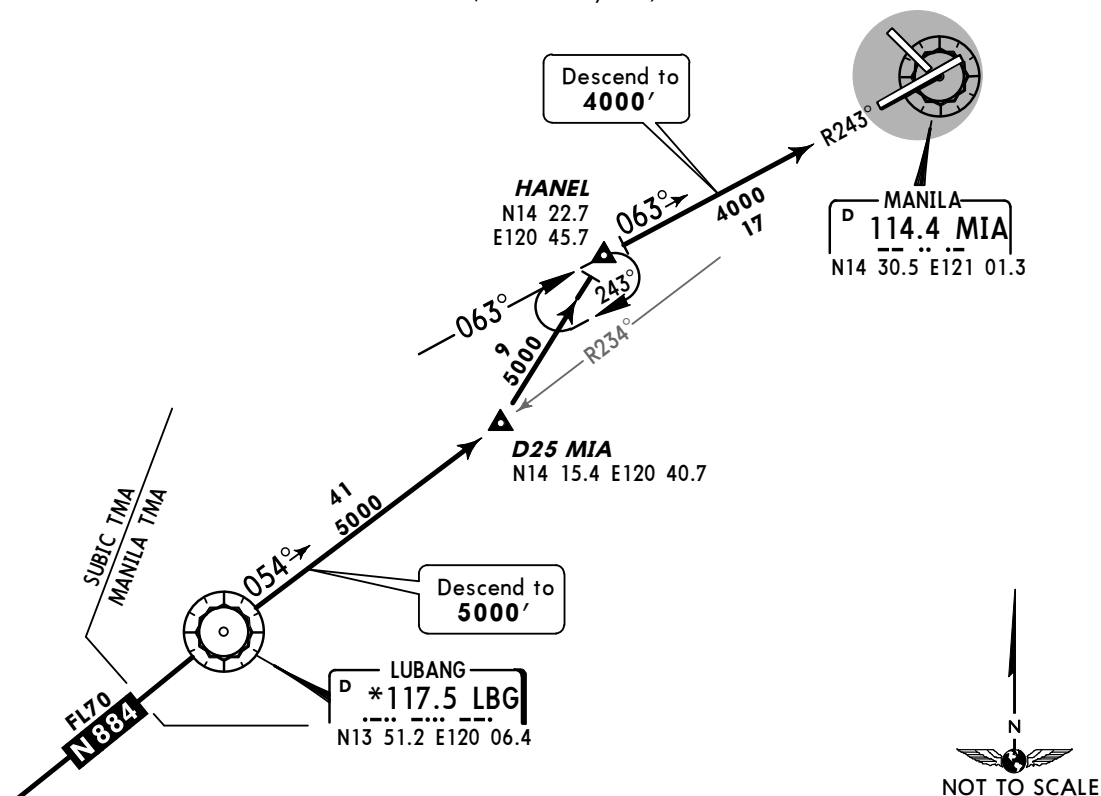
LUBANG 1B ARRIVAL (LBG1B)
(RWYS 06, 24)



R OUT ING

At LBG, track in on MIA R-234 and descend to 5000'. At DOHER, descend to 4000'.

LUBANG 1C ARRIVAL (LBG1C)
(RWYS 06, 24)



R OUT ING

At LBG track in on MIA R-234 and descend to 5000'. At D25 MIA, proceed to HANEL and track in on MIA R-243. At HANEL, descend to 4000'.

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NINYO AQUINO INTL

JEPPESEN

24 FEB 17

(10-2M)

Eff 2 Mar

MANILA, PHILIPPINES

STAR

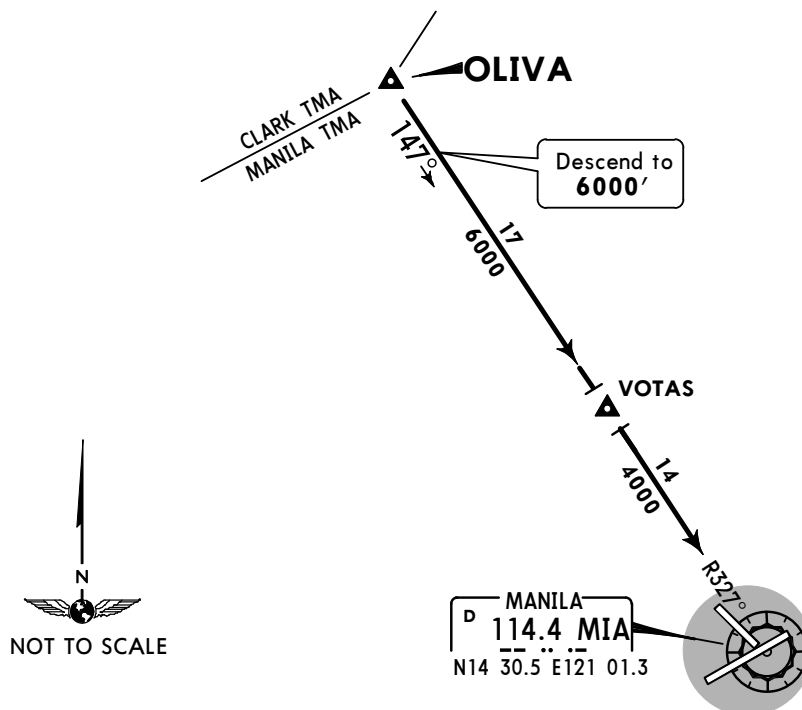
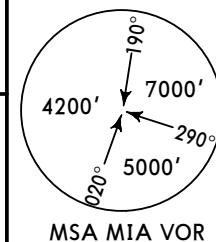
ATIS
126.4

Apt Elev
75'

Alt Set: hPa Trans level: FL130 Trans alt: 11000'

OLIVA 1A ARRIVAL (OLI1A)

(RWYS 06, 24)

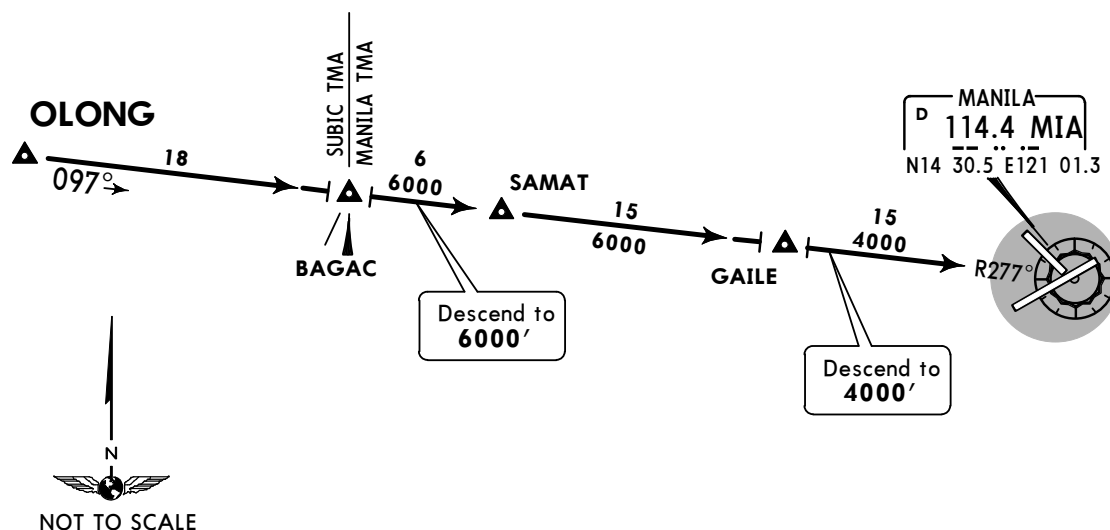


ROUTING

At OLIVA, track in on MIA R-327 and descend to 6000' to MIA via VOTAS.

OLONG 1 ARRIVAL (OLO1)

(RWYS 06, 24)



ROUTING

At BAGAC, track in on MIA R-277 and descend to 6000' to GAILE via SAMAT. At GAILE, descend to 4000'.

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NINYO AQUINO INTL

JEPPESSEN

24 FEB 17

(10-2N)

Eff 2 Mar

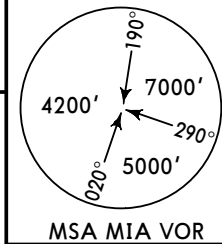
MANILA, PHILIPPINES

STAR

ATIS
126.4

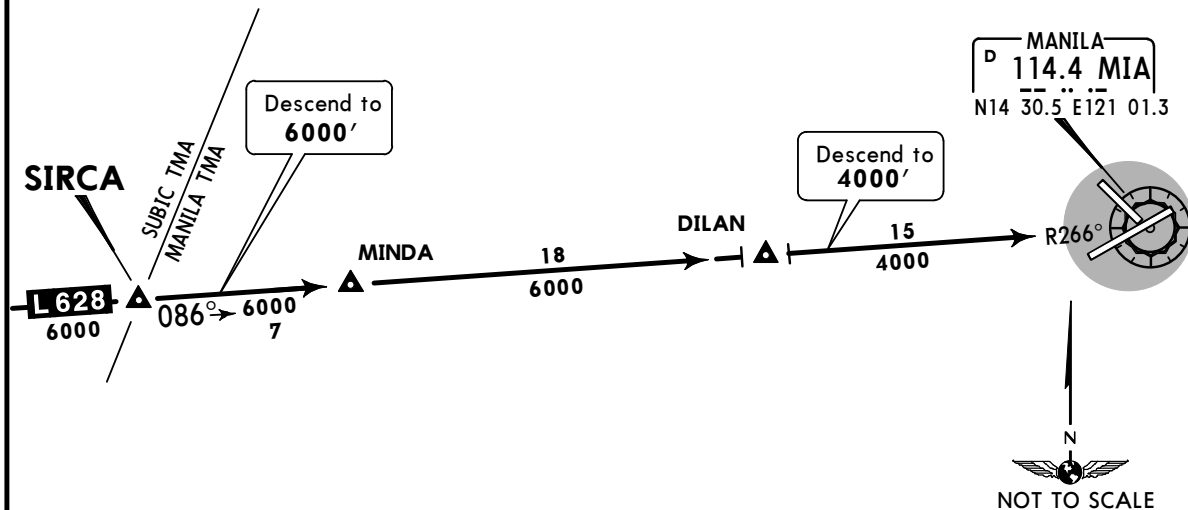
Apt Elev
75'

Alt Set: hPa Trans level: FL130 Trans alt: 11000'



SIRCA 1 ARRIVAL (SIR1)

(RWYS 06, 24)

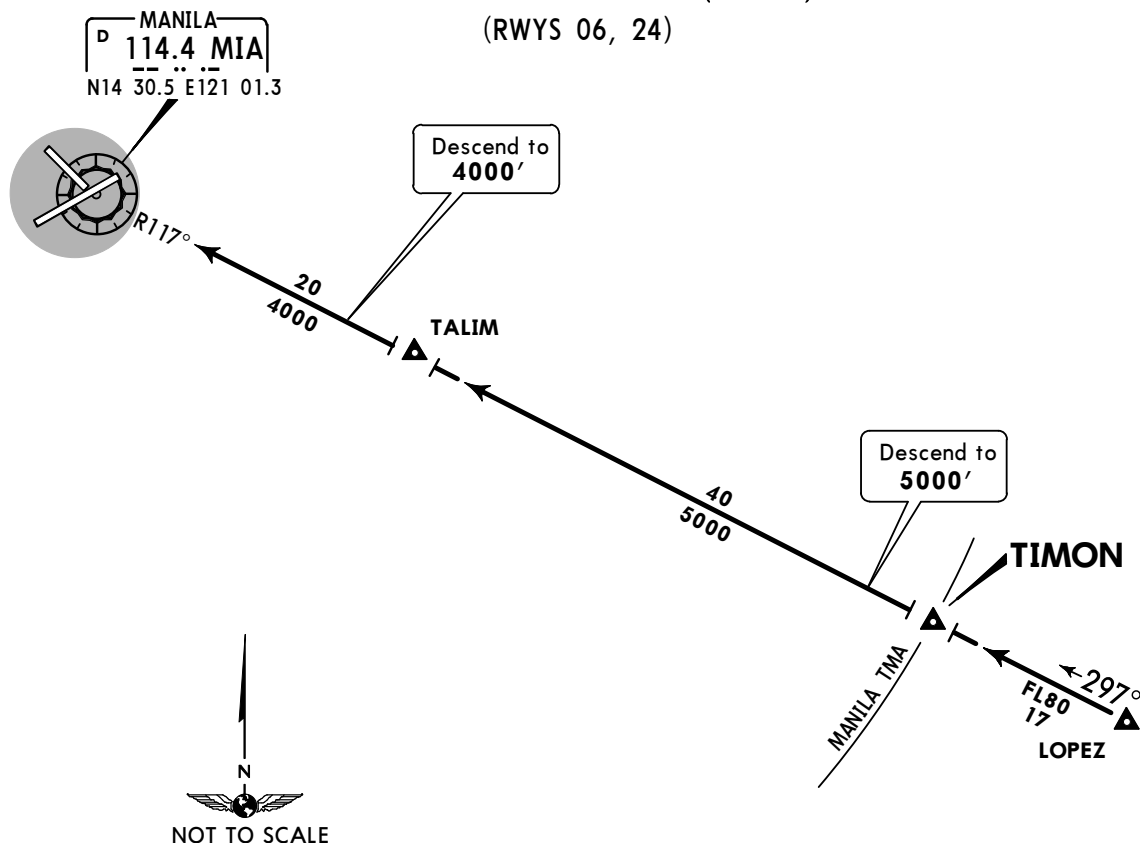


ROUTING

At SIRCA, track in on MIA R-266 and descend to 6000' to DILAN via MINDA. At DILAN, descend to 4000'.

TIMON 1 ARRIVAL (TIM1)

(RWYS 06, 24)



ROUTING

At TIMON, track in on MIA R-117 and descend to 5000'. At TALIM, descend to 4000'.

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NINOY AQUINO INTL

JEPPESEN
24 FEB 17 **10-2P** **Eff 2 Mar**

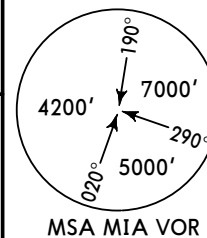
MANILA, PHILIPPINES

STAR

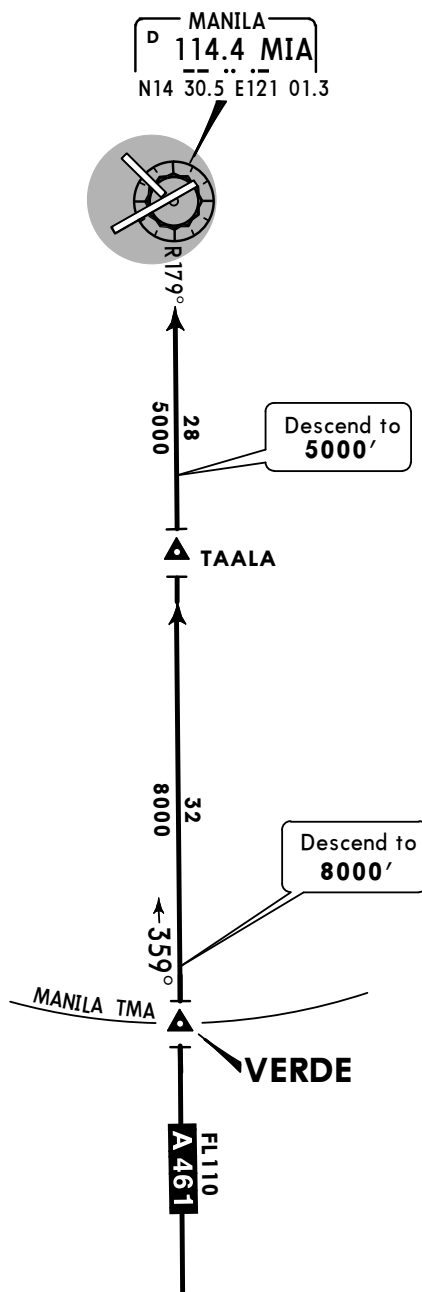
ATIS
126.4

Apt Elev
75'

Alt Set: hPa Trans level: FL130 Trans alt: 11000'



VERDE 1 ARRIVAL (VER1)
(RWYS 06, 24)



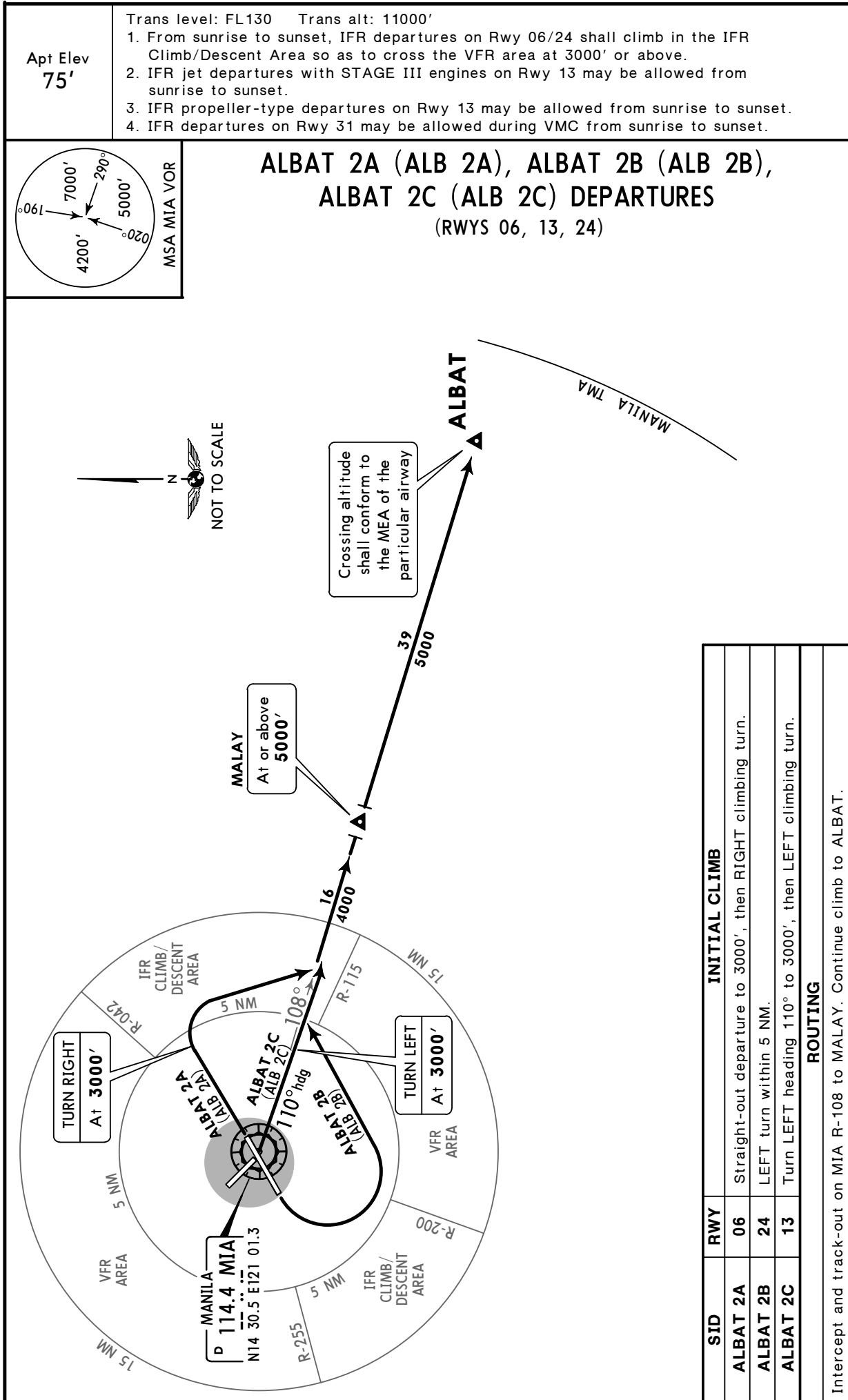
ROUTING

At VERDE, track in on MIA R-179 and descend to 8000'. At TAALA, descend to 5000'.

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NINYO AQUINO INTL

JEPPESSEN
24 FEB 17 **10-3** Eff 2 Mar

MANILA, PHILIPPINES
SID



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NINYO AQUINO INTL

JEPPesen

24 FEB 17

(10-3A)

Eff 2 Mar

MANILA, PHILIPPINES

RNAV SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. GNSS required. 2. RNP 1.

3. DME/DME not authorized. 4. ALPAS 4V and CAB 4V authorized only when RWYS 13/24 are in use.

**ALPAS 2P [ALPA2P], ALPAS 4V [ALPA4V]
CAB 2P [CAB2P], CAB 4V [CAB4V]
RNAV DEPARTURES**

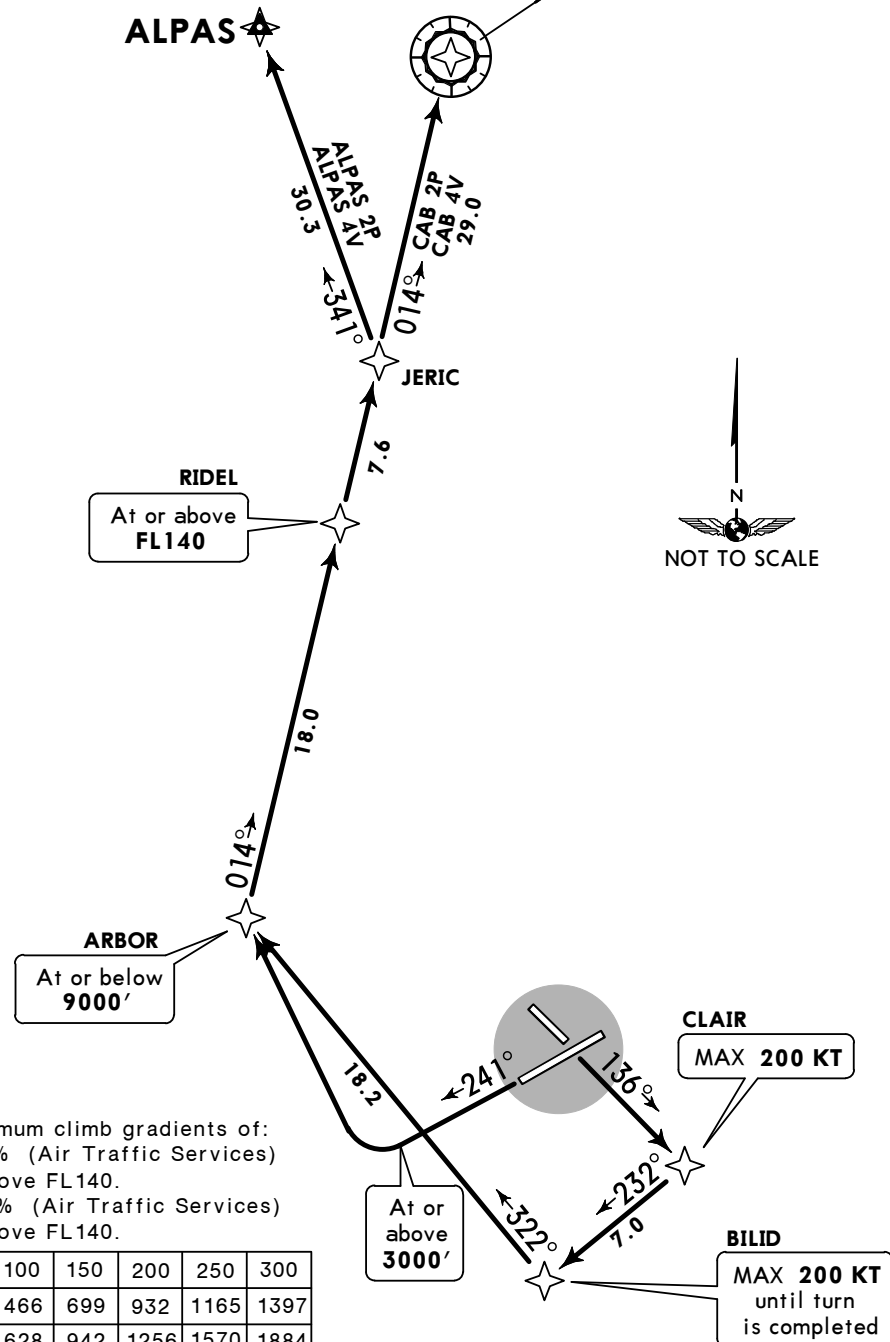
(RWY 13, 24)

RWY 13: CAT A, B & C

CABANATUAN
112.7 CAB
N15 28.9 E121 01.5

6100'

MSA ARP



SID	RWY	INITIAL CLIMB
ALPAS 2P	24	Climb on track 241° to at or above 3000', turn RIGHT direct to ARBOR, then to RIDEL, to JERIC and ALPAS.
ALPAS 4V	13	Climb on track 136° to CLAIR, then to BILID, to ARBOR, to RIDEL, to JERIC and ALPAS.
CAB 2P	24	Climb on track 241° to at or above 3000', turn RIGHT direct to ARBOR, then to RIDEL, to JERIC and CAB.
CAB 4V	13	Climb on track 136° to CLAIR, then to BILID, to ARBOR, to RIDEL, to JERIC and CAB.

RPLL/MNL
NINYO AQUINO INTL

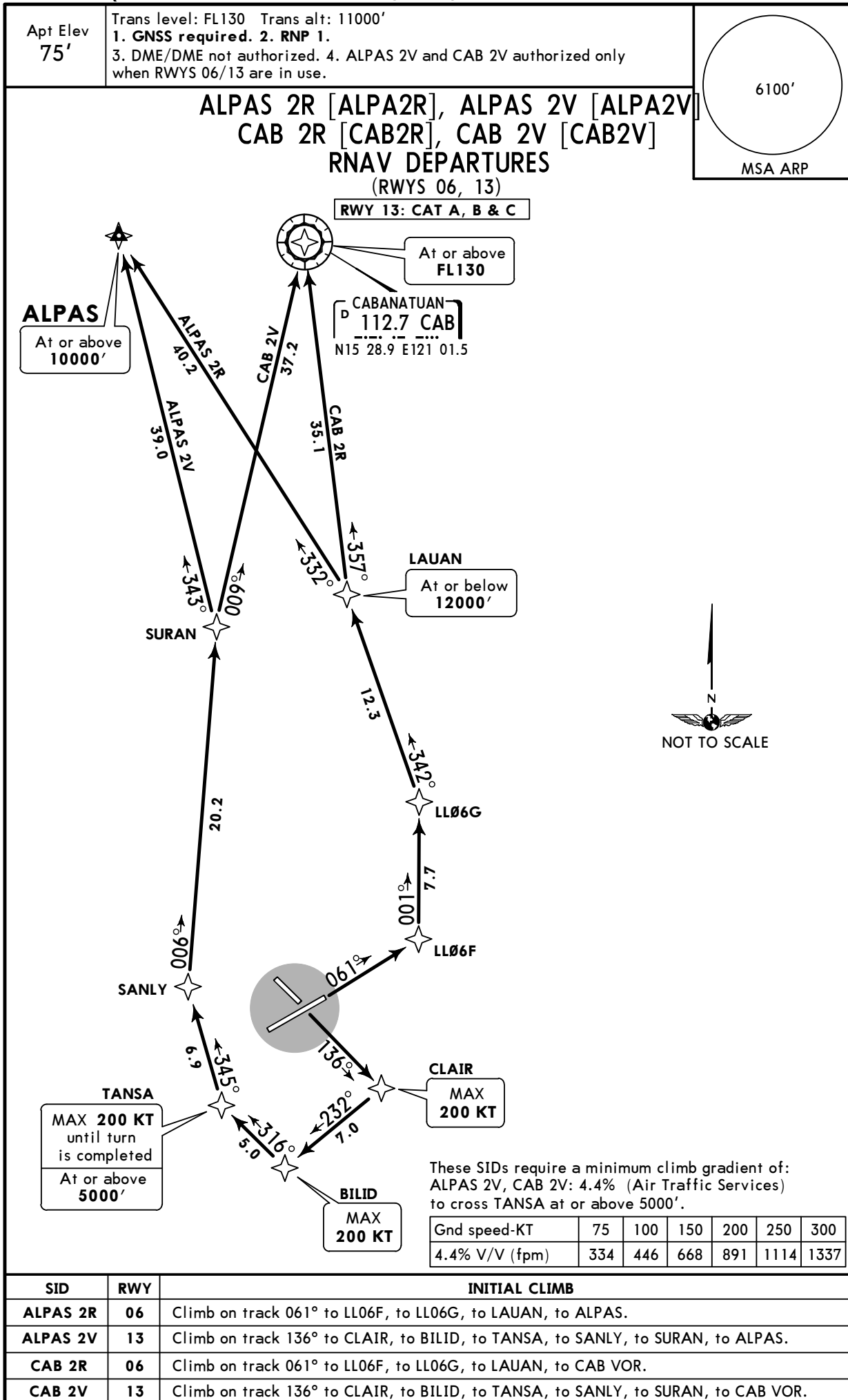
24 FEB 17

10-3A1

Eff 2 Mar

MANILA, PHILIPPINES

RNAV SID



RPLL/MNL
NINYO AQUINO INTL

JEPPESSEN
24 FEB 17 **(10-3A2)** **Eff 2 Mar**

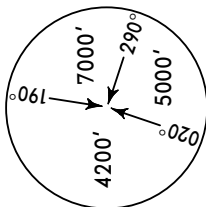
MANILA, PHILIPPINES

SID

Apt Elev
75'

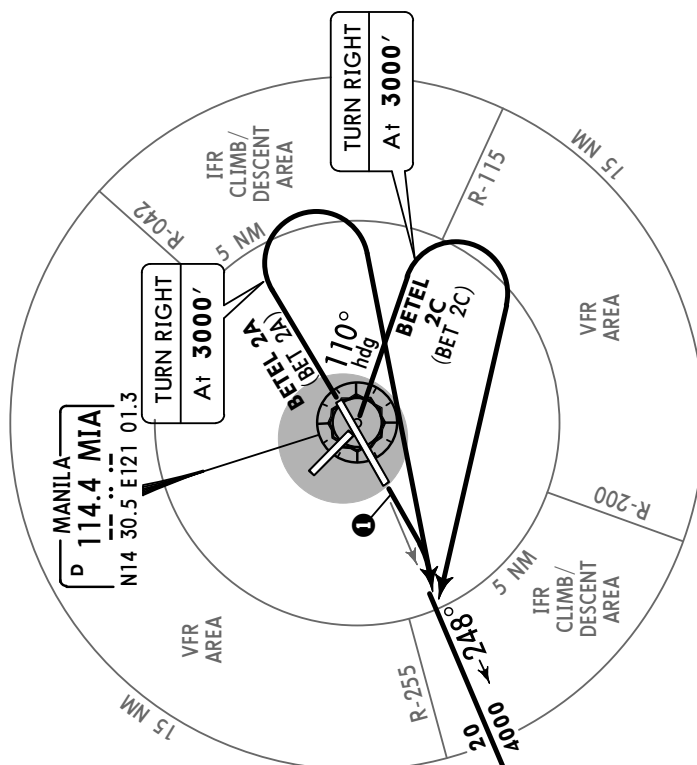
Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.



MSA MIA VOR

**BETEL 2A (BET 2A), BETEL 2B (BET 2B),
BETEL 2C (BET 2C) DEPARTURES**
(RWYS 06, 13, 24)



BETEL 2B (BET 2B)

BORGA

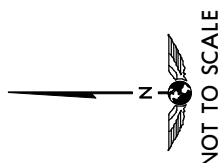
At or above
5000'

KEERO

At or above
6000'

BETEL

MANILA TMA
SUBIC TMA



NOT TO SCALE

INITIAL CLIMB

SID	RWY	
BETEL 2A	06	Straight-out departure to 3000', then RIGHT climbing turn.
BETEL 2B	24	RIGHT turn within 5 NM.
BETEL 2C	13	Turn LEFT heading 110° to 3000', then RIGHT climbing turn.

ROUTING

Intercept and track-out on MIA R-248 to BORGA. Continue climb to BETEL via KEERO.

RPLL/MNL
NINYO AQUINO INTL

24 FEB 17

JEPPESEN

10-3A3

Eff : Mar

MANILA, PHILIPPINES

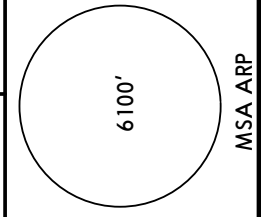
RNA / SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

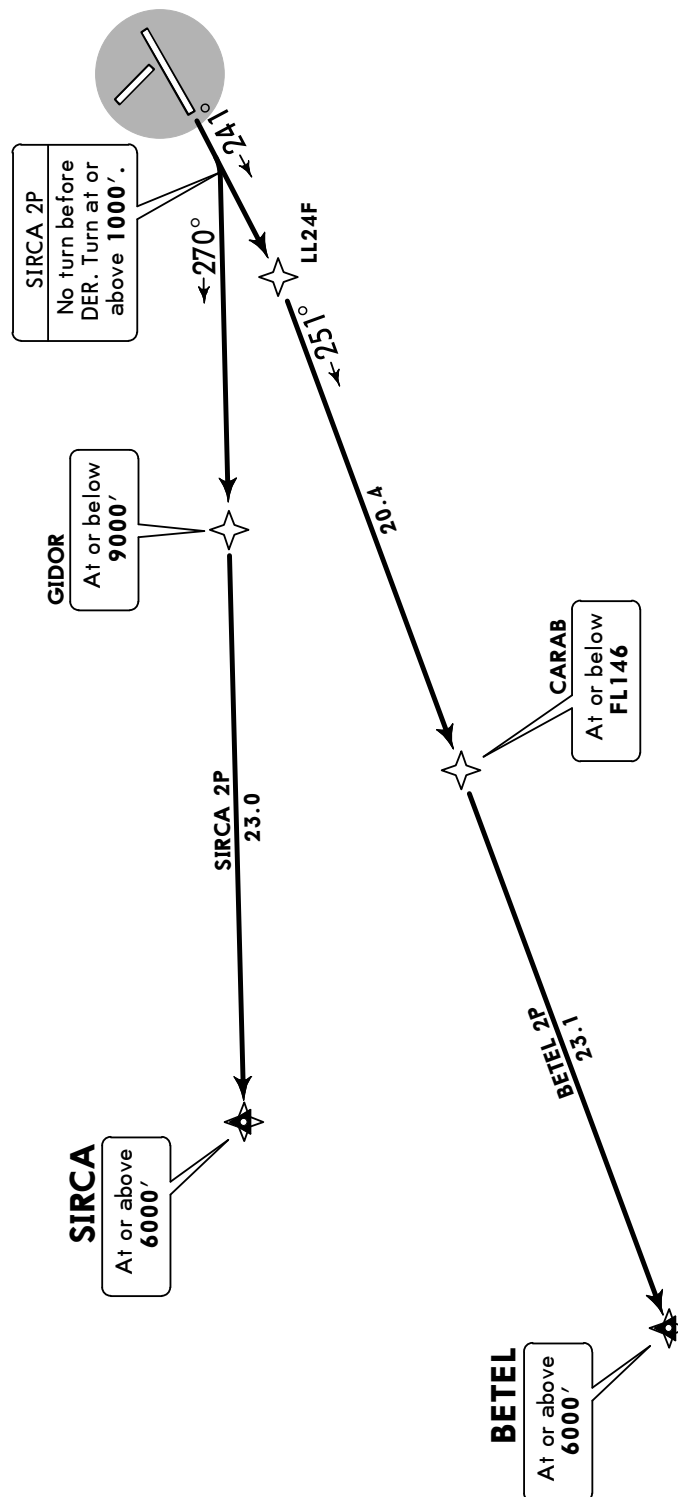
1. GNSS required. 2. RNP 1.

3. DME/DME not authorized.



BETEL 2P [BETE2P], SIRCA 2P [SIRC2P]
RNAV DEPARTURES
(RWY 24)

SID	INITIAL CLIMB
BETEL 2P	Climb on track 241° to LL24F, then to CARAB and BETEL.
SIRCA 2P	Climb on track 241° to at or above 1000' , turn RIGHT direct to GIDOR, then to SIRCA.

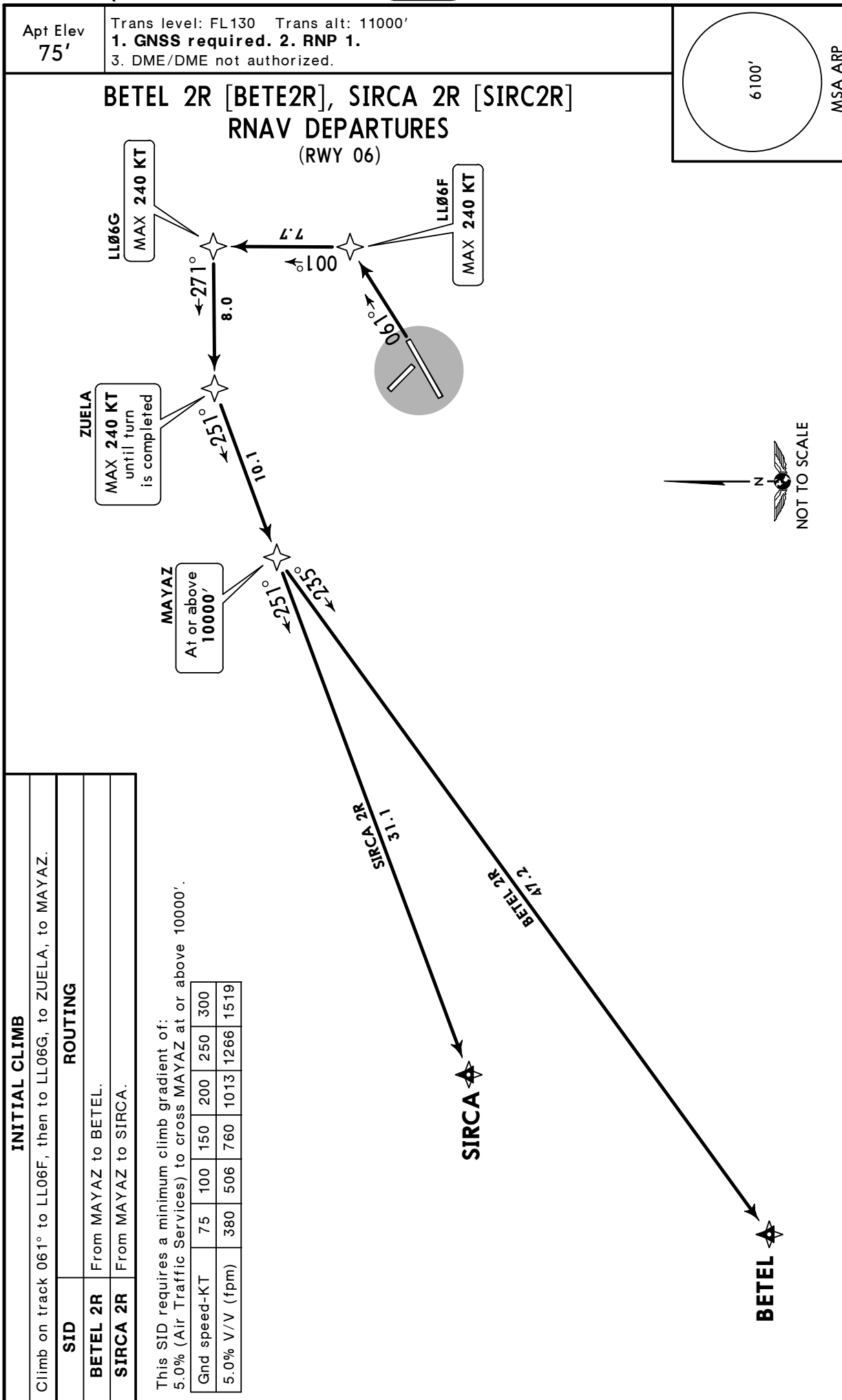


LOST COMMS
LOST COMMS
LOST COMMS
LOST COMMS
LOST
Squawk Mode A code 7600 and follow established procedures.

RPLL/MNL
NINYO AQUINO INTL

JEPPESEN
 24 FEB 17 **(10-3A4)** Eff : Mar

MANILA, PHILIPPINES
RNA / SID



RPLL/MNL
NINYO AQUINO INTL

JEPPESSEN
24 FEB 17 **(10-3B)** **Eff 2 Mar**

MANILA, PHILIPPINES

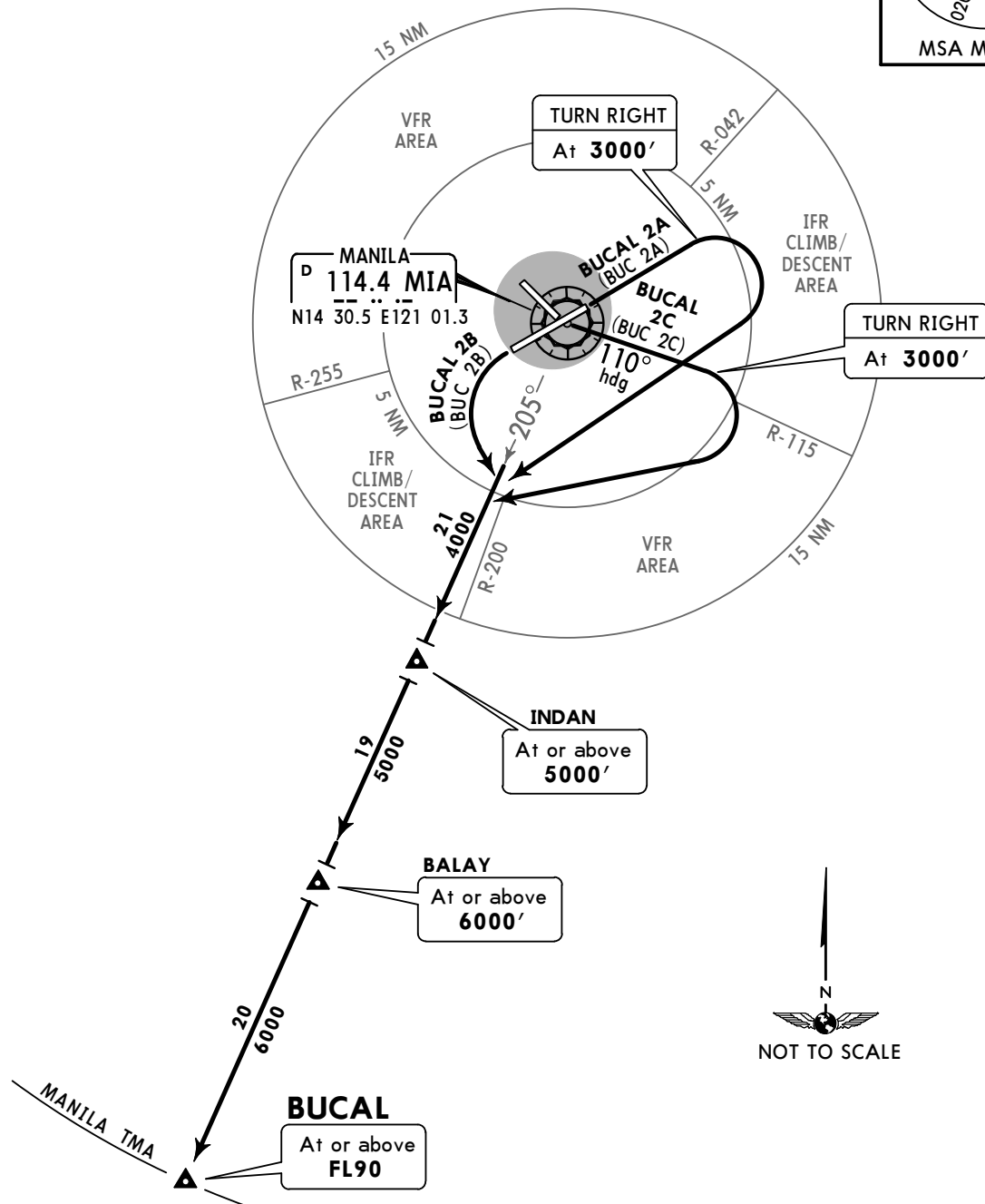
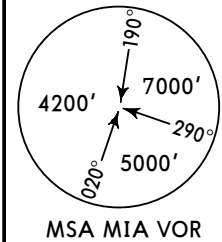
SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.

**BUCAL 2A (BUC 2A), BUCAL 2B (BUC 2B),
BUCAL 2C (BUC 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	RWY	INITIAL CLIMB
BUCAL 2A	06	Straight-out departure to 3000', then RIGHT climbing turn.
BUCAL 2B	24	LEFT turn within 5 NM.
BUCAL 2C	13	Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING		
Intercept and track-out on MIA R-205 to INDAN. Continue climb to BUCAL via BALAY.		

RPLL/MNL
NINOY AQUINO INTL

JEPPESEN

24 FEB 17

(10-3C)

Eff 2 Mar

MANILA, PHILIPPINES

RNA / SID

Apt Elev
75'

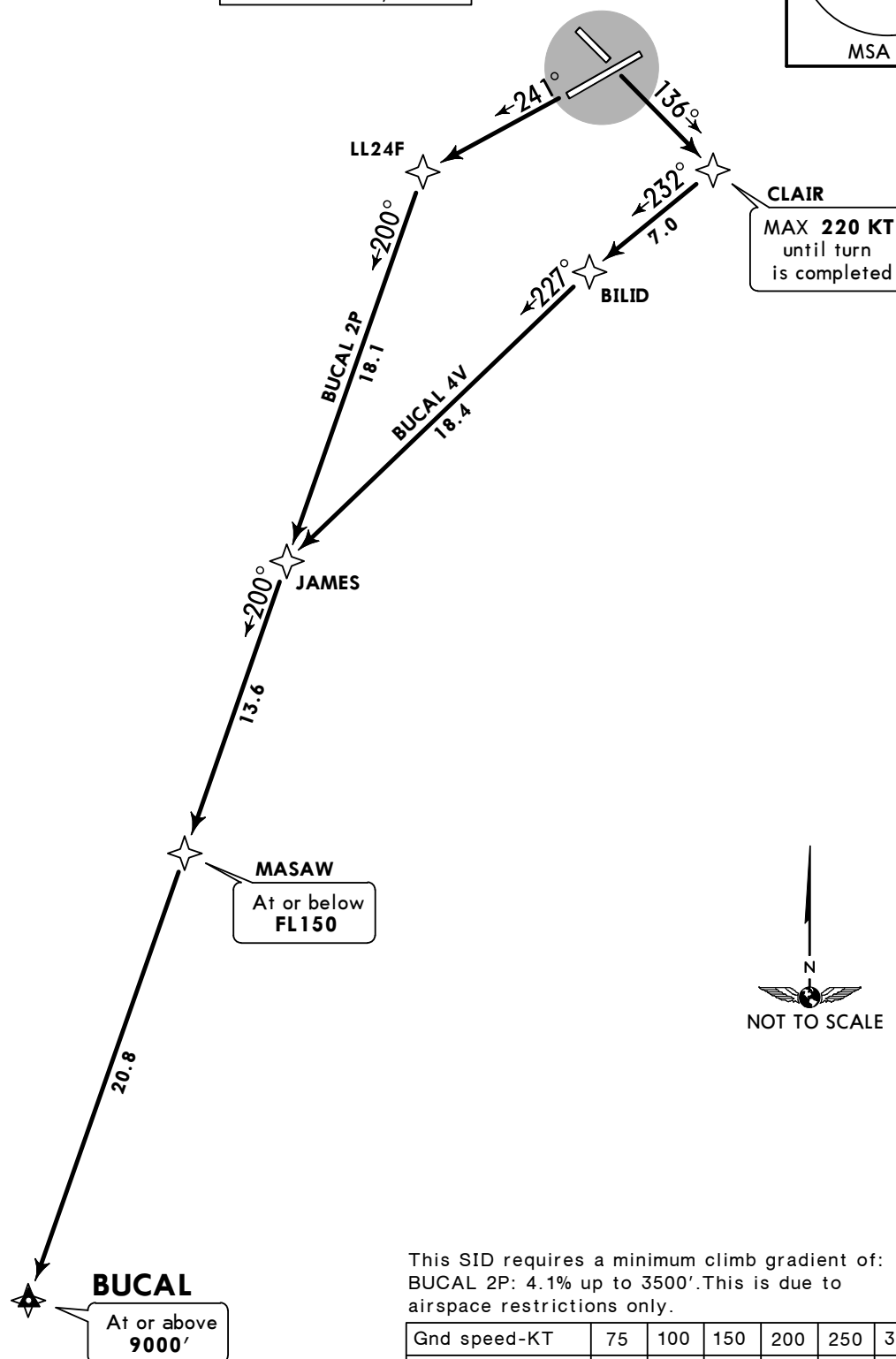
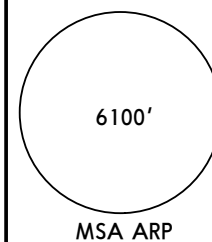
Trans level: FL130 Trans alt: 11000'

1. GNSS required. 2. RNP 1.

3. DME/DME not authorized. 4. BUCAL 4V is authorized only when RWYS 13/24 are in use.

BUCAL 2P [BUCA2P], BUCAL 4V [BUCA4V]
RNAV DEPARTURES
(RWYS 13, 24)

RWY 13: CAT A, B & C



This SID requires a minimum climb gradient of:
BUCAL 2P: 4.1% up to 3500'. This is due to
airspace restrictions only.

Gnd speed-KT	75	100	150	200	250	300
4.1% V/V (fpm)	311	415	623	830	1038	1246

SID	RWY	INITIAL CLIMB
BUCAL 2P	24	Climb on track 241° to LL24F, then to JAMES, to MASAW and to BUCAL.
BUCAL 4V	13	Climb on track 136° to CLAIR, to BILID, to JAMES, to MASAW and to BUCAL.

RPLL/MNL
NINYO AQUINO INTL

24 FEB 17



JEPPESSEN

MANILA, PHILIPPINES

10-3C1

Eff 2 Mar

RNAV SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

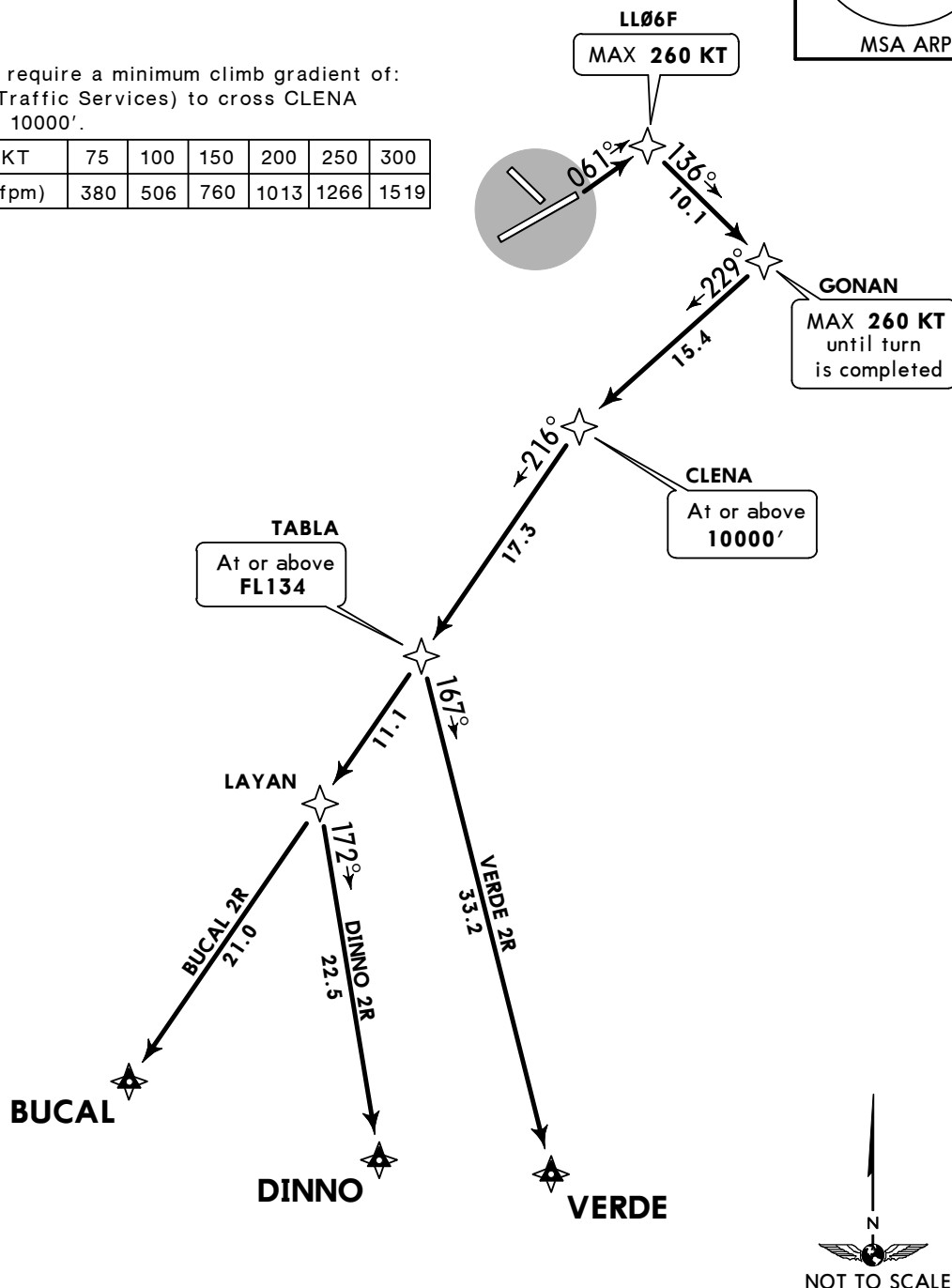
1. GNSS required. 2. RNP 1.

3. DME/DME not authorized.

**BUCAL 2R [BUCA2R], DINNO 2R [DINO2R]
VERDE 2R [VERD2R]
RNAV DEPARTURES
(RWY 06)**

These SIDs require a minimum climb gradient of:
5.0% (Air Traffic Services) to cross CLENA
at or above 10000'.

Gnd speed-KT	75	100	150	200	250	300
5.0% V/V (fpm)	380	506	760	1013	1266	1519



INITIAL CLIMB

Climb on track 061° to LL06F, then to GONAN, to CLENA at or above 10000', to TABLA at or above FL134.

SID	ROUTING
BUCAL 2R	From TABLA to LAYAN, to BUCAL.
DINNO 2R	From TABLA to LAYAN, to DINNO.
VERDE 2R	From TABLA to VERDE.

RPLL/MNL
NINYO AQUINO INTL

24 FEB 17

JEPPesen

10-3C2

Eff 2 Mar

MANILA, PHILIPPINES

RNA / SID

Apt Elev
75'

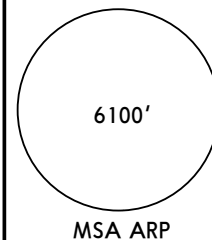
Trans level: FL130 Trans alt: 11000'

1. GNSS required. 2. RNP1.

3. DME/DME not authorized. 4. These procedures shall only be used when Rws 13/24 are in use.

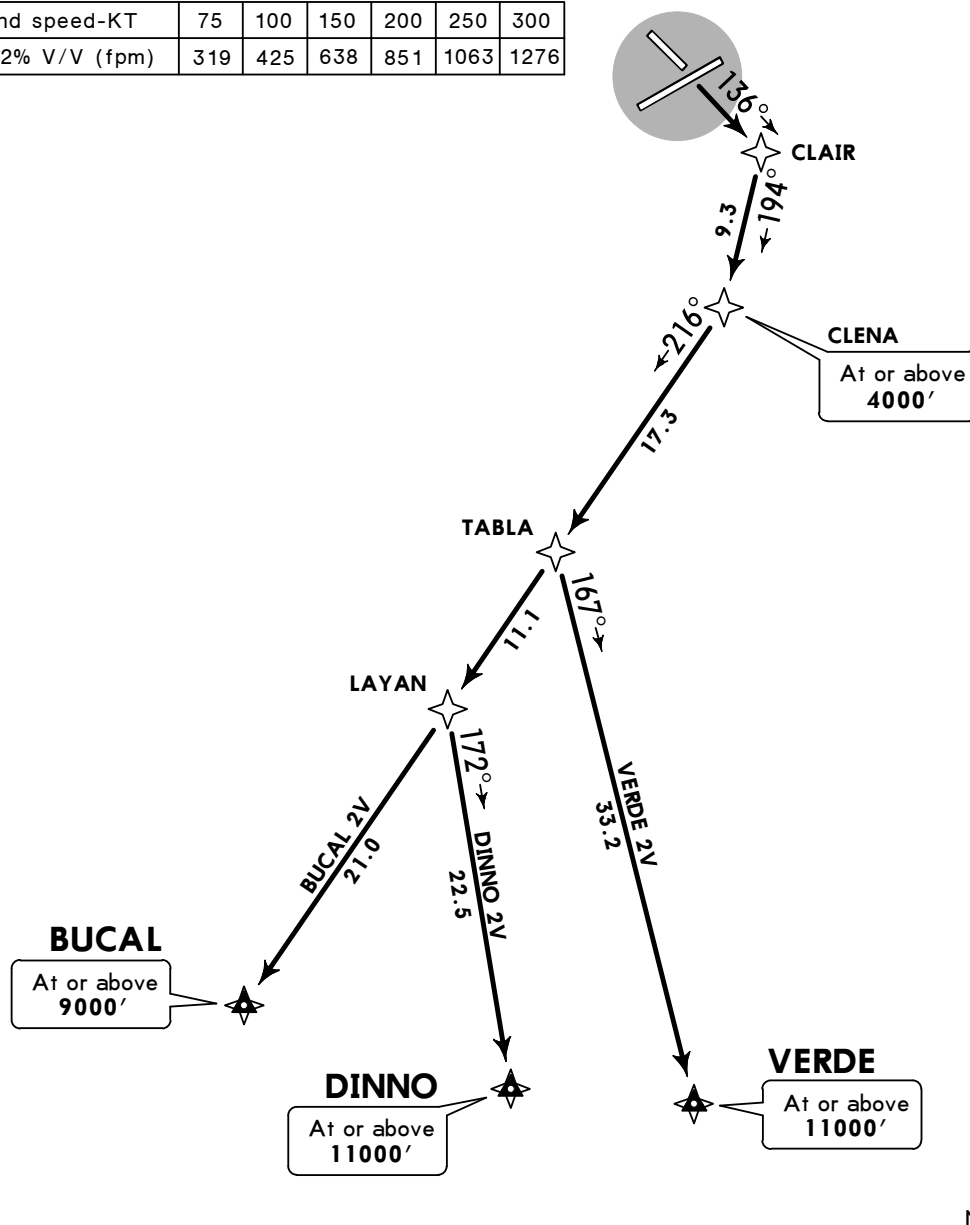
**BUCAL 2V [BUCA2V], DINNO 2V [DINO2V]
VERDE 2V [VERD2V]
RNAV DEPARTURES
(RWY 13)**

CAT A, B & C



These SIDs require a minimum climb gradient of 4.2% to cross CLENA at or above 4000'. This is due to airspace restrictions only.

Gnd speed-KT	75	100	150	200	250	300
4.2% V/V (fpm)	319	425	638	851	1063	1276



INITIAL CLIMB

Climb on track 136° to CLAIR, then to CLENA at or above 4000', to TABLA.

SID	ROUTING
BUCAL 2V	From TABLA, to LAYAN, to BUCAL at or above 9000'.
DINNO 2V	From TABLA, to LAYAN, to DINNO at or above 11000'.
VERDE 2V	From TABLA, to VERDE at or above 11000'.

RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 FEB 17 **10-3D** Eff 2 Mar

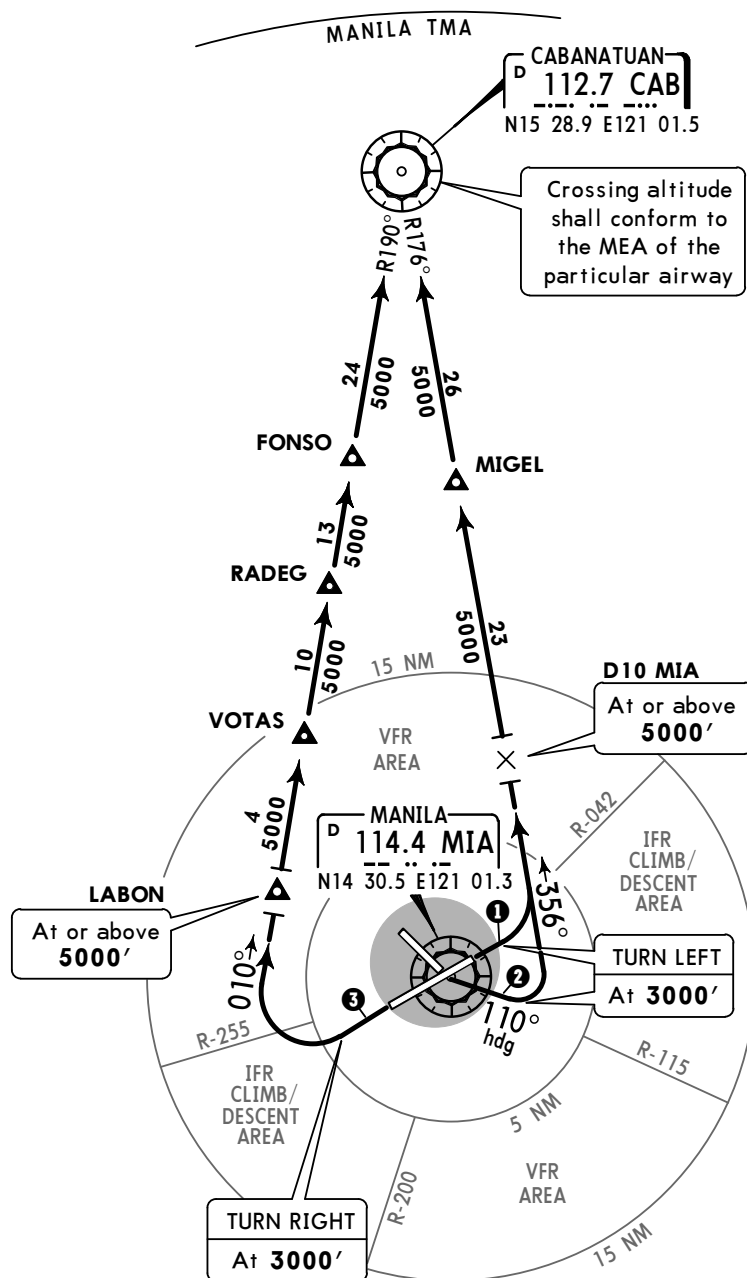
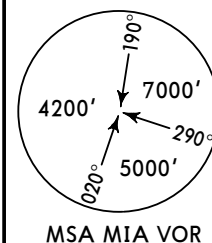
MANILA, PHILIPPINES

SID

Apt Elev
75'

- Trans level: FL130 Trans alt: 11000'
1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
 2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
 3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
 4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.

**CABANATUAN 1A (CAB 1A),
CABANATUAN 1B (CAB 1B),
CABANATUAN 1C (CAB 1C) DEPARTURES**
(RWYS 06, 13, 24)



1
CABANATUAN 1A
(CAB 1A)

2
CABANATUAN 1C
(CAB 1C)

3
CABANATUAN 1B
(CAB 1B)

SID	RWY	INITIAL CLIMB
CABANATUAN 1A	06	Straight-out departure to 3000', then LEFT climbing turn. Intercept and track-in on CAB R-176 to D10 MIA. Continue climb to CAB via MIGEL.
CABANATUAN 1B	24	Straight-out departure to 3000', then RIGHT climbing turn. Intercept and track-in on CAB R-190 to LABON. Continue climb to CAB via VOTAS, RADEG and FONSO.
CABANATUAN 1C	13	Turn LEFT heading 110° to 3000', then LEFT climbing turn. Intercept and track-in on CAB R-176 to D10 MIA. Continue climb to CAB via MIGEL.

RPLL/MNL
NINYO AQUINO INTL

JEPPESEN

24 FEB 17

(10-3E)

Eff 2 Mar

MANILA, PHILIPPINES

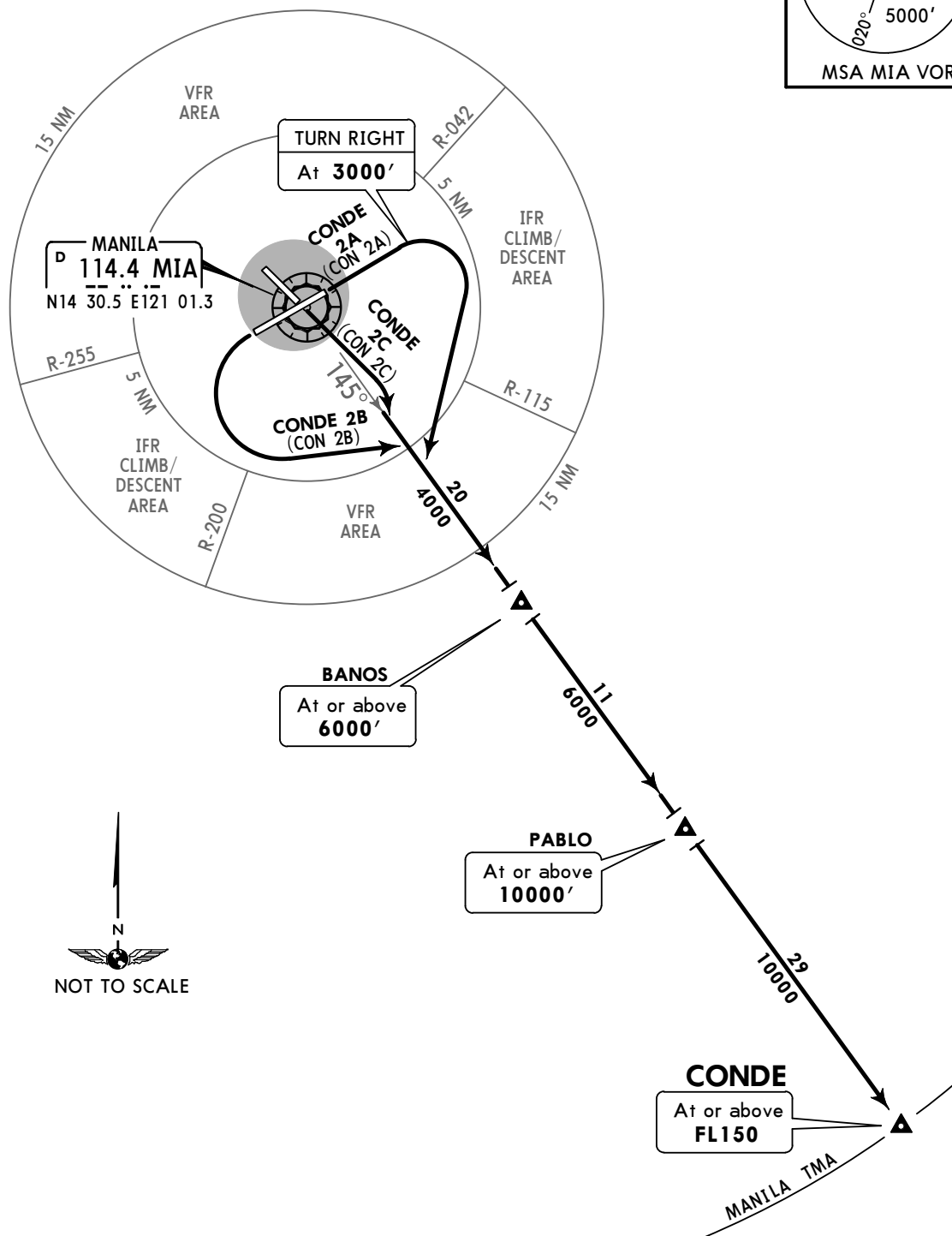
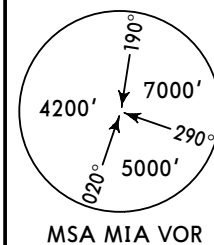
SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.

**CONDE 2A (CON 2A), CONDE 2B (CON 2B),
CONDE 2C (CON 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	RWY	INITIAL CLIMB
CONDE 2A	06	Straight-out departure to 3000', then RIGHT climbing turn.
CONDE 2B	24	LEFT turn within 5 NM.
CONDE 2C	13	RIGHT turn within 5 NM.
ROUTING		
Intercept and track-out on MIA R-145 to BANOS. Continue climb to CONDE via PABLO.		

RPLL/MNL
NINYO AQUINO INTL

24 FEB 17

(10-3E1)

Eff 2 Mar

MANILA, PHILIPPINES

RNAV SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

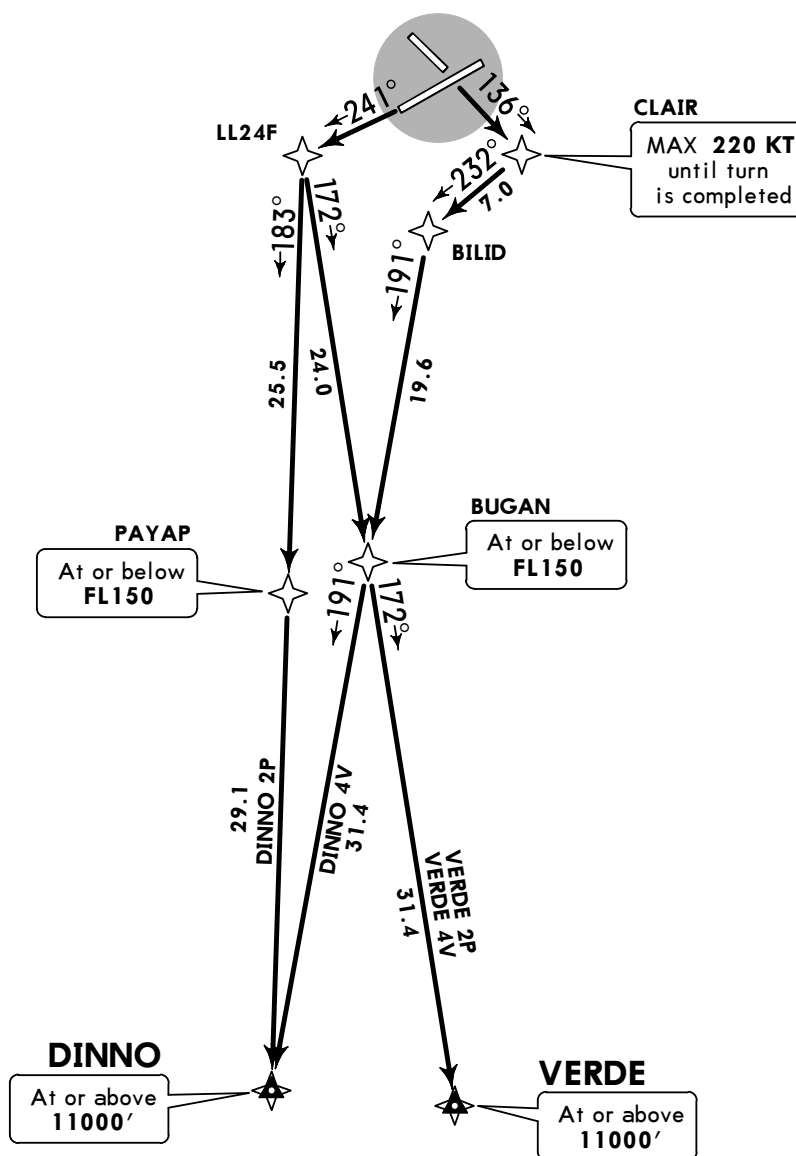
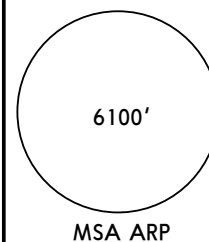
1. GNSS required. 2. RNP 1.

3. DME/DME not authorized. 4. DINNO 4V and VERDE 4V authorized only when RWYS 13/24 are in use.

**DINNO 2P [DINO2P], DINNO 4V [DINO4V]
VERDE 2P [VERD2P], VERDE 4V [VERD4V]
RNAV DEPARTURES**

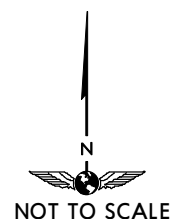
(RWYS 13, 24)

RWY 13: CAT A, B & C



These SIDs require a minimum climb gradient of:
DINNO 2P, VERDE 2P: 3.9% up to 3500'. This is
due to airspace restrictions only.

Gnd speed-KT	75	100	150	200	250	300
3.9% V/V (fpm)	296	395	592	790	987	1185



SID	RWY	INITIAL CLIMB
DINNO 2P	24	Climb on track 241° to LL24F, then to PAYAP and to DINNO.
DINNO 4V	13	Climb on track 136° to CLAIR, then to BILID, to BUGAN and to DINNO.
VERDE 2P	24	Climb on track 241° to LL24F, then to BUGAN and to VERDE.
VERDE 4V	13	Climb on track 136° to CLAIR, then to BILID, to BUGAN and to VERDE.

RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 FEB 17 **(10-3E2)** Eff 2 Mar

MANILA, PHILIPPINES

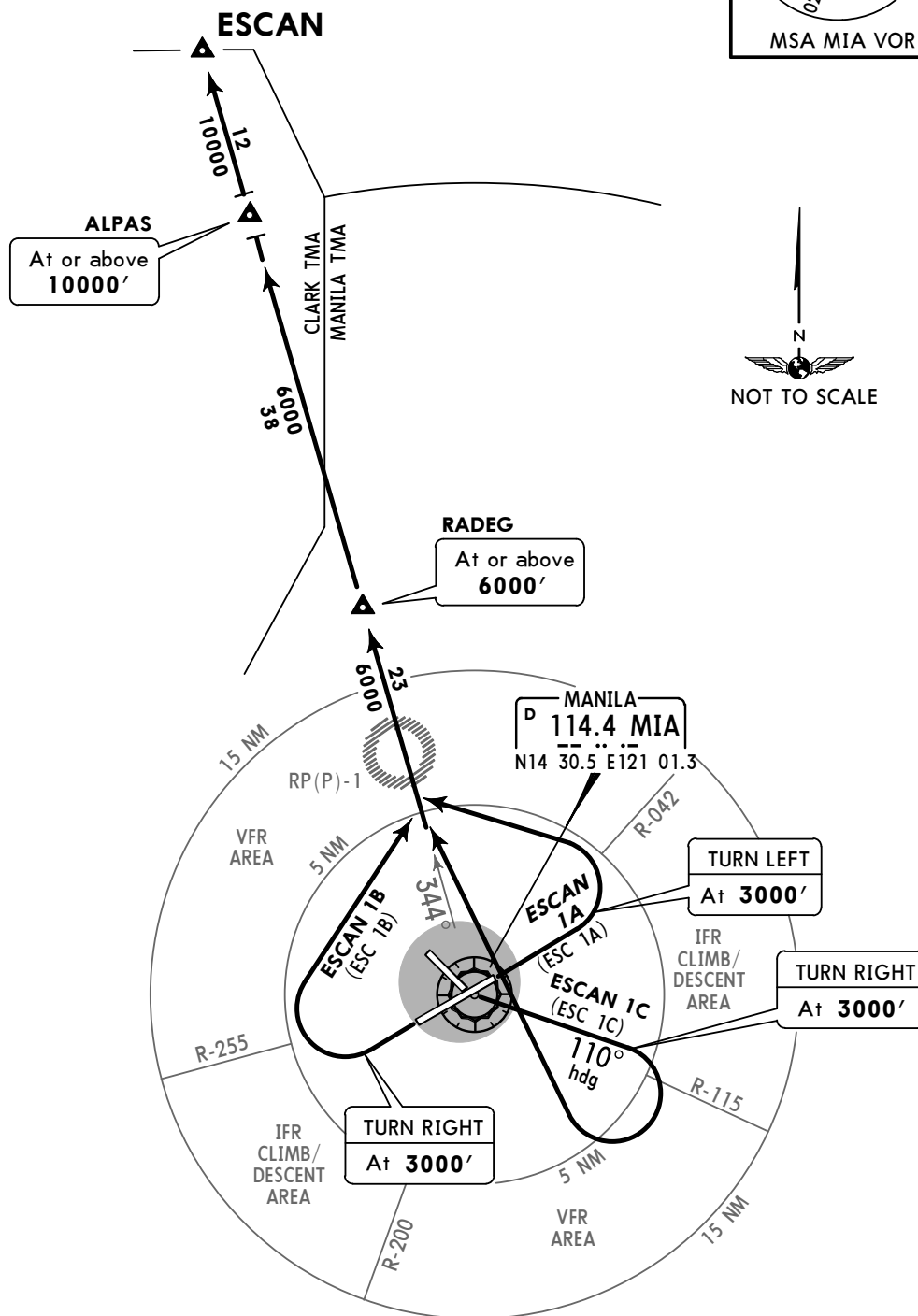
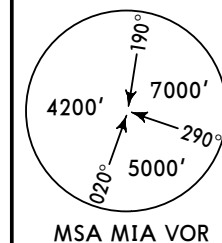
SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.

**ESCAN 1A (ESC 1A), ESCAN 1B (ESC 1B),
ESCAN 1C (ESC 1C) DEPARTURES**
(RWYS 06, 13, 24)



SID	RWY	INITIAL CLIMB
E SCAN 1A	06	Straight-out departure to 3000', then LEFT climbing turn avoiding RP(P)-1.
E SCAN 1B	24	Straight-out departure to 3000', then RIGHT climbing turn.
E SCAN 1C	13	Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING		
Intercept and track-out on MIA R-344 to RADEG. Continue climb to ESCAN via ALPAS.		

RPLL/MNL
NINYO AQUINO INTL

24 FEB 17

JEPPESEN

10-3E3

Eff : Mar

MANILA, PHILIPPINES

RNA / SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'
1. GNSS required. 2. RADAR required. 3. RNP 1.
4. DME/DME not authorized.

6100'

MSA ARP

HARBO 1 DEPARTURE

[HARBO1]

(RWY 31)

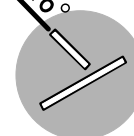
CAT A, B & C

HARBO

At or above
1900'



316°



This SID requires a minimum climb gradient of
7.4% up to 500'.

Gnd speed-KT	75	100	150	200	250	300
7.4% V/V (fpm)	562	749	1124	1499	1873	2248



INITIAL CLIMB

Climb on track 316° to HARBO at or above 1900'. Contact ATC for further instructions.

RPLL/MNL
NINOY AQUINO INTL

JEPPESEN
24 FEB 17 **10-3E4** **Eff 2 Mar**

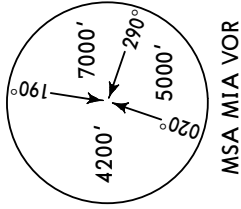
MANILA, PHILIPPINES

SID

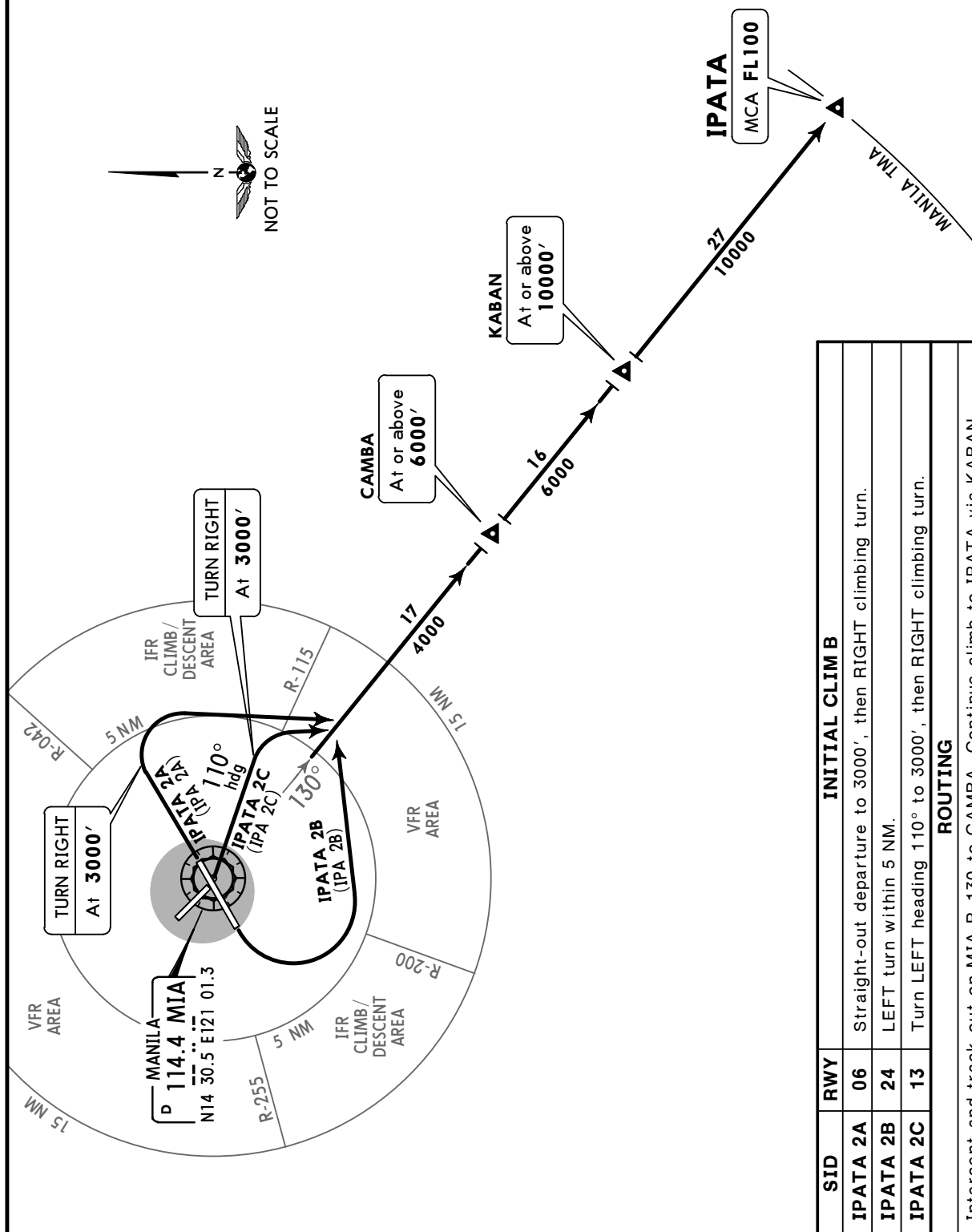
Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.



**IPATA 2A (IPA 2A), IPATA 2B (IPA 2B),
IPATA 2C (IPA 2C) DEPARTURES**
(RWYS 06, 13, 24)



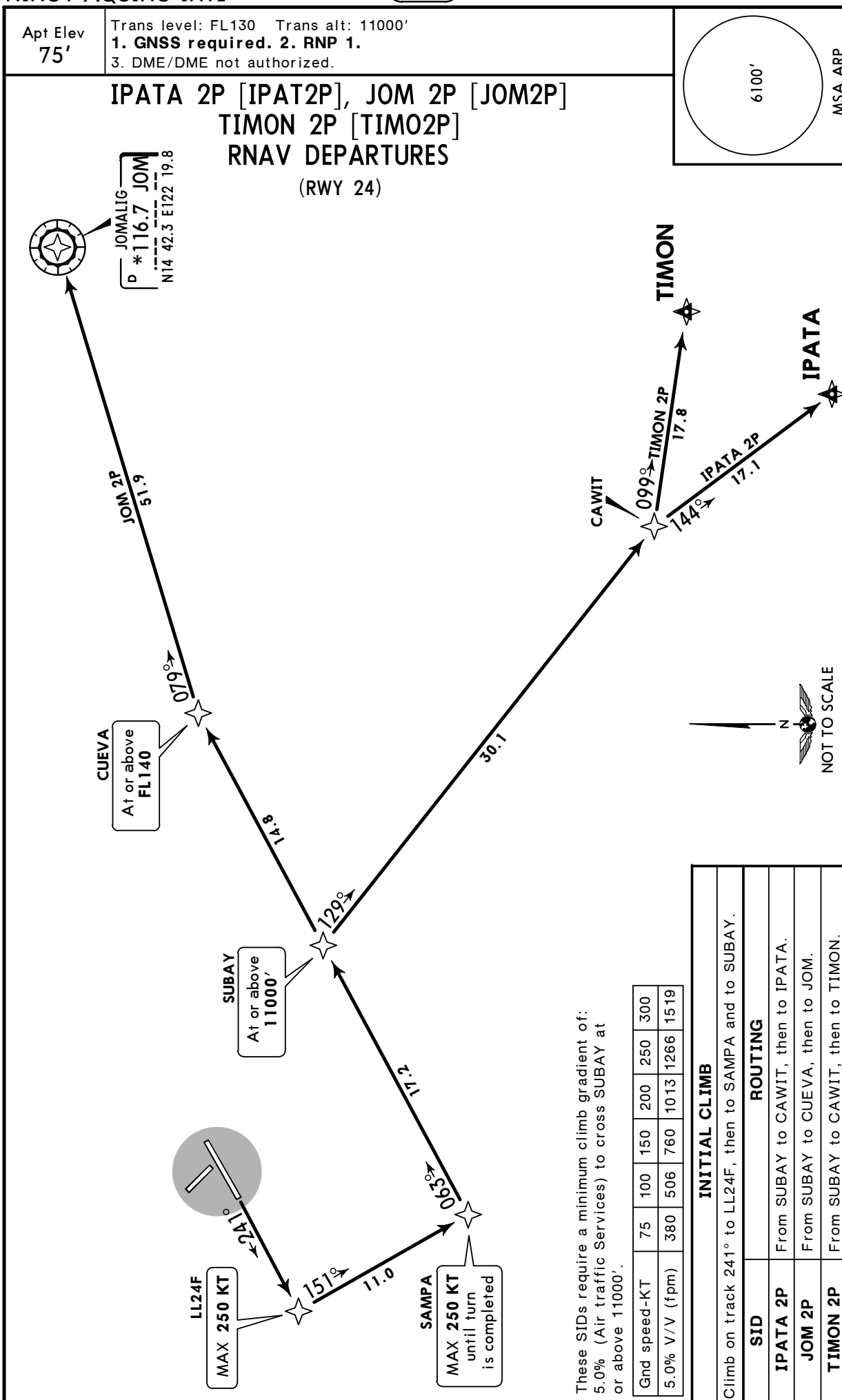
SID	RWY	INITIAL CLIMB
IPATA 2A	06	Straight-out departure to 3000', then RIGHT climbing turn.
IPATA 2B	24	LEFT turn within 5 NM.
IPATA 2C	13	Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING		
Intercept and track-out on MIA R-130 to CAMBA. Continue climb to IPATA via KABAN.		

RPLL/MNL
NINYO AQUINO INTL

JEPPESSEN
24 FEB 17 **10-3F** **Eff : Mar**

MANILA, PHILIPPINES

RNA / SID

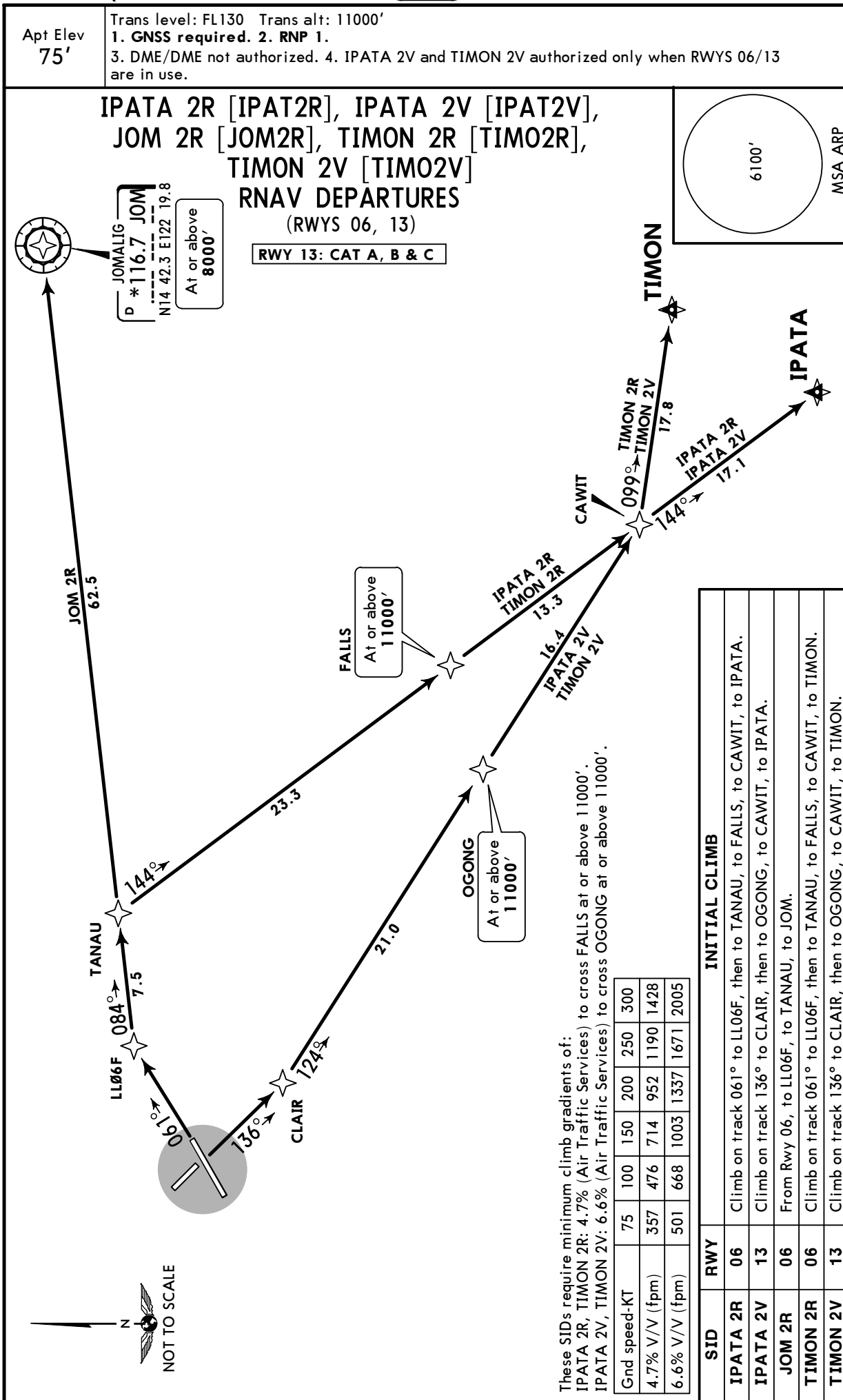


RPLL/MNL
NINYO AQUINO INTL

24 FEB 17 10-3G Eff : Mar

MANILA, PHILIPPINES

RNA / SID



RPLL/MNL
NINYO AQUINO INTL

24 FEB 17

10-3G1

Eff : Mar

MANILA, PHILIPPINES

RNA / SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. RNP 1 required. 2. GNSS required.

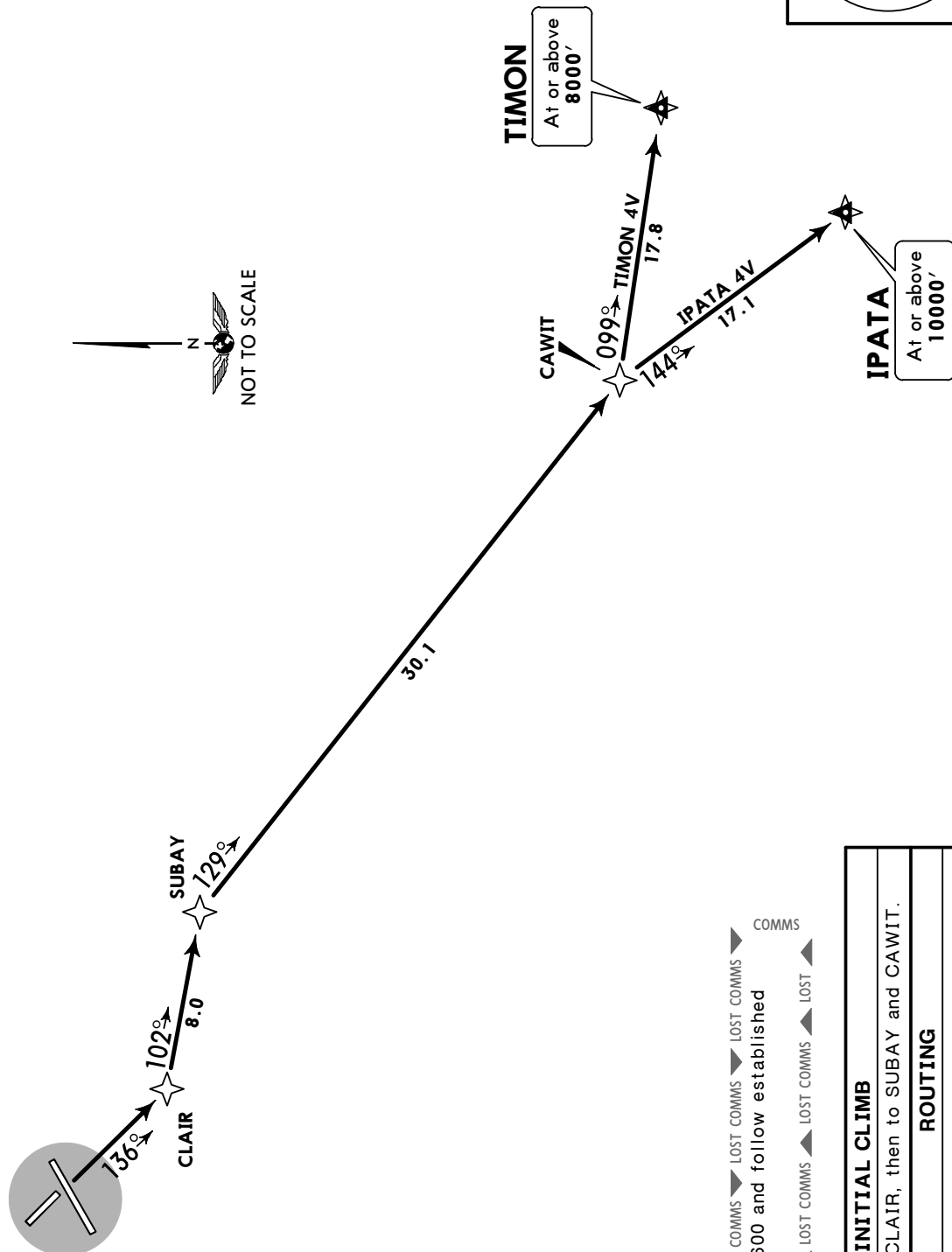
3. DME/DME not authorized. 4. This procedure is authorized only when RWYS 13/24 are in use.

IPATA 4V [IPAT4V], TIMON 4V [TIMO4V]
RNAV DEPARTURES
(RWY 13)

CAT A, B & C

6100'

MSA ARP



INITIAL CLIMB	
Climb on track 136° to CLAIR, then to SUBAY and CAWIT.	
SID	ROUTING
IPATA 4V	From CAWIT to IPATA.
TIMON 4V	From CAWIT to TIMON.

RPLL/MNL
NINYO AQUINO INTL

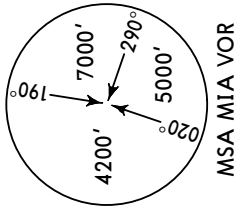
JEPPESEN
24 FEB 17 **(10-3G2)** **Eff 2 Mar**

MANILA, PHILIPPINES

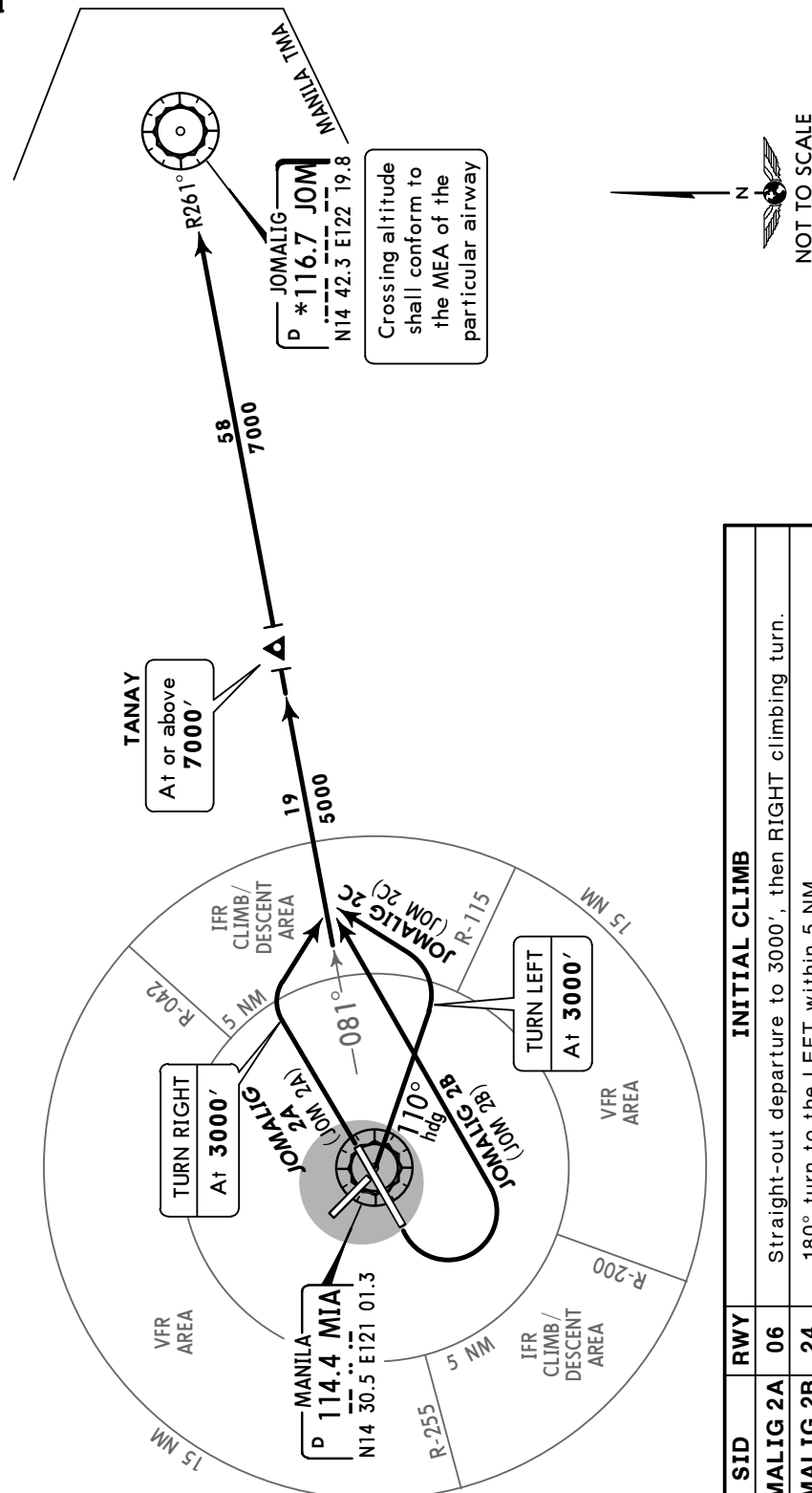
SID

Apt Elev
75'

- Trans level: FL130 Trans alt: 11000'
1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
 2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
 3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
 4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.



**JOMALIG 2A (JOM 2A), JOMALIG 2B (JOM 2B),
JOMALIG 2C (JOM 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	RWY	INITIAL CLIMB
JOMALIG 2A	06	Straight-out departure to 3000', then RIGHT climbing turn.
JOMALIG 2B	24	180° turn to the LEFT within 5 NM.
JOMALIG 2C	13	Turn LEFT heading 110° to 3000', then LEFT climbing turn.
ROUTING		
Intercept and track-out on MIA R-081 to TANAY. Continue climb to JOM.		

RPLL/MNL
NINYO AQUINO INTL

JEPPESSEN
24 OCT 14 **(10-3H)**

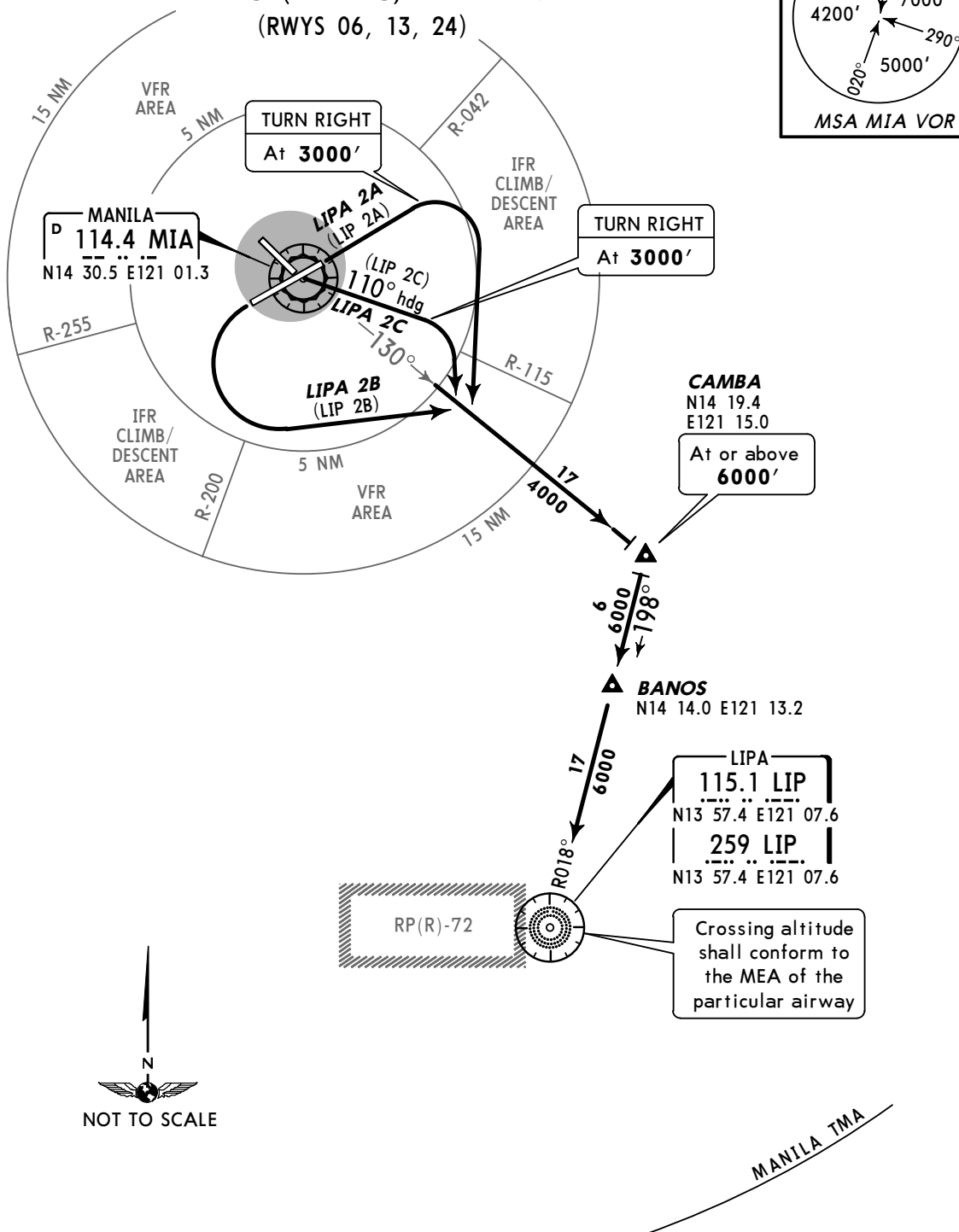
MANILA, PHILIPPINES
SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.

**LIPA 2A (LIP 2A), LIPA 2B (LIP 2B),
LIPA 2C (LIP 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	INITIAL CLIMB
LIPA 2A	Rwy 06: Straight-out departure to 3000', then RIGHT climbing turn.
LIPA 2B	Rwy 24: LEFT turn within 5 NM.
LIPA 2C	Rwy 13: Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING	
Intercept and track-out on MIA R-130 to CAMBA. At CAMBA, turn RIGHT to intercept and track-in on LIP R-018. Continue climb to LIP via BANOS. Crossing restriction at LIP may be increased by ATC subject to RP(R)-72 activities.	

RPLL/MNL
NINYO AQUINO INTL

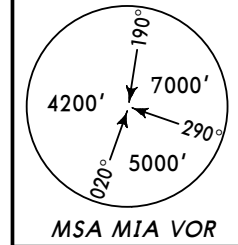
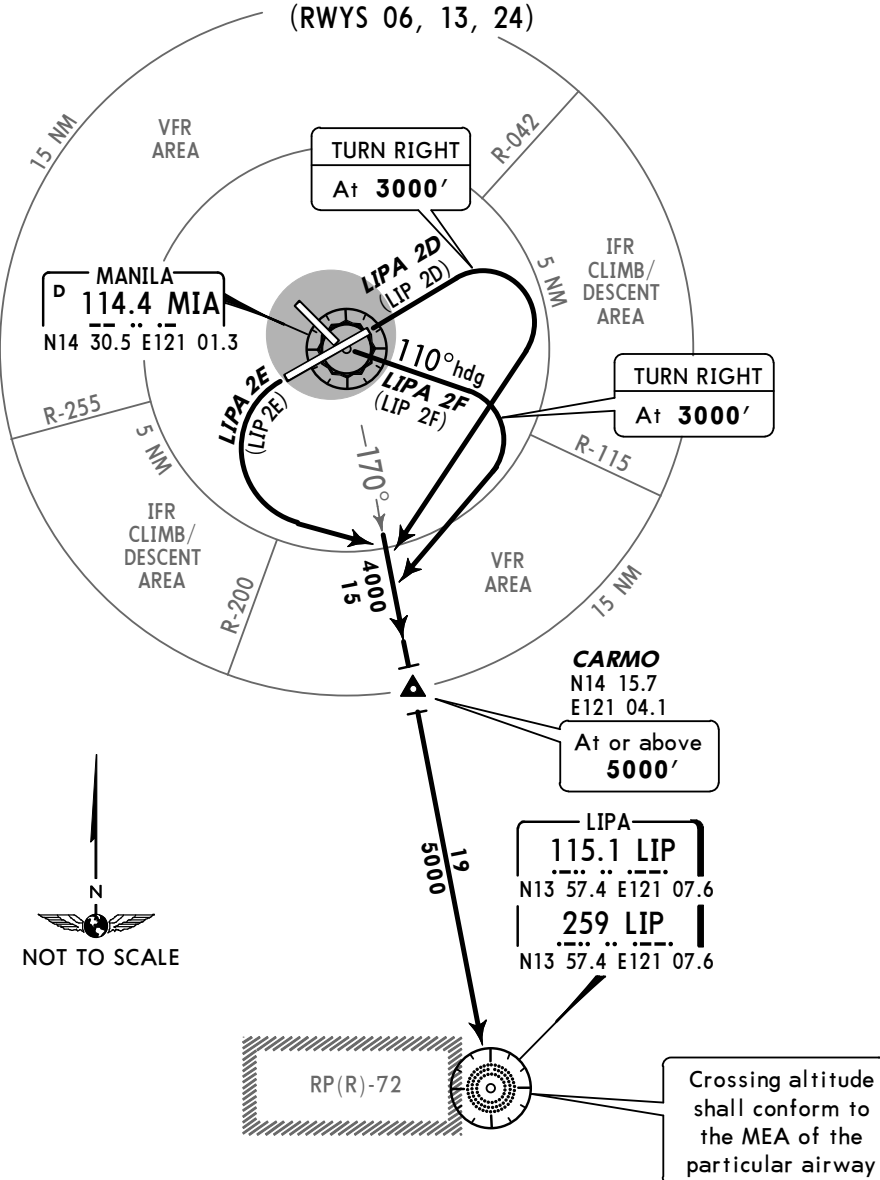
JEPPesen
24 OCT 14 **(10-3J)**

MANILA, PHILIPPINES
SID

Apt Elev
75'

- Trans level: FL130 Trans alt: 11000'
1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
 2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
 3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
 4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.

**LIPA 2D (LIP 2D), LIPA 2E (LIP 2E),
LIPA 2F (LIP 2F) DEPARTURES**
(RWYS 06, 13, 24)



SID	INITIAL CLIMB
LIPA 2D	Rwy 06: Straight-out departure to 3000', then RIGHT climbing turn.
LIPA 2E	Rwy 24: LEFT turn within 5 NM.
LIPA 2F	Rwy 13: Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING	
Intercept and track-out on MIA R-170 to CARMO. Continue climb to LIP. Crossing restriction at LIP may be increased by ATC subject to RP(R)-72 activities.	

RPLL/MNL
NINYO AQUINO INTLJEPPESEN
24 OCT 14 (10-3K)

MANILA, PHILIPPINES

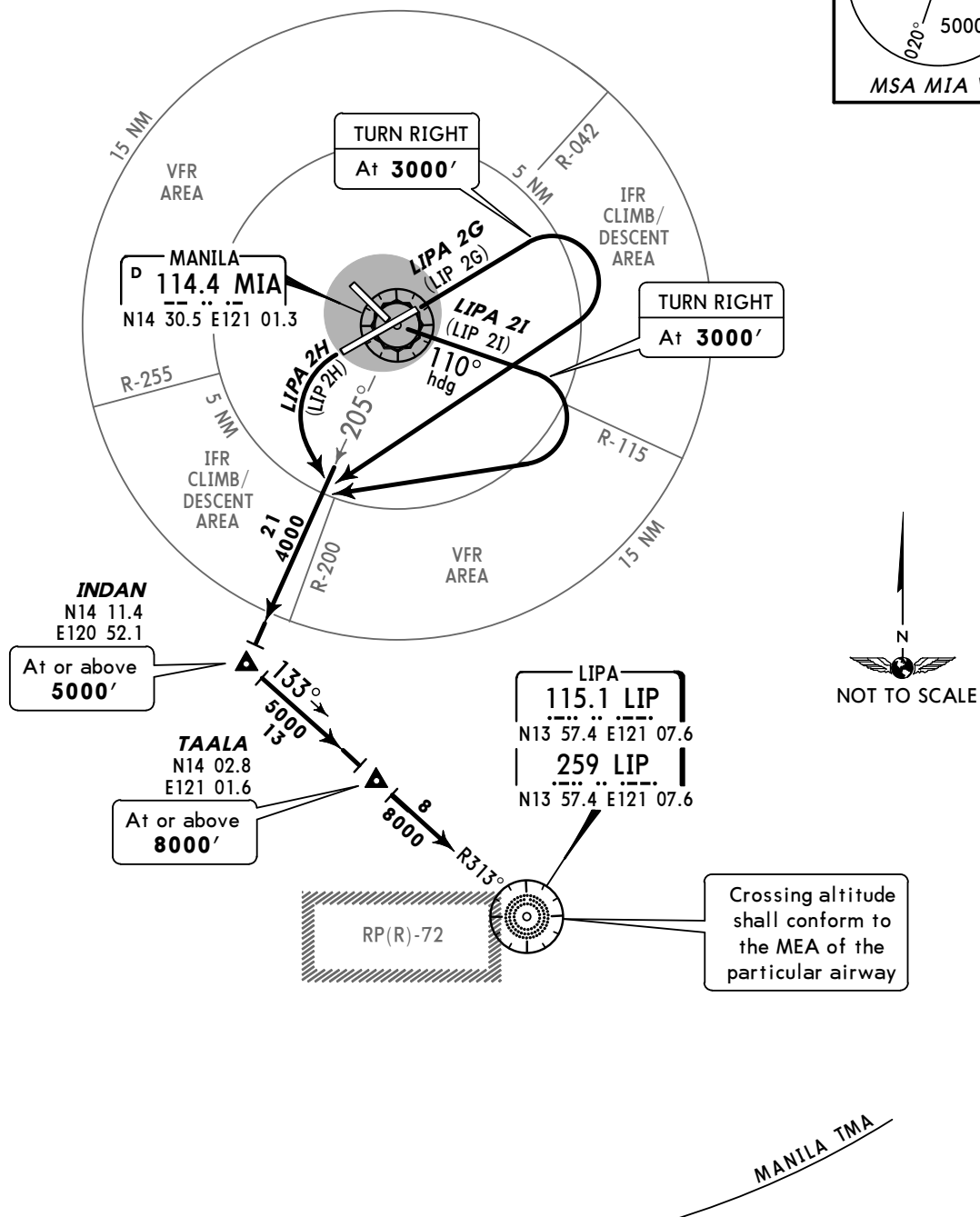
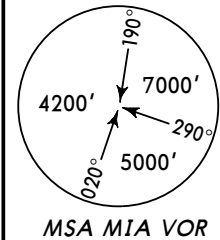
SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.

LIPA 2G (LIP 2G), LIPA 2H (LIP 2H), LIPA 2I (LIP 2I) DEPARTURES (RWYS 06, 13, 24)



SID	INITIAL CLIMB
LIPA 2G	Rwy 06: Straight-out departure to 3000', then RIGHT climbing turn.
LIPA 2H	Rwy 24: LEFT turn within 5 NM.
LIPA 2I	Rwy 13: Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING	
Intercept and track-out on MIA R-205 to INDAN. At INDAN, turn LEFT to intercept and track-in on LIP R-313 to TAALA. Continue climb to LIP. Crossing restriction at TAALA and LIP may be increased by ATC subject to RP(R)-72 activities.	

RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 OCT 14 **(10-3L)**

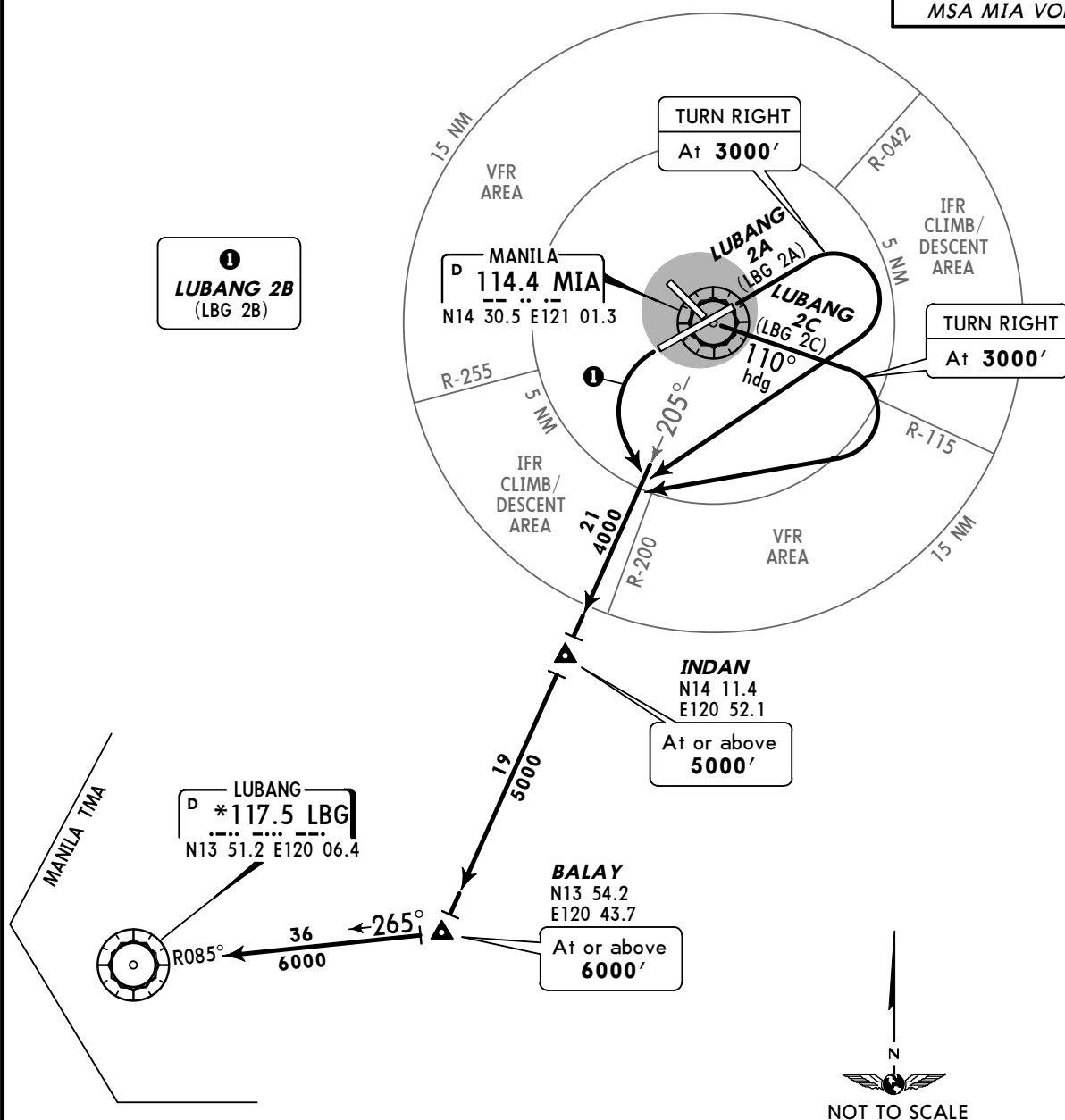
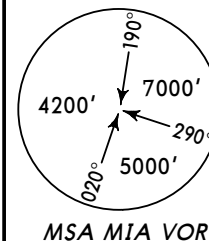
MANILA, PHILIPPINES
SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.

**LUBANG 2A (LBG 2A), LUBANG 2B (LBG 2B),
LUBANG 2C (LBG 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	INITIAL CLIMB
LUBANG 2A	Rwy 06: Straight-out departure to 3000', then RIGHT climbing turn.
LUBANG 2B	Rwy 24: LEFT turn within 5 NM.
LUBANG 2C	Rwy 13: Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING	
Intercept and track-out on MIA R-205 to INDAN. Continue climb to BALAY. At BALAY, turn RIGHT to intercept and track-in on LBG R-085.	

RPLL/MNL
NINOY AQUINO INTL



24 FEB 17

10-3M

Eff 2 Mar

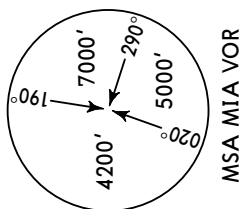
MANILA, PHILIPPINES

SID

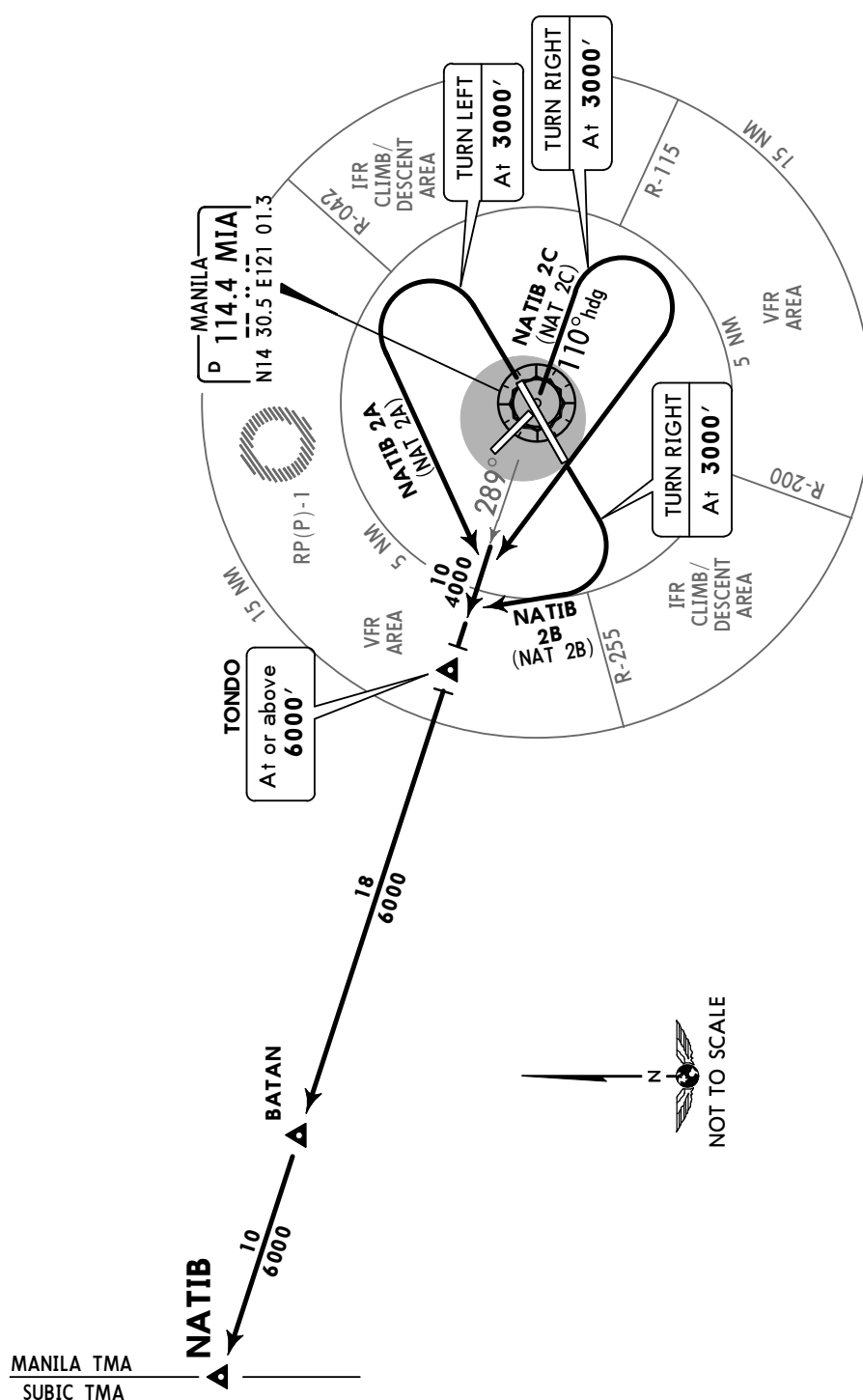
Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.



**NATIB 2A (NAT 2A), NATIB 2B (NAT 2B),
NATIB 2C (NAT 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	RWY	INITIAL CLIMB
NATIB 2A	06	Straight-out departure to 3000', then LEFT climbing turn avoiding RP(P)-1.
NATIB 2B	24	Straight-out departure to 3000', then RIGHT climbing turn.
NATIB 2C	13	Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING		
Intercept and track-out on MIA R-289 to TONDO. Continue climb to NATIB via BATAN.		

Intercept and track-out on MIA R-289 to TONDO. Continue climb to NATIB via BATAN.

RPLL/MNL
NINOY AQUINO INTL

JEPPESEN
24 FEB 17 (10-3N) Eff 2 Mar

MANILA, PHILIPPINES

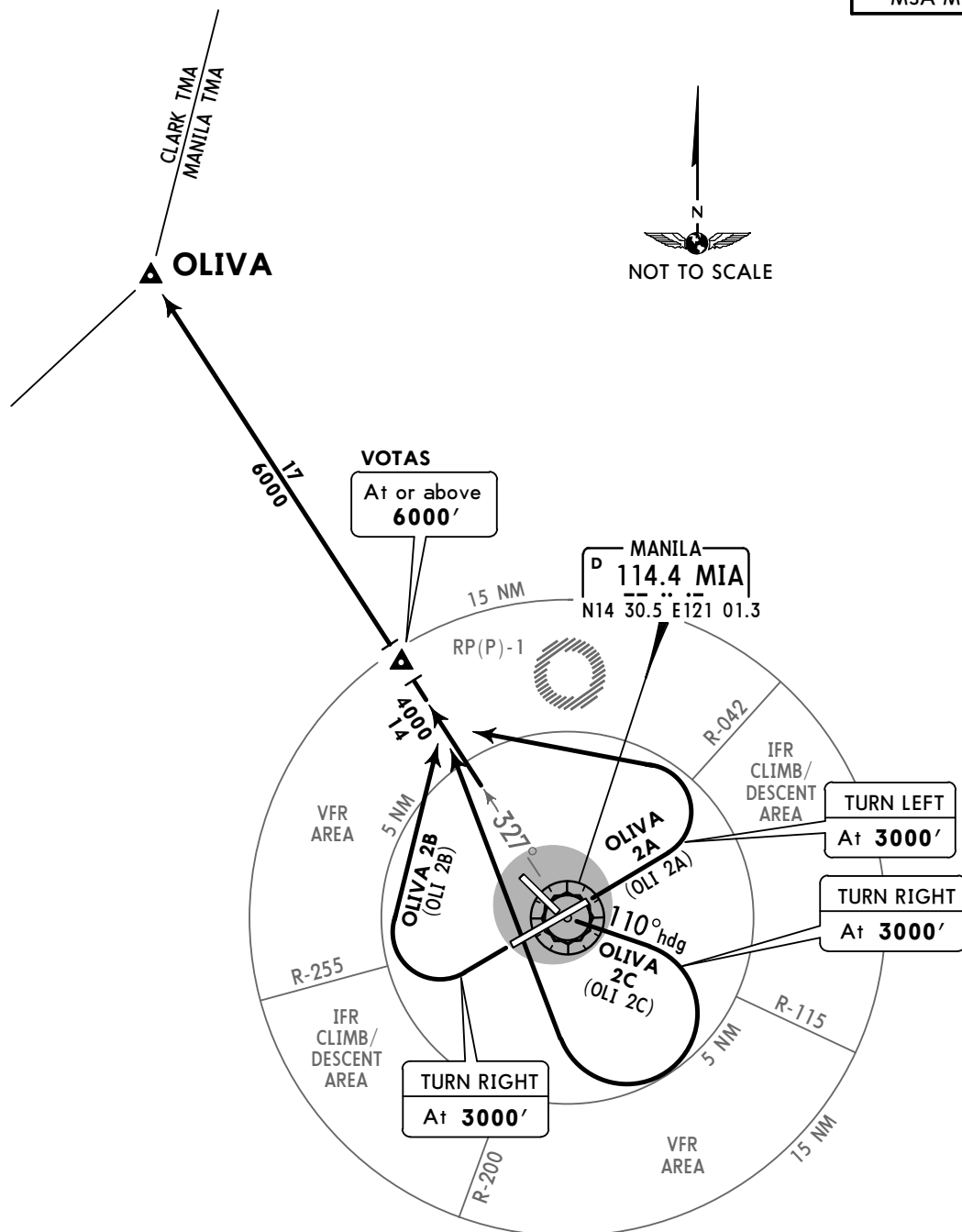
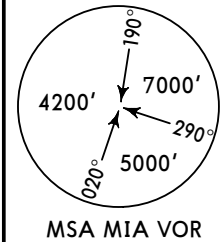
SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.

**OLIVA 2A (OLI 2A), OLIVA 2B (OLI 2B),
OLIVA 2C (OLI 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	RWY	INITIAL CLIMB
OLIVA 2A	06	Straight-out departure to 3000', then LEFT climbing turn avoiding RP(P)-1.
OLIVA 2B	24	Straight-out departure to 3000', then RIGHT climbing turn.
OLIVA 2C	13	Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING		
Intercept and track-out on MIA R-327 to VOTAS. Continue climb to OLIVA.		

RPLL/MNL
NINOY AQUINO INTL



24 OCT 14 (10-3P)

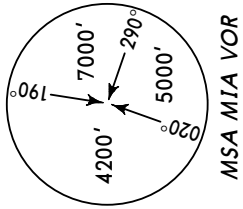
MANILA, PHILIPPINES

SID

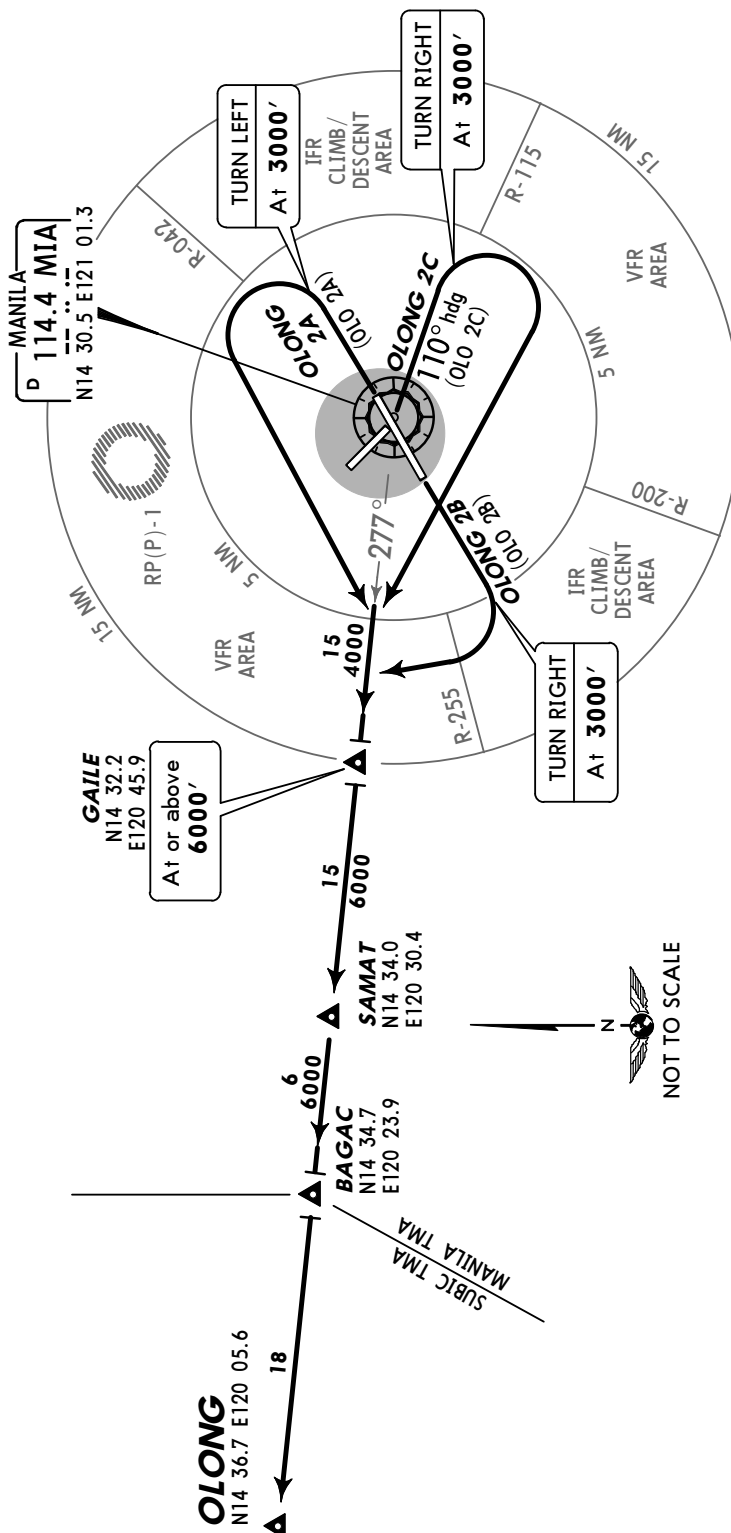
Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.



**OLONG 2A (OLO 2A), OLONG 2B (OLO 2B),
OLONG 2C (OLO 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	INITIAL CLIMB B
OLONG 2A	Rwy 06: Straight-out departure to 3000', then LEFT climbing turn avoiding RP(P)-1.
OLONG 2B	Rwy 24: Straight-out departure to 3000', then RIGHT climbing turn.
OLONG 2C	Rwy 13: Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING	
Intercept and track-out on MIA R-277 to GAILE. Continue climb to OLONG via SAMAT and BAGAC.	

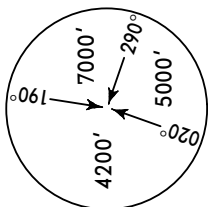
RPLL/MNL
NINYO AQUINO INTL

JEPPESSEN
24 OCT 14 **(10-3Q)**

MANILA, PHILIPPINES
SID

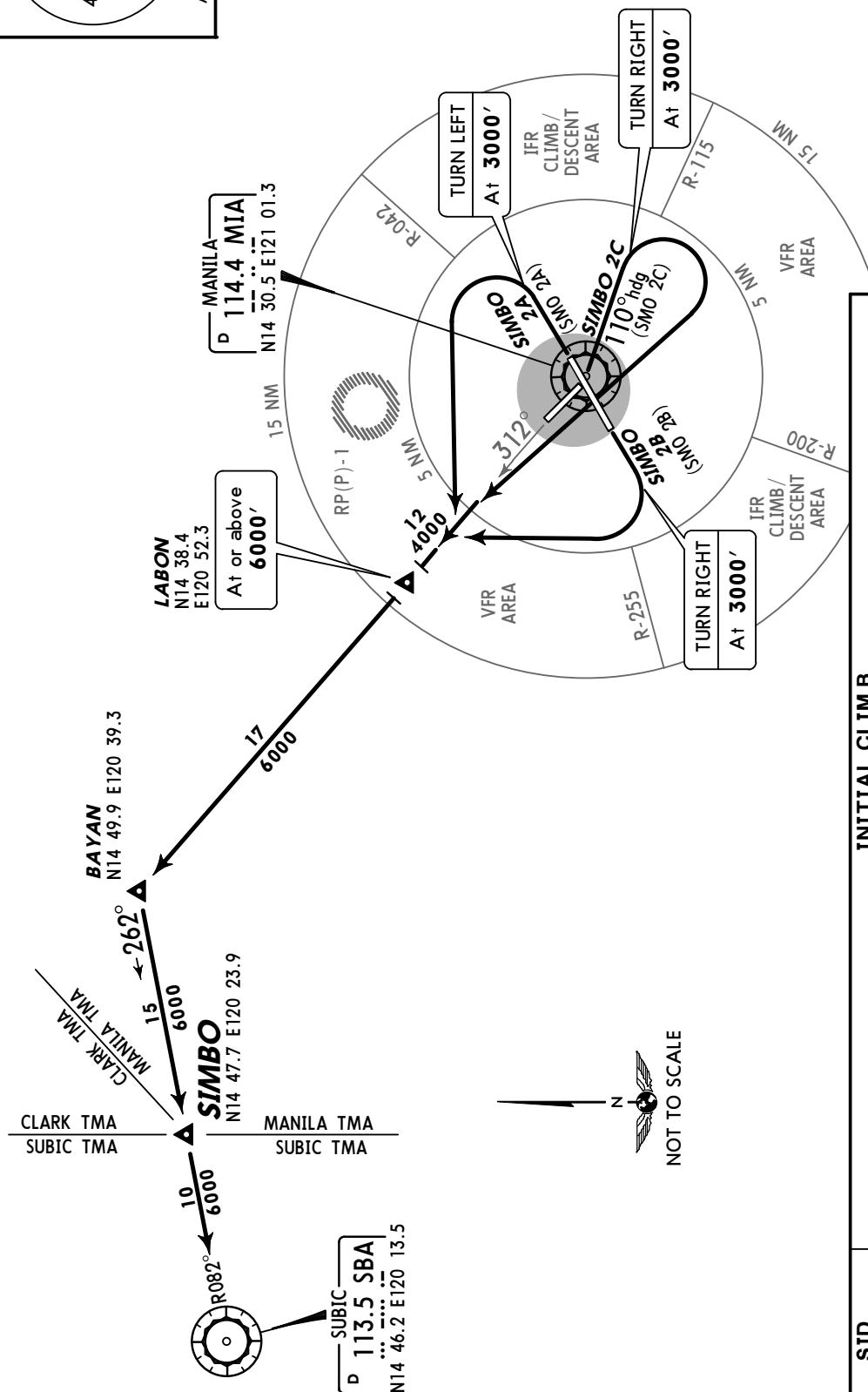
Apt Elev
75'

- Trans level: FL130 Trans alt: 11000'
1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
 2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
 3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
 4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.



MSA MIA VOR

**SIMBO 2A (SMO 2A), SIMBO 2B (SMO 2B),
SIMBO 2C (SMO 2C) DEPARTURES**
(RWYS 06, 13, 24)



INITIAL CLIMB

- | SID | INITIAL CLIMB |
|-----------------|---|
| SIMBO 2A | Rwy 06: Straight-out departure to 3000', then LEFT climbing turn avoiding RP(P)-1. |
| SIMBO 2B | Rwy 24: Straight-out departure to 3000', then RIGHT climbing turn. |
| SIMBO 2C | Rwy 13: Turn LEFT heading 110° to 3000', then RIGHT climbing turn. |

ROUTING

Intercept and track-out on MIA R-312 to LABON. Continue climb to BAYAN. At BAYAN, turn LEFT to intercept and track-in on SBA R-082 to SIMBO.

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NINYO AQUINO INTL

JEPPESEN

24 FEB 17

10-3S

Eff 2 Mar

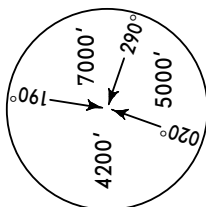
MANILA, PHILIPPINES

SID

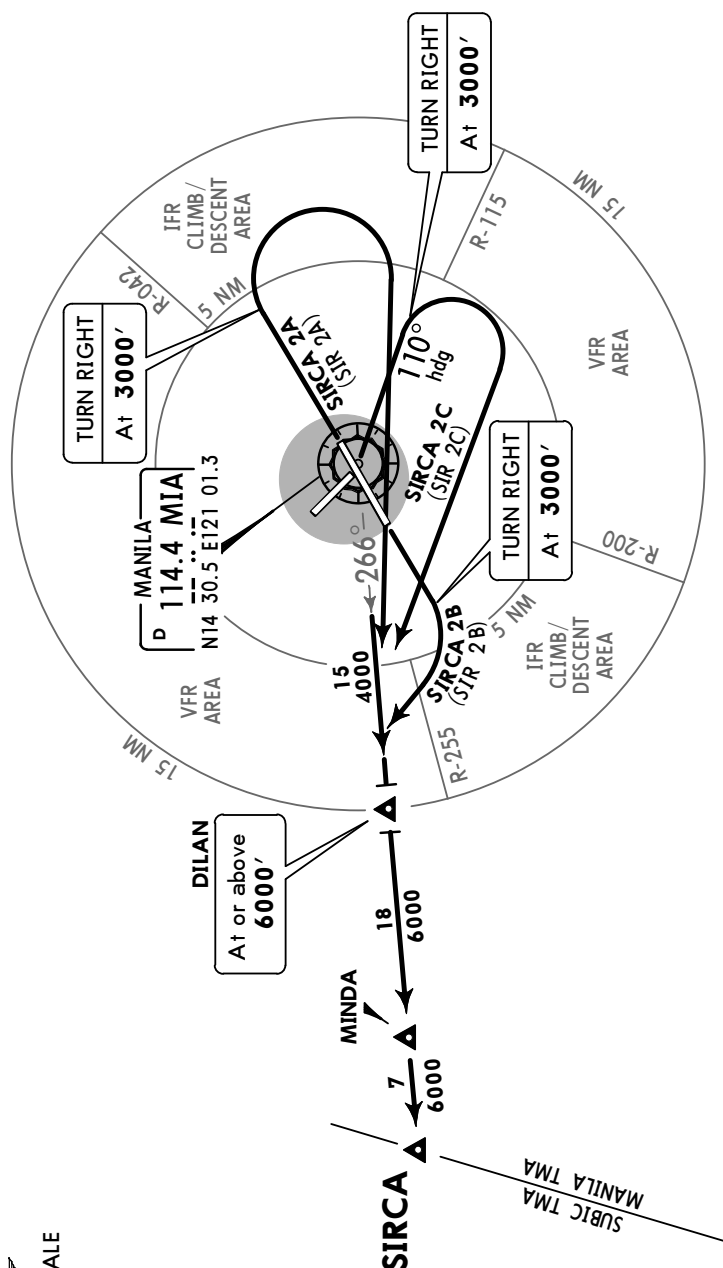
Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

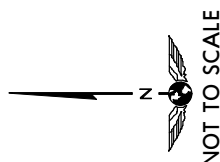
1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.



**SIRCA 2A (SIR 2A), SIRCA 2B (SIR 2B),
SIRCA 2C (SIR 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	RWY	INITIAL CLIMB
SIRCA 2A	06	Straight-out departure to 3000', then RIGHT climbing turn.
SIRCA 2B	24	Straight-out departure to 3000', then RIGHT climbing turn.
SIRCA 2C	13	Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING		
Intercept and track-out on MIA R-266 to DILAN. Continue climb to SIRCA via MINDA.		



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NINYO AQUINO INTL

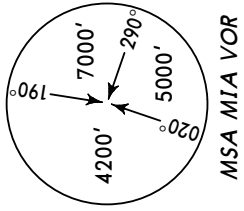
JEPPESSEN
24 OCT 14 **(10-3U)**

MANILA, PHILIPPINES

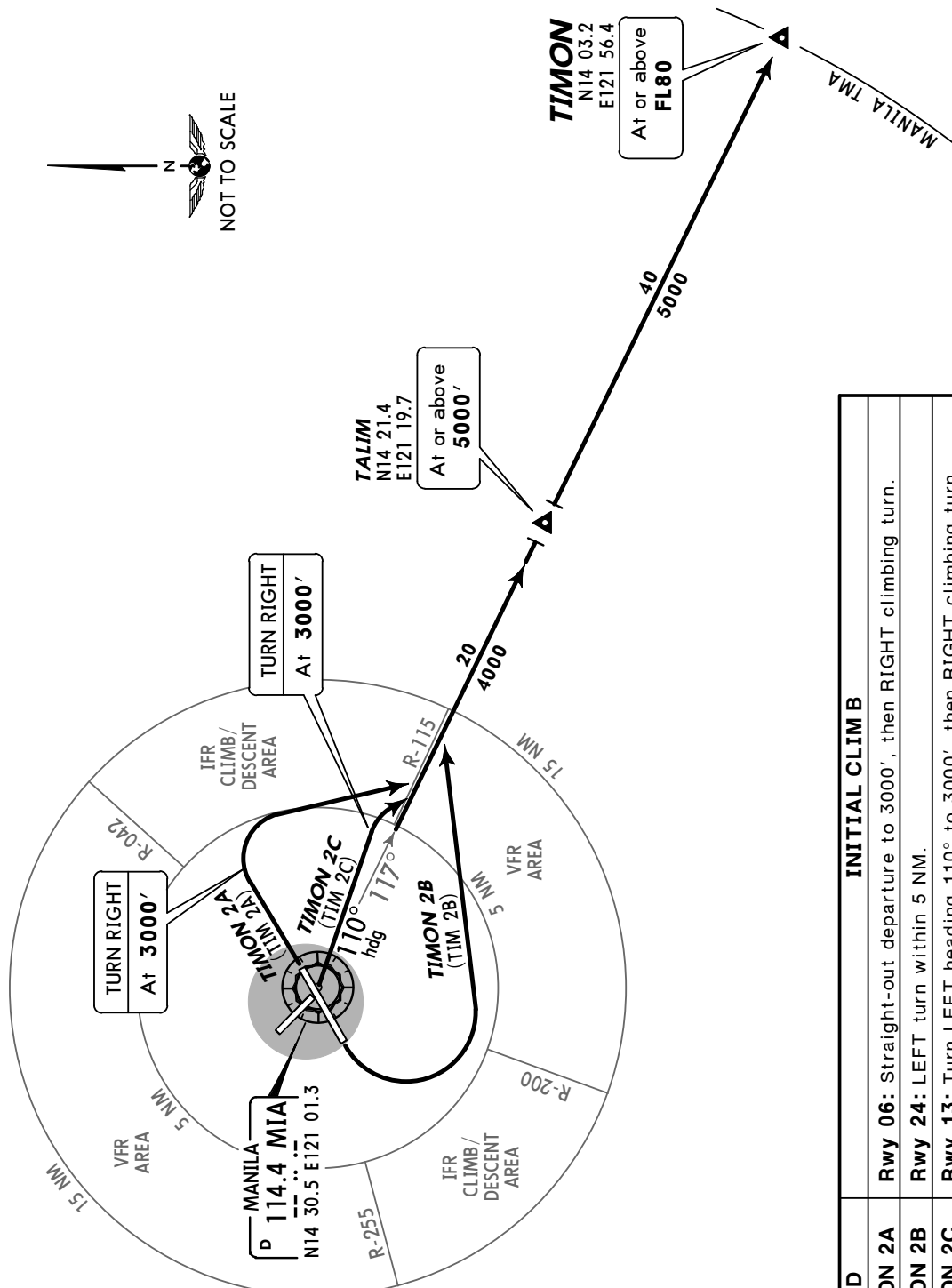
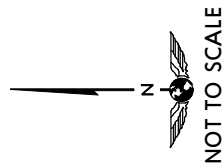
SID

Apt Elev
75'

- Trans level: FL130 Trans alt: 11000'
1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
 2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
 3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
 4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.



**TIMON 2A (TIM 2A), TIMON 2B (TIM 2B),
TIMON 2C (TIM 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	INITIAL CLIMB
TIM ON 2A	Rwy 06: Straight-out departure to 3000', then RIGHT climbing turn.
TIM ON 2B	Rwy 24: LEFT turn within 5 NM.
TIM ON 2C	Rwy 13: Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING	
Intercept and track-out on MIA R-117 to TALIM. Continue climb to TIMON.	

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NINYO AQUINO INTL

JEPPESEN
24 OCT 14 **(10-3V)**

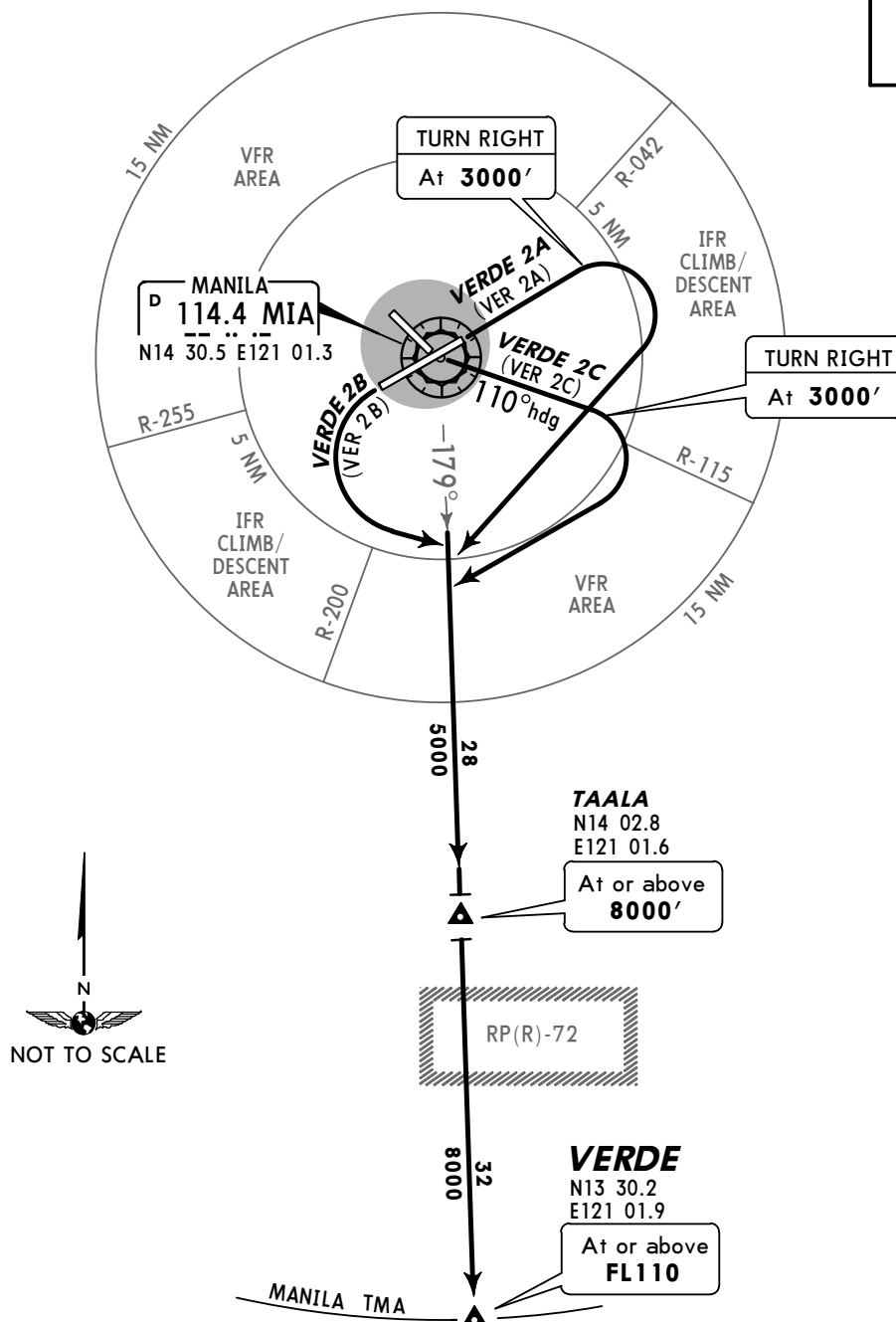
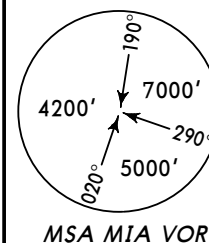
MANILA, PHILIPPINES
SID

Apt Elev
75'

Trans level: FL130 Trans alt: 11000'

1. From sunrise to sunset, IFR departures on Rwy 06/24 shall climb in the IFR Climb/Descent Area so as to cross the VFR area at 3000' or above.
2. IFR jet departures with STAGE III engines on Rwy 13 may be allowed from sunrise to sunset.
3. IFR propeller-type departures on Rwy 13 may be allowed from sunrise to sunset.
4. IFR departures on Rwy 31 may be allowed during VMC from sunrise to sunset.

**VERDE 2A (VER 2A), VERDE 2B (VER 2B),
VERDE 2C (VER 2C) DEPARTURES**
(RWYS 06, 13, 24)



SID	INITIAL CLIMB
VERDE 2A	Rwy 06: Straight-out departure to 3000', then RIGHT climbing turn.
VERDE 2B	Rwy 24: LEFT turn within 5 NM.
VERDE 2C	Rwy 13: Turn LEFT heading 110° to 3000', then RIGHT climbing turn.
ROUTING	
Intercept and track-out on MIA R-179 to TAALA. Continue climb to VERDE. Crossing restriction at TAALA may be increased by ATC subject to RP(R)-72 activities.	

RPLL/MNL

4 MAY 07

JEPPESEN

10-4

MANILA, PHILIPPINES
NINYO AQUINO INTL**NOISE ABATEMENT PROCEDURES**

Local Time minus 8 HOURS = UTC

Noise abatement procedures are applicable to all aircraft operating at the Ninoy Aquino International Airport.

| DEPARTURE PROCEDURES FOR ALL RUNWAYS

- a. For jet aircraft, a speed of V2 plus 10 knots shall be maintained up to 3000 ft AGL after takeoff, after which acceleration to flap retraction may be commenced. Climb thrust shall be selected at 1500 ft AGL.
- b. All other (non-jet) aircraft shall attempt to attain 3000 ft AGL as soon as practicable consistent with safe operational practices for subject aircraft climb performance.
- c. In all the above cases, SID procedures shall be tracked as published.
- d. The above procedures shall be terminated and standard climb out procedures implemented immediately should any event affecting climb performance occur (i.e., problem with or loss of engine power).

MODIFIED NOISE ABATEMENT PROCEDURES FOR RWY 13 DEPARTURE (SOUTH BOUND)

In addition to the procedures listed above, after takeoff make a left climbing turn before the end of Rwy 13 (max 15 deg bank angle) heading 100 degrees.

RWY 13 open for takeoff for hushkitted B737-200 and DC-9 (Stage 2) aircraft from sunrise to sunset.

ARRIVAL PROCEDURES**Rwy 06 or 24 landings:**

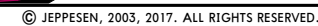
Observe published aerodrome traffic circuit, altitudes/speeds.

NOTE: IFR aircraft from the North and landing on Rwy 24 shall be radar vectored to the RIGHT base leg at or above 2000 ft.

Apt Elev **75'**
N14 30.6 E121 00.8

10 MAR 17 (10-9)

NINOY AQUINO INTL



RPLL/MNL**JEPPESEN**
10 MAR 17 **(10-9A)****MANILA, PHILIPPINES**
NINYO AQUINO INTL**GENERAL**

The following are imposed on general aviation traffic at Ninoy Aquino International Airport:

- a) Corporate Jet and air taxi are restricted to land and take-off to two cycles per hour from 2300 to 1100 daily.
- b) Aircraft not exceeding 12,527 lbs (5682 kg) are permitted to land only during the hours of 0100-0259 and 0800-sunset and only when Rwy 13 in use.

All general aviation aircraft are prohibited to conduct engine run-ups in vicinity of hangars.

Engine run-ups should be conducted at Rwy 13 run-up area, holding bays and start-up areas with prior clearance from Domestic Ramp Control.

Rwy 13 open for take-off for hush-kitted B737-200 and DC-9 (stage 2) aircraft from sunrise to sunset.

Take-off and landing on Rwy 13/31 of A330 and lower category aircraft allowed based on the following limitations:

- a) Take-off/landing on Rwy 13 allowed during IMC and VMC.
- b) Take-off/landing on Rwy 31 for day visual operations only.
- c) All take-off and landing on Rwy 13/31 must comply with existing noise abatement procedures.

Aircraft departing Rwy 13 to commence take-off roll at Arrow 2.

Take-off from Rwy 31 shall not be commenced from Taxiway F1 and Twy F2.

A320/319 not allowed on Twy D during VMC take-offs and landings of A330 on Rwy 13/31.

Touchdown on Rwy 13/31 shall be made beyond threshold marker (MNM ALT 15m).

General aviation category aircraft in a state of emergency landing must, as much as possible, utilize Rwy 13/31.

Take-off and landing on Rwy 06/24 during IMC is not allowed for general aviation aircraft with speed below 200 KT.

Rwy 06 takeoff from E3 intersection is not allowed for B737 and higher category aircraft.

Arriving aircraft on radar a vector to Manila shall not cancel IFR clearance within 20 NM.

Aircraft with security emergency shall park and will be cleared by authorities at

Isolation Parking Area located at C6.

Food and fish runs are prohibited to take-off and land at NAIA.

ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS			WIDTH
		LANDING BEYOND Threshold	Glide Slope	TAKE-OFF	
06 24	HIRL CL ALS SFL PAPI (angle 3.0°)		10,203' 3110m		197' 60m
			9843' 3000m		

- ① Rwy 06/24 open to aircraft operations daily except Friday to Wednesday between 1730-1930.
During emergency 30 minutes prior notice is required.

13 31	HIRL REIL CL PAPI (angle 3.0°)	NA	5906' 1800m	148' 45m
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RUNWAY INCURSION HOT SPOT**HS1**

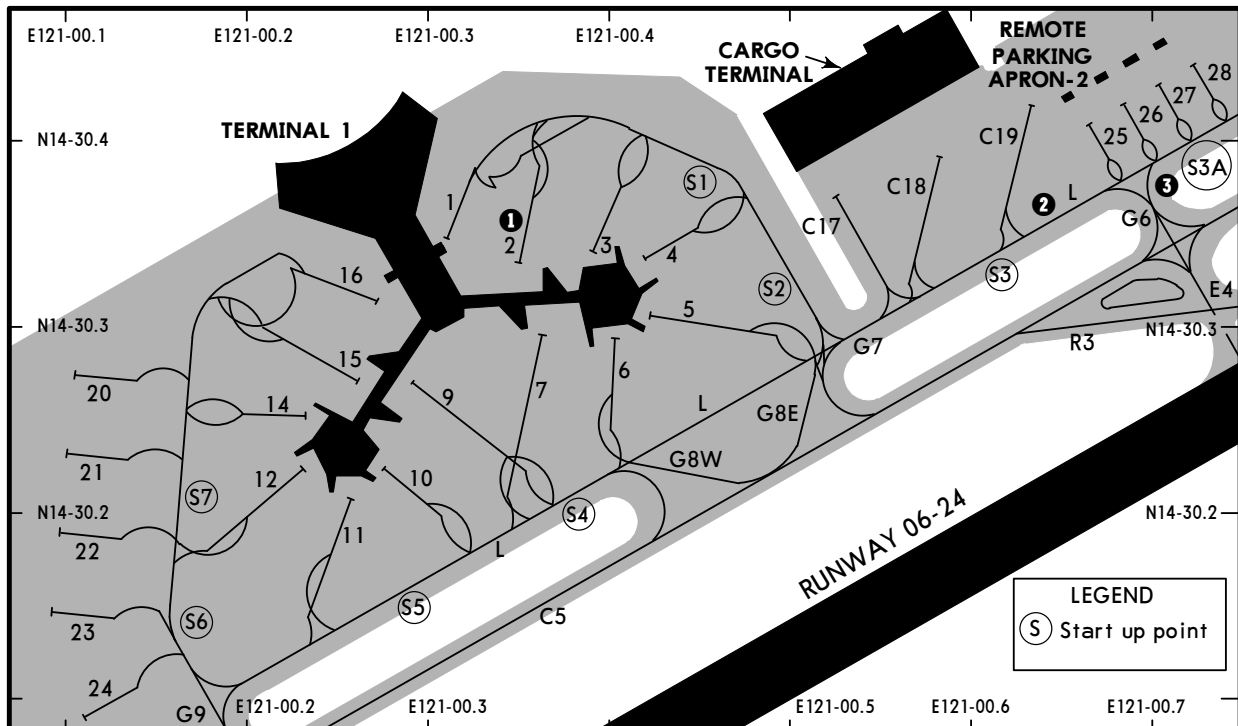
For information only, not to be construed as ATC instructions.

- HS1** Twys C3, C4, E2, E3, G3, G4, R1, and intersection of Rwy 31 and Twy C. Secure ATC clearance before crossing intersection.

TAKE-OFF

	AIR CARRIER (JAA)			AIR CARRIER (FAR 121)	
	LVP must be in Force All Rwys RL & CL	All Rwys RCLM (DAY only) or RL	All Rwys RCLM (DAY only) or RL	All Rwys Adequate Vis Ref	
A	RVR 200m	RVR 250m	RVR 400m	2 Eng	RVR 500m VIS 400m
B				3 & 4 Eng	
C					
D	RVR 250m	RVR 300m			

RPLL/MNL

JEPPESEN
29 JAN 16 10-9B Eff 4 FebMANILA, PHILIPPINES
NINYO AQUINO INTL

- ① DC10 & L1011 aircraft pushing back from Bay 2 not allowed to run engine no. 2 until reaching point S1.
- ② Taxi-in/tow-out procedures implemented on parking stands. Twy Lima between G6 and S3 closed for code C and higher category aircraft if bay 25 and/or bay 26 is occupied by A321. Twy Lima between G6 and S3 is open for A320 and lower category aircraft if bay 25 and/or bay 26 is occupied by A321. Higher category aircraft allowed when no aircraft is parked at bay 25 and 26. First-in procedures implemented at bay 25 for A321 if bay 26 is to be occupied by A321. Last-out procedures implemented at bay 25 for A321 if bay 26 is occupied by A321. First-out procedures implemented at bay 26 for A321 if bay 25 is occupied by A321. Twy Lima between S3A and G6 closed for code D and higher category aircraft if there is an aircraft parked at Remote Parking Apron-2.
- ③ Twy Lima between S3A and G6 closed for code D and higher category aircraft if there is an aircraft parked at Remote Parking Apron-2.

PARKING BAY COORDINATES

BAY No.	COORDINATES
TERMINAL 1	
1	N14 30.4 E121 00.3
2 thru 7	N14 30.3 E121 00.4
9	N14 30.3 E121 00.3
10, 11	N14 30.2 E121 00.3
12	N14 30.2 E121 00.2
14	N14 30.3 E121 00.2
15, 16	N14 30.3 E121 00.3
20	N14 30.3 E121 00.1
21, 22	N14 30.2 E121 00.1
23, 24	N14 30.1 E121 00.1
CARGO TERMINAL	
C17	N14 30.4 E121 00.5
C18, C19	N14 30.4 E121 00.6
REMOTE PARKING APRON-2	
25 thru 28	N14 30.4 E121 00.7

RPLL/MNL

29 JAN 16

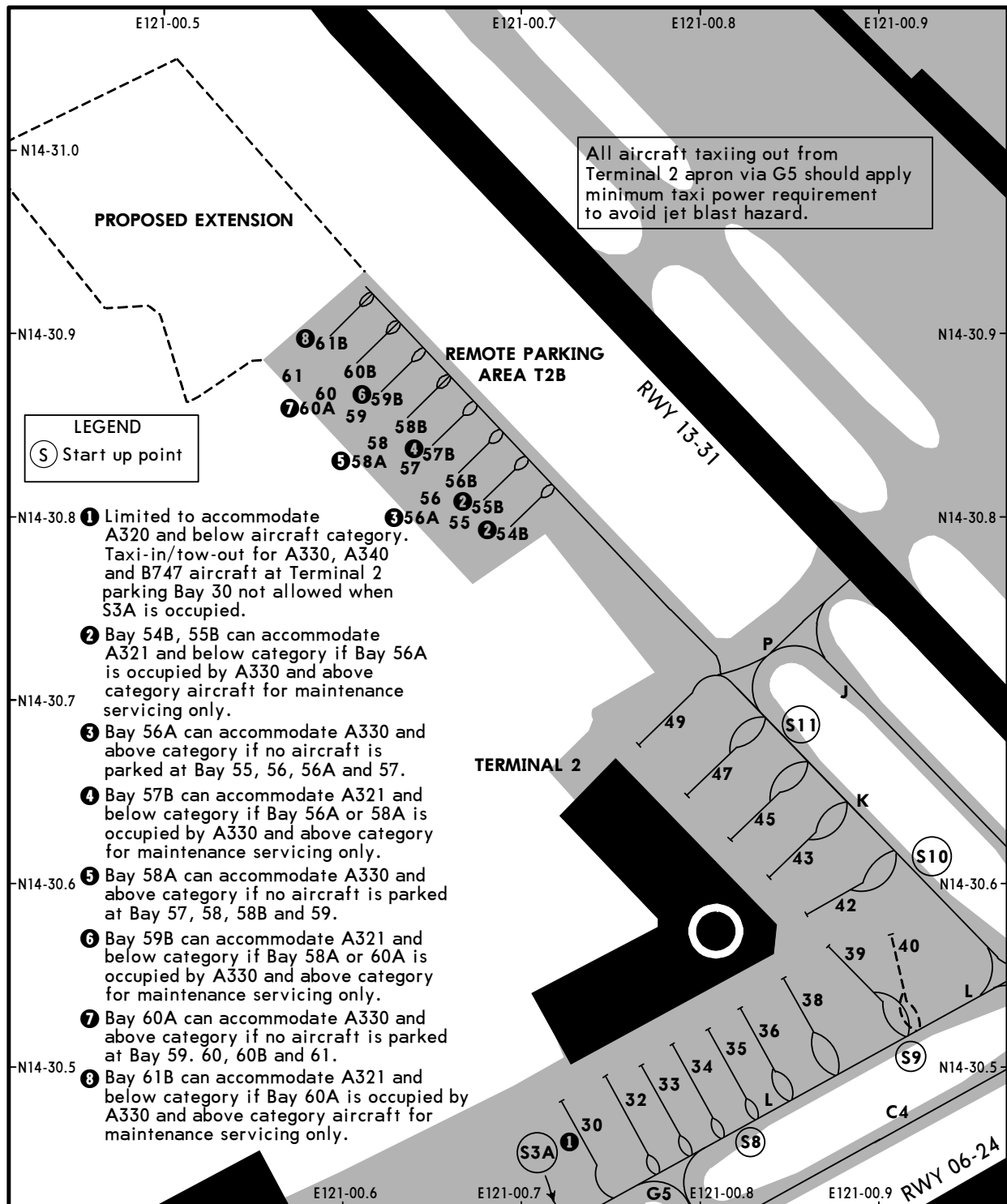
JEPPESSEN

10-9C

Eff 4 Feb

MANILA, PHILIPPINES

NINYO AQUINO INTL



BAY No.	COORDINATES
TERMINAL 2	
30	N14 30.5 E121 00.7
32 thru 36	N14 30.5 E121 00.8
38	N14 30.5 E121 00.9
39, 40, 42, 43	N14 30.6 E121 00.9
45	N14 30.6 E121 00.8
47, 49	N14 30.7 E121 00.8
REMOTE PARKING AREA T2B	
54B	N14 30.8 E121 00.7
55 thru 58B	N14 30.8 E121 00.6
59 thru 60B	N14 30.9 E121 00.6
61, 61B	N14 30.9 E121 00.5

RPLL/MNL

2 DEC 16

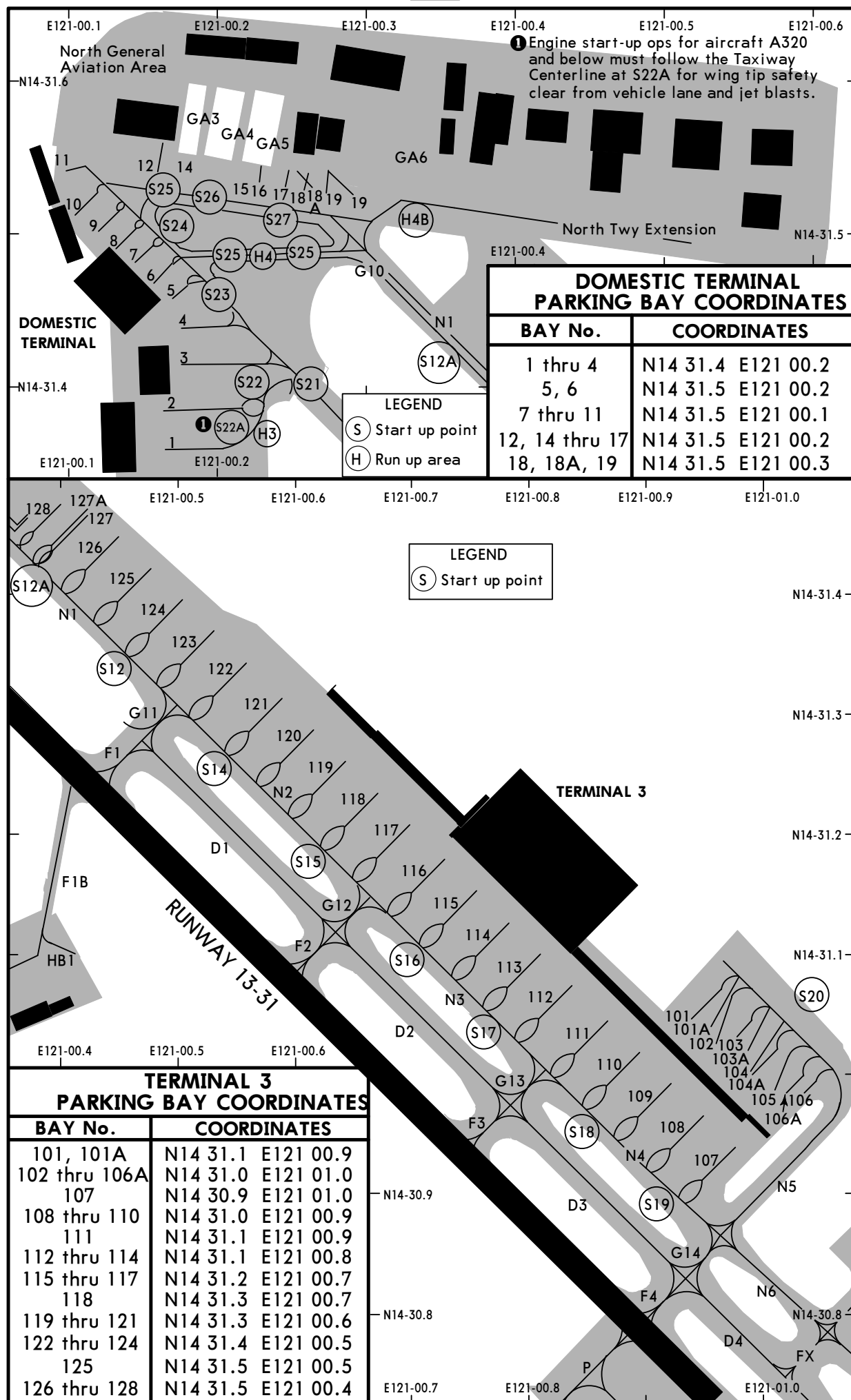
JEPPesen

(10-9C1)

Eff 8 Dec

MANILA, PHILIPPINES

NINYO AQUINO INTL



RPLL/MNL **JEPPESEN**
9 MAY 14 **(10-9D)****MANILA, PHILIPPINES**
NINYO AQUINO INTL**INTERNATIONAL DEPARTURES**

The Pilot shall call Clearance Delivery for ATC clearance 5 minutes from the estimated start-up time. After receiving clearance the pilot shall switch to Ground Control for start-up clearance then after receiving start-up clearance the pilot shall switch to Ramp Control for push-back clearance or any other maneuver on the apron (including idle power start-up on bays) *Note: Start-up shall commence at designated starting point only.* Pilots intending to utilize RNAV route L628 shall call Clearance Delivery for ATC clearance 5 minutes prior to blockoff/push-back time. Clearance shall be cancelled if not blockoff/push-back 5 minutes after receipt of ATC clearance.

Procedure for issuance of ATC clearance and push back for flights utilizing L628.

- Pilot shall call Clearance Delivery notifying that aircraft is ready for push back in 5 minutes using the following phraseology: Call sign - (Destination) via L628 - Parking position - Required ATC clearance - Ready to push back in 5 minutes.
- Clearance Delivery shall relay ATC clearance issued by Manila Control, in addition to the instruction that ATC clearance void if not push back by (time).
- ATC clearance shall be cancelled on the expiry of the 5 minute grace period.

Procedure for departing flight from Manila utilizing L628.

- FL280 and FL390 are reserved FL's on L628.
- 10 minutes longitudinal separation using Mach Number Technique (MNT) will be applied to successive departures requesting same FL. *Note: For application of MNT, FPL should indicate True Mach Number from Ibohi until Menam.*
- Additional longitudinal separation as appropriate shall be provided by ATC for the faster aircraft following a slower aircraft on the same route.

DOMESTIC DEPARTURES

The pilot shall call Clearance Delivery specifying preferred runway and request for ATC clearance 5 minutes from estimated start-up time. After receiving clearance the pilot shall switch to Ground Control for start-up clearance then after receiving start-up clearance the pilot shall switch to Ramp Control for push-back clearance or any other maneuver on the apron (including idle power start-up on bays). *Note: Start-up shall commence at designated starting point only.*

SPEED RESTRICTIONS

Unless authorized by ATC, arriving aircraft shall enter the Manila TMA at a speed of 250 knots IAS. At 20 NM, arriving aircraft shall maintain a speed of 210 knots IAS. At 10 NM from the airport, arriving aircraft must strictly maintain a speed of 180 knots IAS and at 5 NM, strictly maintain a speed of 150 knots IAS. If there is no need to apply the speed restriction, ATC shall inform the pilot of the arriving aircraft with the phraseology "No speed control required".

ARRIVAL PROCEDURES

ROTA - Runway occupancy time-arrival

ROTA will start at the time the aircraft crosses the runway threshold marker on its final glide to the time it vacates the runway from a specified point.

After the aircraft has landed, the pilot shall change to Ground Control immediately after clearing the runway or as instructed by ATC. Ground Control will instruct the aircraft to proceed to specified entrance gateways.

Contact Ramp Control or as instructed by ATC for approval to continue taxiing into the apron towards assigned parking bay.

Aircraft entering the apron are to follow closely the apron taxi guidelines so as to maintain safe distance between taxiing and parked aircraft.

DEPARTURE PROCEDURES

ROTD - Runway occupancy time-departure

ROTD will start at the time the aircraft reaches no 1 position (lined-up on the runway threshold marker) and the pilot reads back the ATC's take-off clearance to the time it is airborne (wheels off the ground).

SIMULTANEOUS OPERATIONS ON RWY 06/24 AND RWY 13/31**GENERAL**

During periods of traffic congestion, simultaneous operations on Rwy 06/24 and Rwy 13/31 may be authorized by the controller in accordance with the procedures and separation minima described under DEPARTURES on 10-9E.

RPLL/MNL **JEPPESEN**
9 MAY 14 **(10-9E)****MANILA, PHILIPPINES**
NINYO AQUINO INTL**DEPARTURES**

Between aircraft taking-off on either Rwy 06/24 and:

- a. *Aircraft taking-off on Rwy 31* No separation is necessary between the two departures regardless of type, provided that the departure on Rwy 31 shall commence its take-off not farther than the intersection of Rwy 31 and Rwy 06/24.
- b. *Aircraft taking-off on Rwy 13* Sufficient separation shall be maintained between the two departures to ensure that the first departing aircraft shall have passed the intersection of the two runways before the second departing aircraft shall commence its take-off.

Between aircraft departing on Rwy 13 ahead of another aircraft landing on either Rwy 06 or Rwy 24:

- a. Sufficient separation shall be effected between the two aircraft to ensure that the landing aircraft on either Rwy 06 or Rwy 24 shall not cross the Las Pinas shoreline or abeam the town of Taguig, as the case may be, on its final glide until the departing aircraft on Rwy 13 shall have passed the intersection of the two runways.
- b. Sufficient separation shall be effected between the two aircraft to ensure that a departing aircraft on Rwy 13 shall not converge with a landing aircraft on the downwind leg of either Rwy 06 or Rwy 24.

ARRIVALS

Between aircraft landing on either Rwy 06 or Rwy 24 ahead of an aircraft landing on Rwy 13, sufficient separation shall be effected between the two arrivals to ensure that the aircraft landing on Rwy 13 shall not cross the Pasay shoreline on its final glide until the landing aircraft on Rwy 06 or Rwy 24 shall have passed and is clear of the intersection of two runways.

Between aircraft landing on Rwy 13 ahead of another aircraft landing on Rwy 06 or Rwy 24:

- a. The landing aircraft on Rwy 06 shall not cross the Las Pinas shoreline on its final glide until the landing aircraft on Rwy 13 shall have turned into the taxiway, or have made a 180° turn, or come to a full stop before reaching the intersection of Rwy 13 and Rwy 06/24.
- b. The landing aircraft on Rwy 24 shall not cross the line abeam Taguig town on its final glide until the landing aircraft on Rwy 13 shall have turned into the taxiway, or have made a 180° turn, or made a full stop before reaching the intersection of Rwy 13 and Rwy 06/24.

Between aircraft landing on either Rwy 06 or Rwy 24 ahead of another aircraft:

- a. *Landing on Rwy 31* The landing aircraft on Rwy 31 shall not cross Laguna de Bay shoreline (abeam Meralco) on its final glide until the landing aircraft on either Rwy 06 or Rwy 24 shall have passed and is clear of the intersection of the two runways.
- b. *Taking-off on Rwy 13* Sufficient separation shall be effected between the two aircraft to ensure that the aircraft departing on Rwy 13 shall not commence its take-off until the landing aircraft on either Rwy 06 or Rwy 24 shall have passed, or have stopped short and will remain clear of, the intersection of the two runways.

Between aircraft landing on Rwy 13 ahead of another aircraft taking-off on either Rwy 06 or Rwy 24: Sufficient separation shall be effected between the two aircraft to ensure that the departing aircraft on Rwy 06 or Rwy 24 shall not commence its take-off until the landing aircraft on Rwy 13 shall have turned into a taxiway, or have made a 180° turn, or made a full-stop, before reaching the intersection of the two runways.

Between aircraft landing on Rwy 31 ahead of another aircraft taking-off on either Rwy 06 or Rwy 24: Sufficient separation shall be effected between the two aircraft to ensure that the departing aircraft on Rwy 06 or Rwy 24 shall not commence its take-off until the landing aircraft on Rwy 31 shall have passed the intersection of the two runways.

GO-AROUND PROCEDURES**Rwy 24** - A LEFT TURN commencing from a line abeam Taguig town within an arc short of the runway threshold. However, Jet aircraft shall be made to pull-up and go around to re-enter downwind for Rwy 24 with pilot's discretion when to make the turn to join downwind.**Rwy 06** - A RIGHT TURN commencing Las Pinas shoreline within an arc short of the runway threshold. However, Jet aircraft shall be made to pull-up and go around to re-enter downwind for Rwy 06 with pilot's discretion when to make turn to join downwind.**Rwy 13** - For light aircraft (12,500 lbs and below), a RIGHT TURN from the Baclaran church within an arc short of the threshold; for DC-3, HS-748, YS-11 and similar types from the Pasay shoreline.**Rwy 31** - When Rwy 06 is in use, a RIGHT TURN commencing from Laguna de Bay shoreline abeam Meralco with an arc short of the housing area.

Simultaneous use of Rwy 06/24 and Rwy 13/31 for Jet aircraft shall be prohibited.

The controller on duty may deviate from the above procedures if in his best judgement such deviations are in the interest of safety and efficiency.

SIMULTANEOUS USE OF Rwy 06/24 and Rwy 13/31



JEPPESEN MANILA, PHILIPPINES

27 APR 12

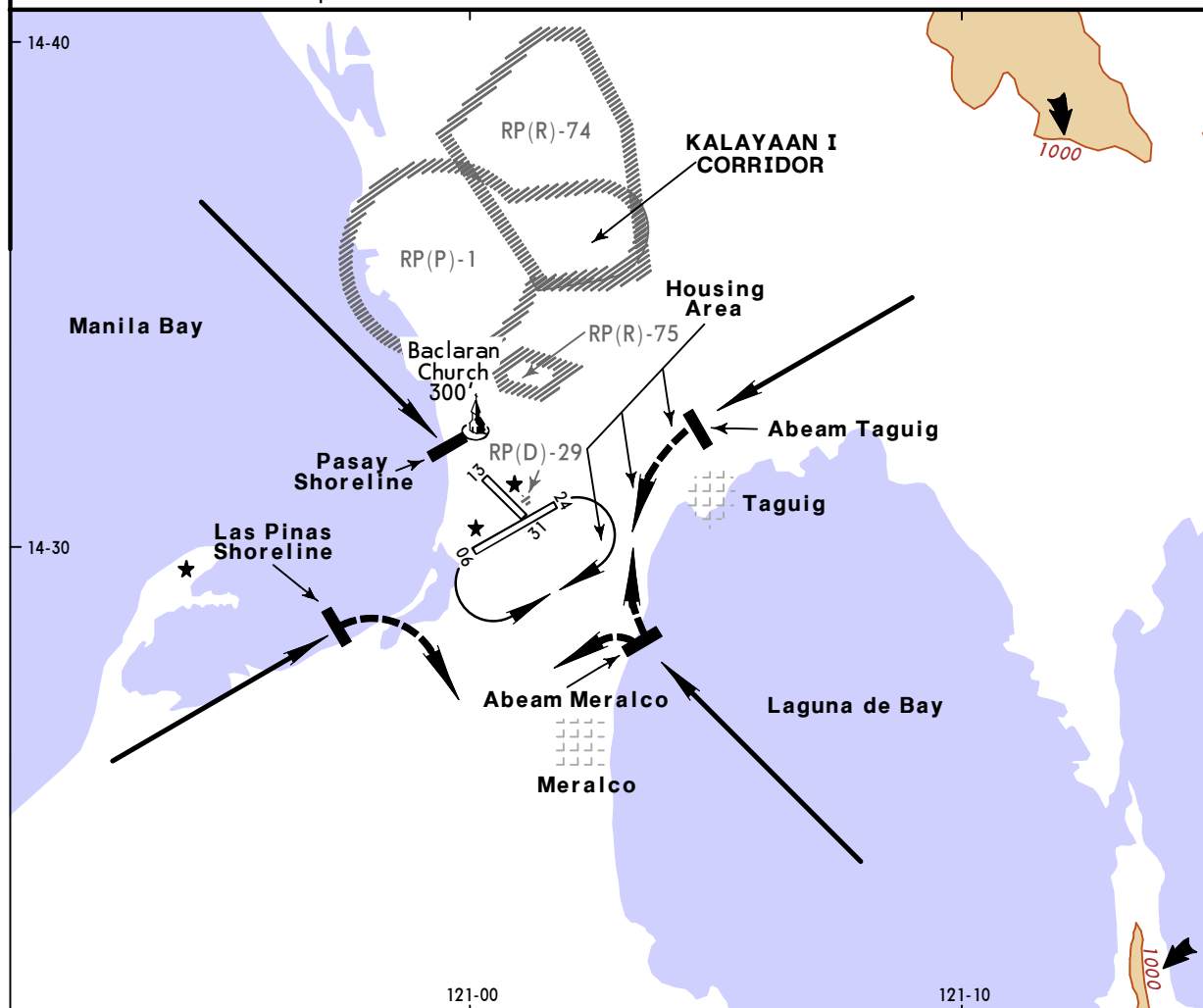
(10-9E1)

Eff 3 May

NINYO AQUINO INTL

Apt Elev 75'

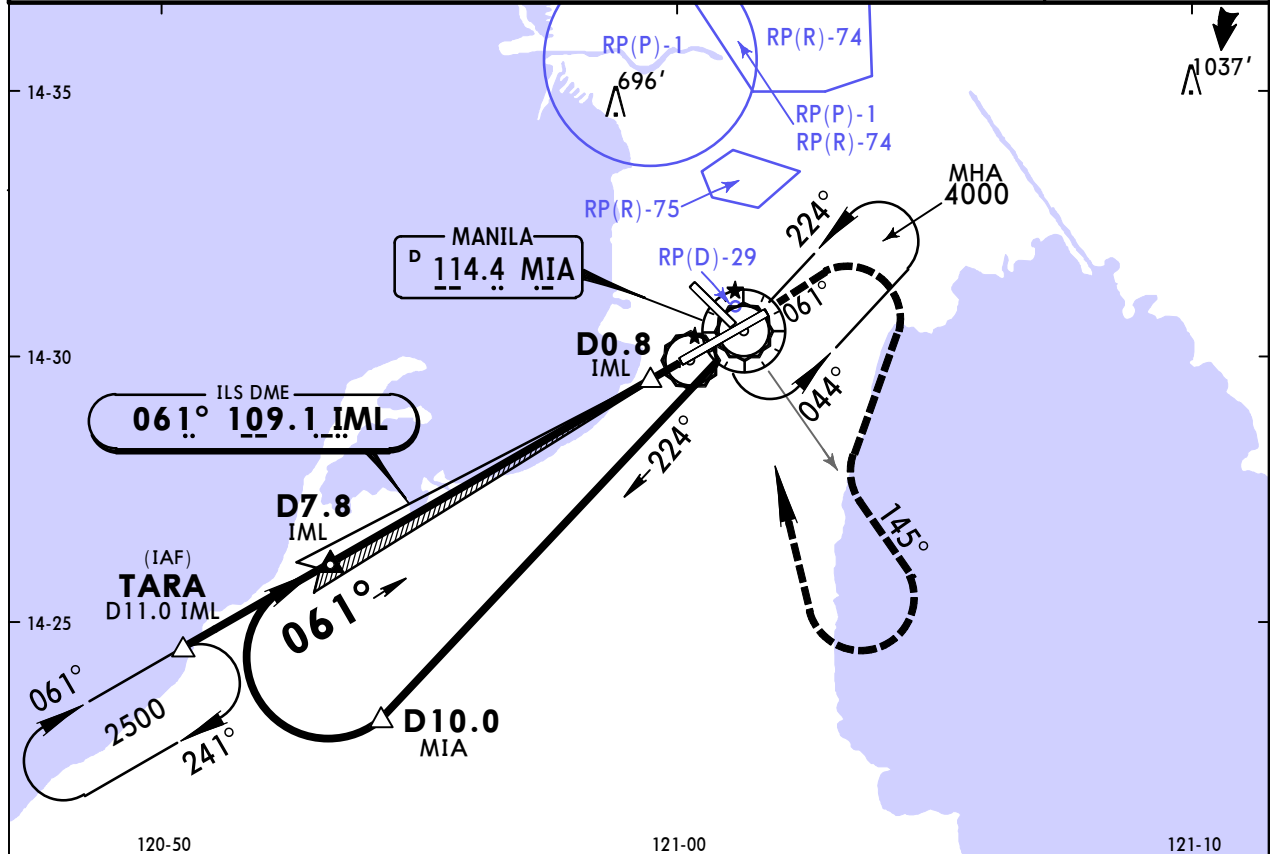
ATIS	MANILA Approach (R)	MANILA Tower	Ground
126.4	121.1	118.1	121.8
Alt Set: hPa	Apt Elev: 3 hPa	Trans level: FL 130	Trans alt: 11000'



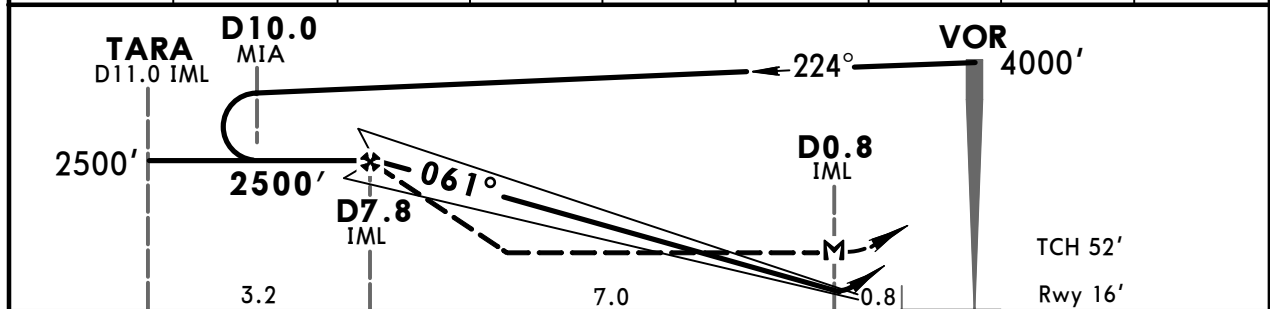
RPLL/MNL
NINYO AQUINO INTL24 FEB 17 **11-1** Eff 2 MarMANILA, PHILIPPINES
ILS or LOC Rwy 06

BRIEFING STRIP™

ATIS 126.4		MANILA Approach (R) 121.1		MANILA Tower 118.1		Ground 121.8	
LOC IML 109.1	Final Apch Crs 061°	Minimum Alt D7.8 IML 2500' (2484')	ILS DME DA(H) 280' (264')	Apt Elev 75' Rwy 16'		 MSA MIA VOR	
MISSED APCH: Track 061°. At 1000' turn RIGHT to intercept MIA VOR R-145. At 4000' turn RIGHT for holding at MIA VOR, or as instructed by ATC.							
Alt Set: hPa		Rwy Elev: 1 hPa	Trans level: FL 130		Trans alt: 11000'		
1. DME and VOR required.							



LOC (GS out)	IML DME	7.8	7.0	6.0	5.0	4.0	3.0	2.0
	ALTITUDE	2500'	2255'	1935'	1615'	1295'	975'	655'



Gnd speed-Kts	70	90	100	120	140	160	PAPI ALS	1000'	on 061°	4000'	MIA
GS	3.01°	373	479	532	639	745		↑		RT	on 114.4 R-145
MAP at D0.8 IML											

STRAIGHT-IN LANDING RWY06				CIRCLE-TO-LAND			
ILS		LOC (GS out)		Not Authorized North of the Field between Rwy 13 & 24			
DA(H) 280' (264')		MDA(H) 380' (364')		South of Rwy 06/24.		Northwest between Rwy 06 & 13.	
FULL	ALS out		ALS out	Max Kts	MDA(H)	MDA(H)	
A				100	470' (395') - 1.9 km	630' (555') - 1.9 km	
B	0.8 km	1.2 km	1.6 km	135	570' (495') - 2.8 km	630' (555') - 2.8 km	
C			2.0 km	180	670' (595') - 3.7 km	670' (595') - 3.7 km	
D				205	770' (695') - 4.6 km	770' (695') - 4.6 km	

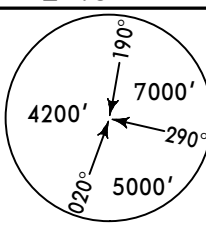
PANS OPS

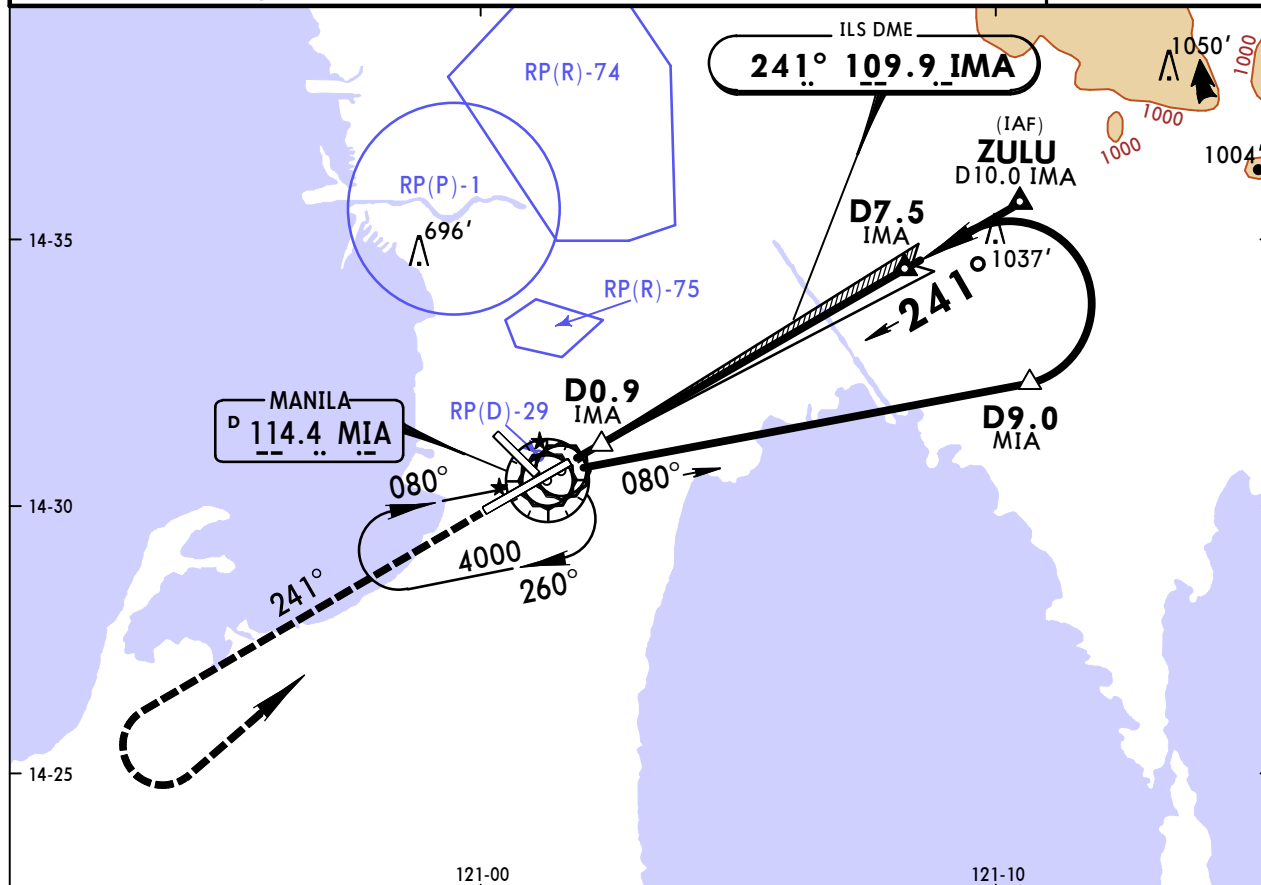
RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 FEB 17 **(11-2)** Eff 2 Mar

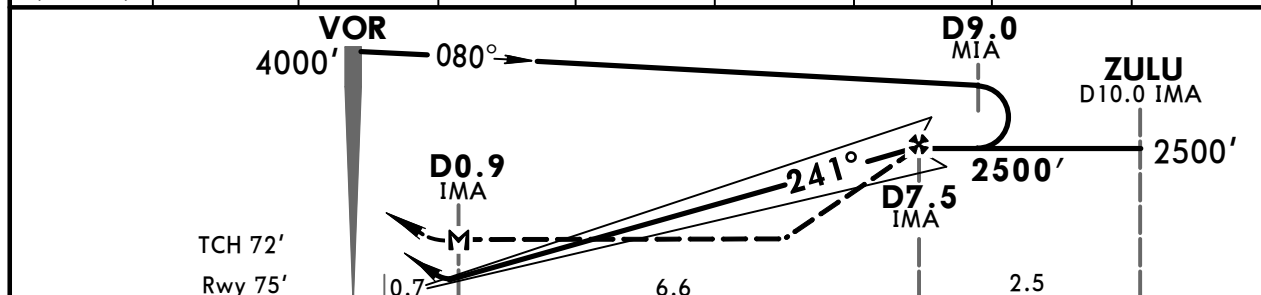
MANILA, PHILIPPINES
ILS or LOC Rwy 24

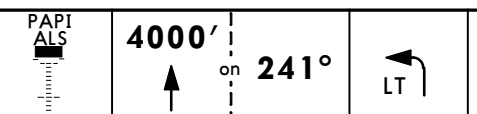
BRIEFING STRIP

ATIS 126.4		MANILA Approach (R) 121.1		MANILA Tower 118.1		Ground 121.8			
LOC IMA 109.9	Final Apch Crs 241°	Minimum Alt D7.5 IMA 2500' (2425')	ILS DME DA(H) 375' (300')	Apt Elev 75' Rwy 75'					
MISSED APCH: Track 241° on climb to 4000'. At 4000' turn LEFT for holding at MIA VOR, or as instructed by ATC.									
Alt Set: hPa		Rwy Elev: 3 hPa		Trans level: FL 130				Trans alt: 11000'	
1. VOR and DME required.									
MSA MIA VOR									



LOC (GS out)	IMA DME	2.0	3.0	4.0	5.0	6.0	7.0	7.5
	ALTITUDE	725'	1050'	1375'	1700'	2025'	2350'	2500'



Gnd speed-Kts	70	90	100	120	140	160		MIA 114.4
GS	3.06°	379	487	541	650	758		
MAP at D0.9 IMA								

STRAIGHT-IN LANDING RWY24				CIRCLE-TO-LAND			
ILS		LOC (GS out)		Not Authorized North of the Field between Rwy 13 & 24			
DA(H) 375' (300')		MDA(H) 500' (425')		South of Rwy 06/24.		Northwest between Rwy 06 & 13.	
FULL		ALS out		Max Kts	MDA(H)	MDA(H)	
A	0.8 km	1.2 km	1.8 km	100	470'(395') - 1.9 km	630'(555') - 1.9 km	
				135	570'(495') - 2.8 km	630'(555') - 2.8 km	
				180	670'(595') - 3.7 km	670'(595') - 3.7 km	
				205	770'(695') - 4.6 km	770'(695') - 4.6 km	

PANS OPS

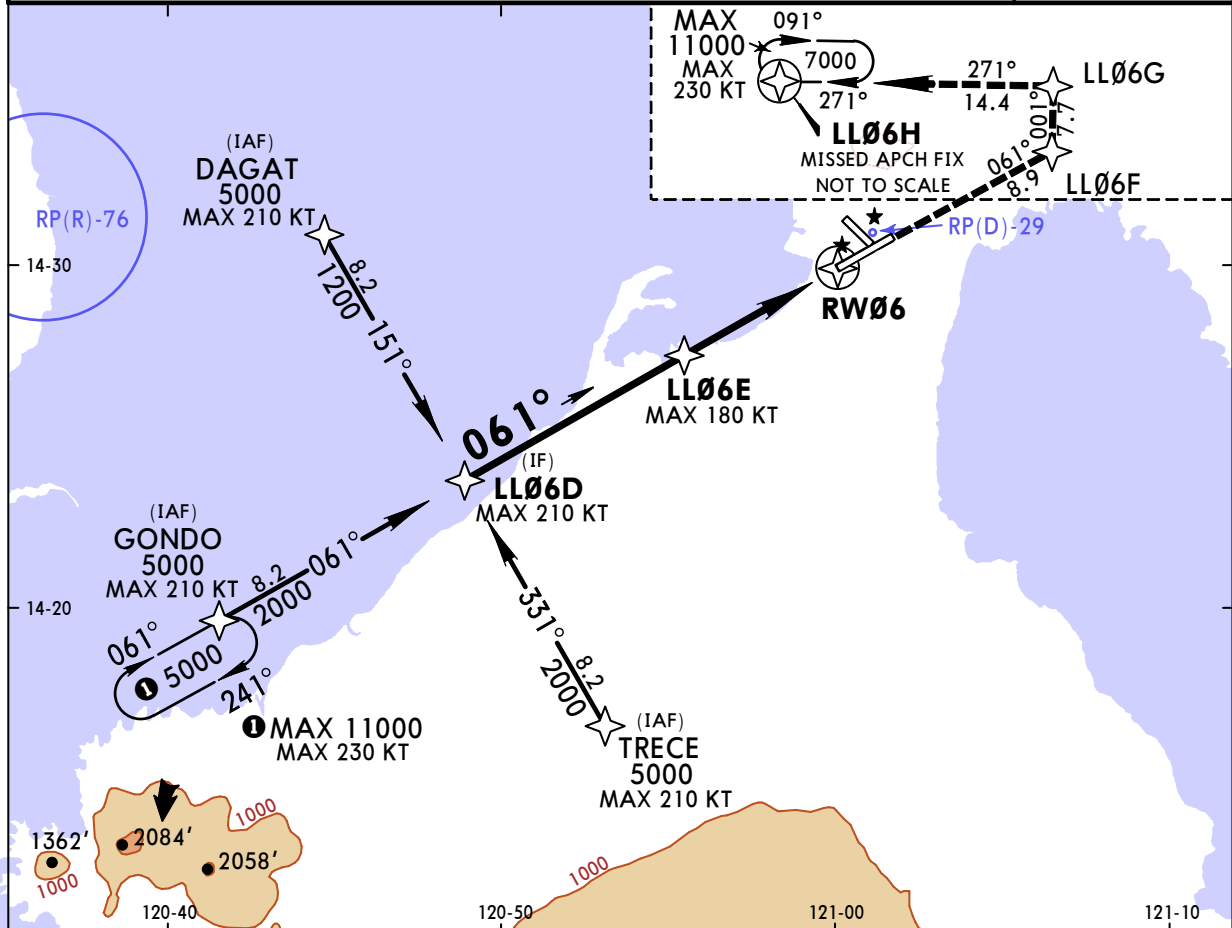
RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 FEB 17 **(12-1)** **Eff 2 M**

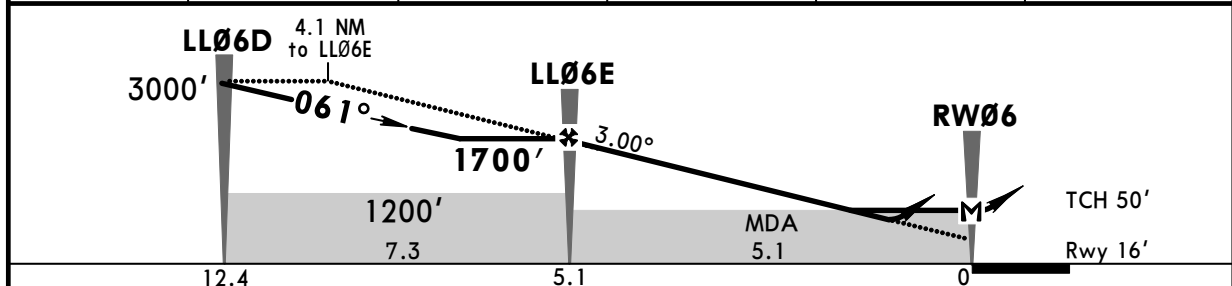
MANILA, PHILIPPINES
RNAV (GNSS) Rwy 06

BRIEFING STRIP

ATIS 126.4		MANILA Approach (R) 121.1		MANILA Tower 118.1		Ground 121.8	
RNAV	Final Apch Crs 061°	Procedure Alt LL06E 1700' (1684')	LNAV/VNAV DA(H) 410' (394')	Apt Elev 75' Rwy 16'		<div><div></div><div>6100'</div></div> <div>MSA ARP</div>	
MISSED APCH: Climb on course 061° to LL06F, turn LEFT to LL06G, to LL06H and hold at 7000'.							
Alt Set: hPa Rwy Elev: 1 hPa Trans level: FL 130 Trans alt: 11000' 1. Baro-VNAV not authorized below 0°C (32°F).							



NM to RW06	LL06E	5.0	4.0	3.0	2.0
ALTITUDE	1700'	1660'	1340'	1020'	700'



Gnd speed-Kts	70	90	100	120	140	160	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> PAPI ALS </div>	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> on </div>	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> 061° </div>	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> LL06F </div>
Descent angle	3.00°	372	478	531	637	743				
LNAV/VNAV: MAP at DA										
LNAV: MAP at RW06										

PANS OPS

STRAIGHT-IN LANDING RWY 06											
LNAV/VNAV DA(H) 410' (394')						LNAV MDA(H) 460' (444')					
ALS out						ALS out					
1.6 km						1.6 km					

RPLL/MNL
NINYO AQUINO INTL

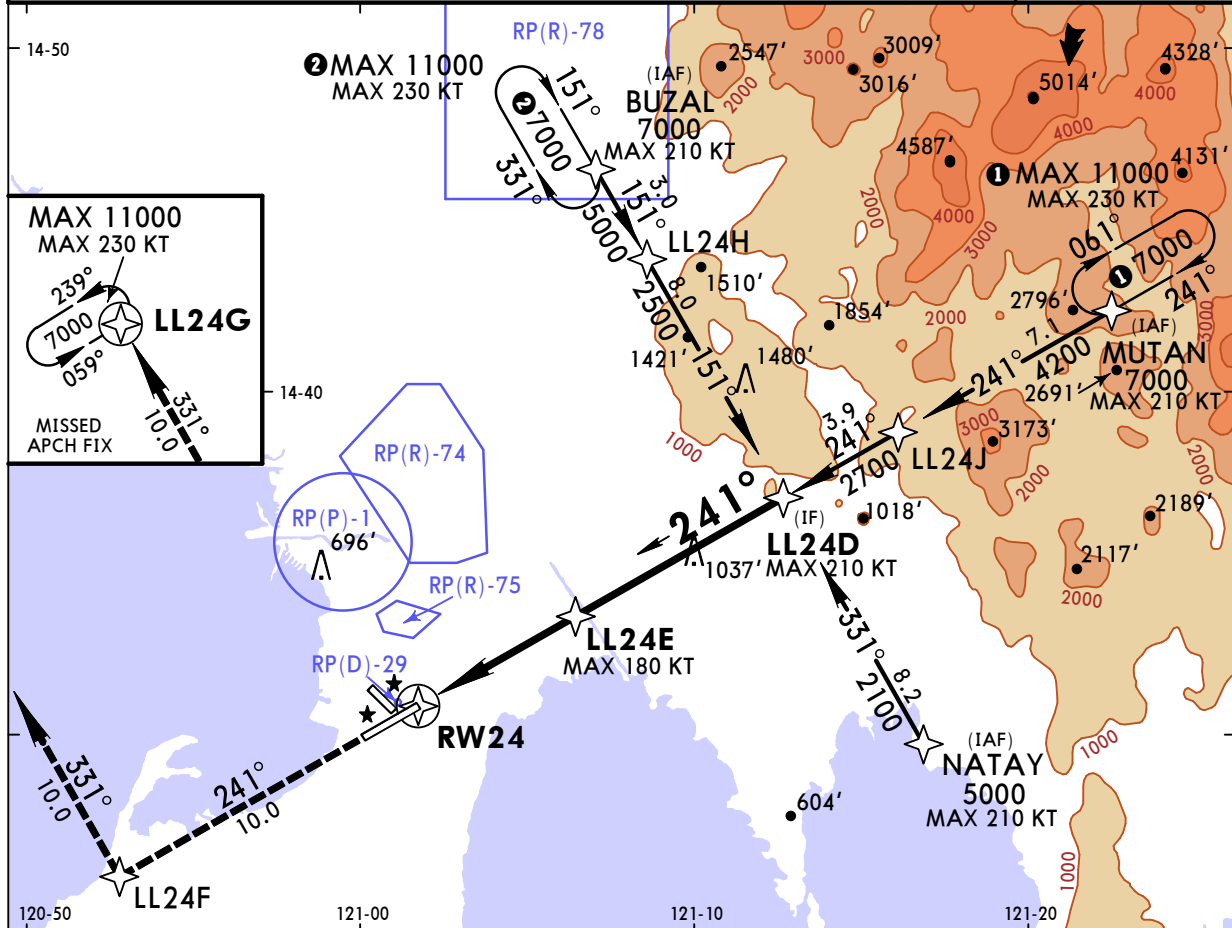
24 FEB 17

(12-2) Eff 12 Mar

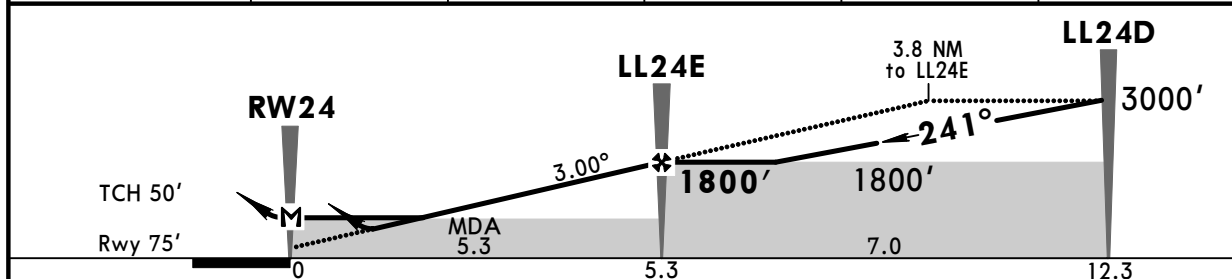
MANILA, PHILIPPINES
RNAV (GNSS) Rwy 24

BRIEFING STRIP™

ATIS 126.4	MANILA Approach (R) 121.1	MANILA Tower 118.1	Ground 121.8
RNAV	Final Apch Crs 241°	Procedure Alt LL24E 1800' (1725')	LNAV/VNAV DA(H) 680' (605')
Apt Elev 75' Rwy 75'			
MISSED APCH: Climb on course 241° to LL24F, turn RIGHT to LL24G and hold at 7000'.			
Alt Set: hPa	Rwy Elev: 3 hPa	Trans level: FL 130	Trans alt: 11000'
1. Baro-VNAV not authorized below 0°C (32°F).			
<div style="border: 1px solid black; border-radius: 50%; width: 100px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <div style="text-align: center;">6100'</div> </div> <div style="text-align: center; margin-top: 5px;">MSA ARP</div>			



NM to RW24	2.0	3.0	4.0	5.0	5.3
ALTITUDE	760'	1080'	1400'	1720'	1800'



Gnd speed-Kts	70	90	100	120	140	160	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> PAPI ALS </div>	<div style="display: flex; align-items: center;"> <div style="width: 10px; height: 10px; background-color: black; margin-right: 5px;"></div> on </div>	241°	LL24F
Descent Angle	3.00°	372	478	531	637	743				
LNAV/VNAV: MAP at DA										
LNAV: MAP at RW24										

STRAIGHT-IN LANDING RWY 24

LNAV/VNAV DA(H) 680' (605')				LNAV MDA(H) 770' (695')			
ALS out				ALS out			

PANS OPS

A	1.6 km	1.6 km
B		
C		
D		

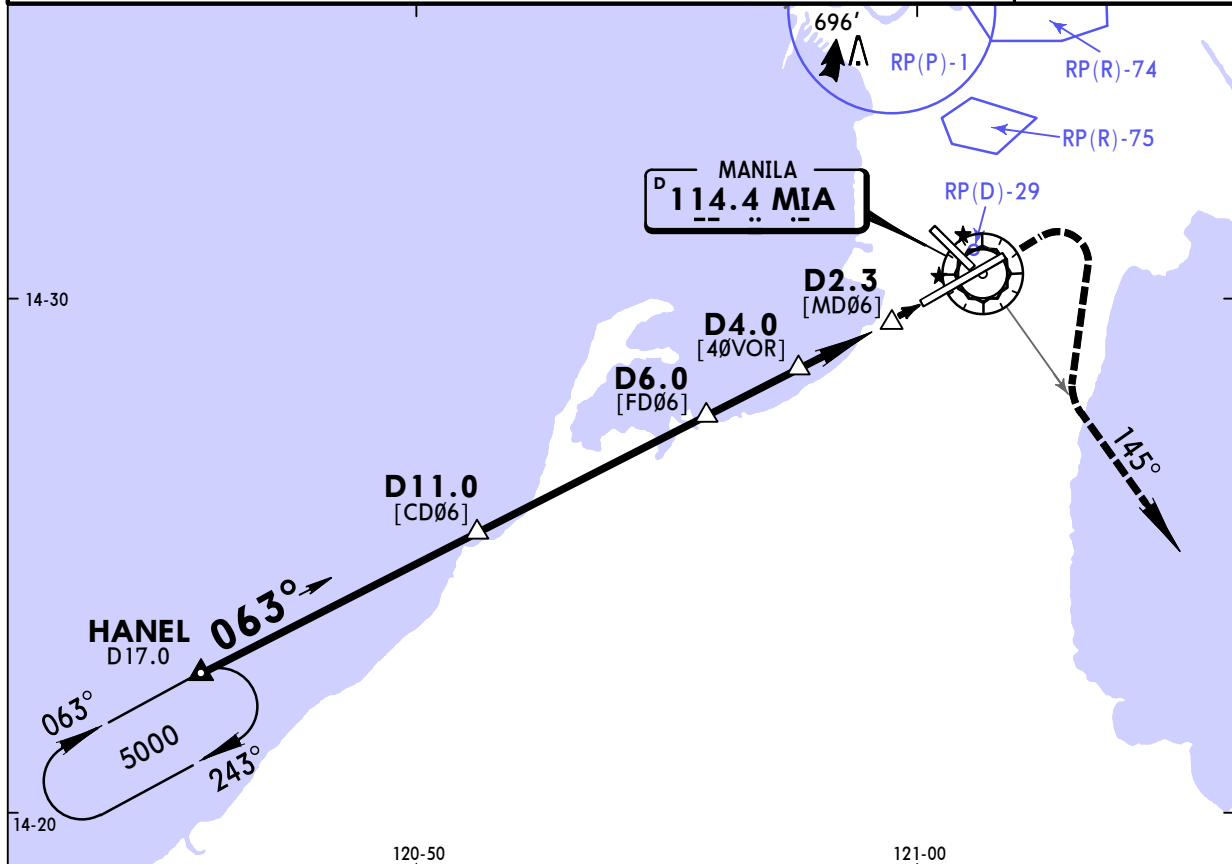
RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 FEB 17 **(13-1)** **Eff 2 Mar**

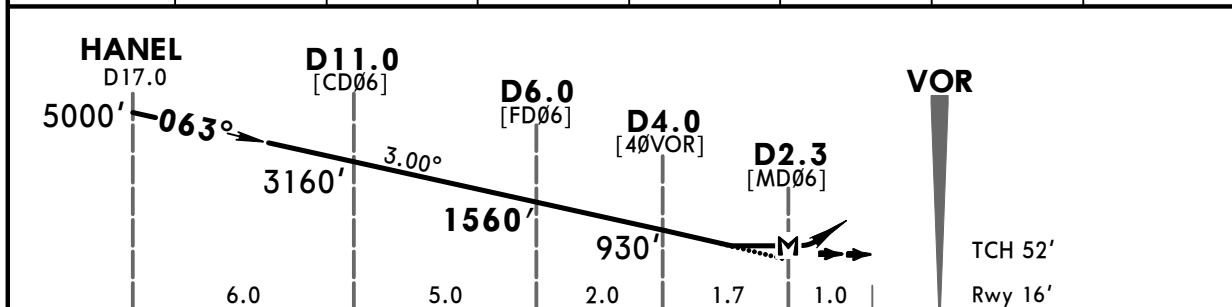
MANILA, PHILIPPINES
VOR Z Rwy 06

BRIEFING STRIP

ATIS 126.4		MANILA Approach (R) 121.1		MANILA Tower 118.1		Ground 121.8	
VOR MIA 114.4	Final Apch Crs 063°	Minimum Alt D6.0 1560' (1544')	MDA(H) 490' (474')	Apt Elev 75' Rwy 16'		MSA MIA VOR	
MISSED APCH: Climb to 1000'. Then RIGHT climbing turn to MIA VOR R-145. Return to MIA VOR at 4000' or as instructed by ATC.							
Alt Set: hPa		Rwy Elev: 1 hPa		Trans Level: FL 130			
1. DME required.				Trans alt: 11000			



MIA DME	8.0	7.0	6.0	5.0	4.0	3.0	2.6
ALTITUDE	2200'	1880'	1560'	1250'	930'	610'	490'



Gnd speed-Kts	70	90	100	120	140	160		1000' ↑		MIA 114.4 R-145
Descent Angle 3.00°	372	478	531	637	743	849				
MAP at D2.3										

PANS OPS

STRAIGHT-IN LANDING RWY06				CIRCLE-TO-LAND			
MDA(H) 490' (474')				Not Authorized North of the Field Between Rwy 13 & 24			
			ALS out	Max Kts		MDA(H)	
A	0.8 km		1.6 km	100		500' (425') - 1.9 km	
B				135		580' (505') - 2.8 km	
C	1.2 km		2.0 km	180		680' (605') - 3.7 km	
D	1.6 km		2.4 km	205		780' (705') - 4.6 km	

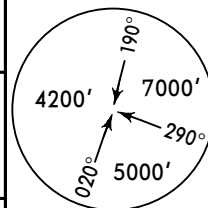
RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 FEB 17 **(13-2)** Eff 2 Mar

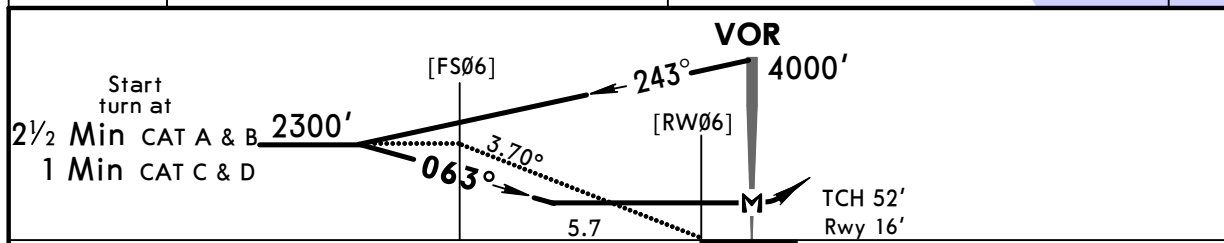
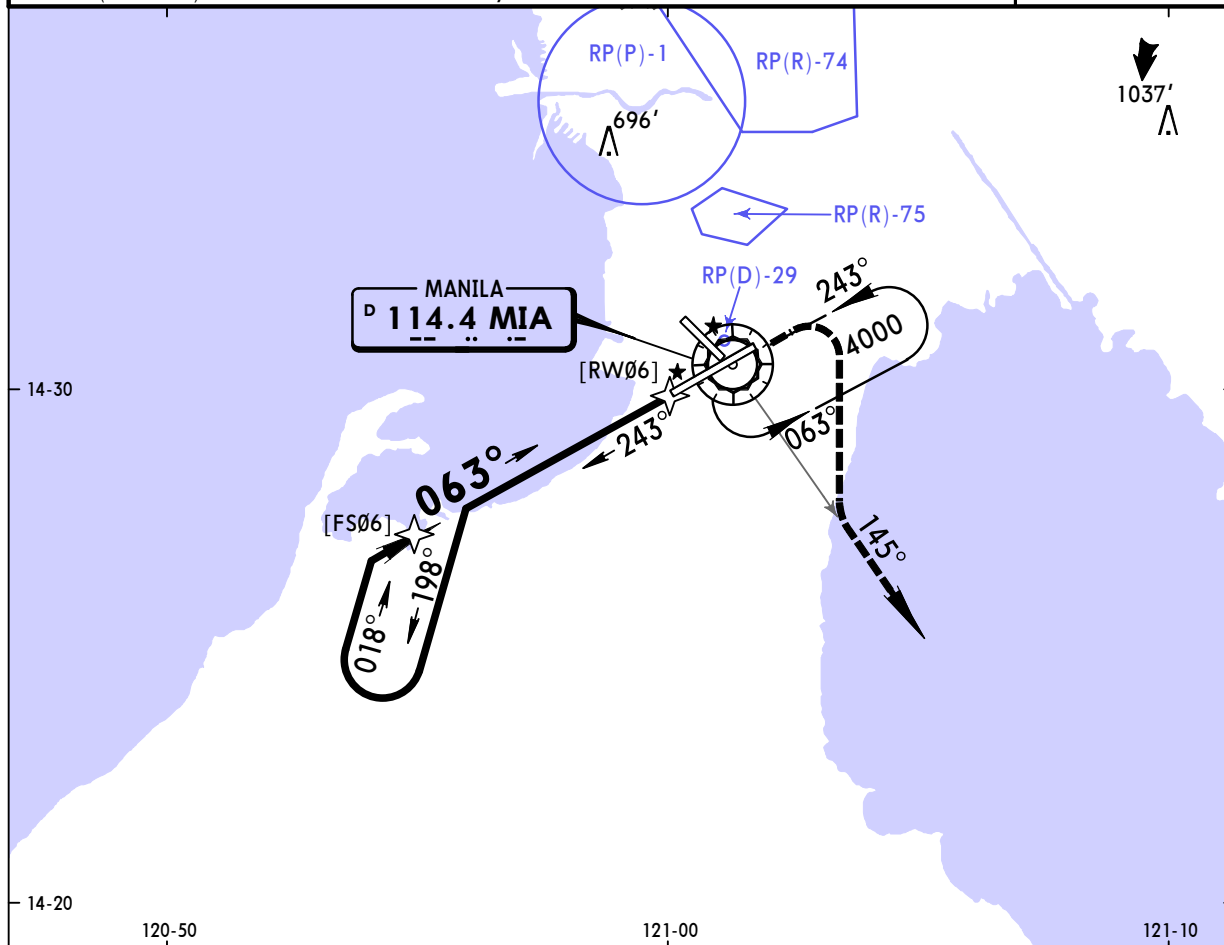
MANILA, PHILIPPINES
VOR Y Rwy 06

BRIEFING STRIP™

ATIS 126.4	MANILA Approach (R) 121.1	MANILA Tower 118.1	Ground 121.8
VOR MIA 114.4	Final Apch Crs 063°	No FAF	MDA(H) 660' (644')
Apt Elev 75' Rwy 16'			
MISSED APCH: Climb to 1000', then RIGHT climbing turn to MIA VOR R-145. Return to MIA VOR at 4000' or as instructed by ATC.			
Alt Set: hPa Rwy Elev: 1 hPa Trans level: FL 130 Trans alt: 11000' 1. Based on TAS 140 KT (still air) for Cat A & B aircraft only and based on TAS of 225 KT (still air) for Cat C & D aircraft only.			



MSA MIA VOR



Gnd speed-Kts	70	90	100	120	140	160		PAPI ALS	1000'	RT	MIA 114.4 R-145
Descent Angle 3.70°	458	589	655	786	917	1048					
MAP at VOR											

PANS OPS

STRAIGHT-IN LANDING RWY06				CIRCLE-TO-LAND			
MDA(H) 660' (644')				Not Authorized North of the Field Between Rwy 13 & 24			
ALS out				Max Kts	MDA(H)		
A	1.6 km			100	660' (585') - 1.8 km		
B	2.8 km			135	660' (585') - 2.8 km		
C	3.7 km			180	680' (605') - 3.7 km		
D				205	780' (705') - 4.6 km		

CHANGES: None.

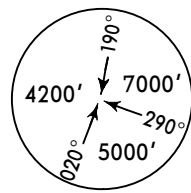
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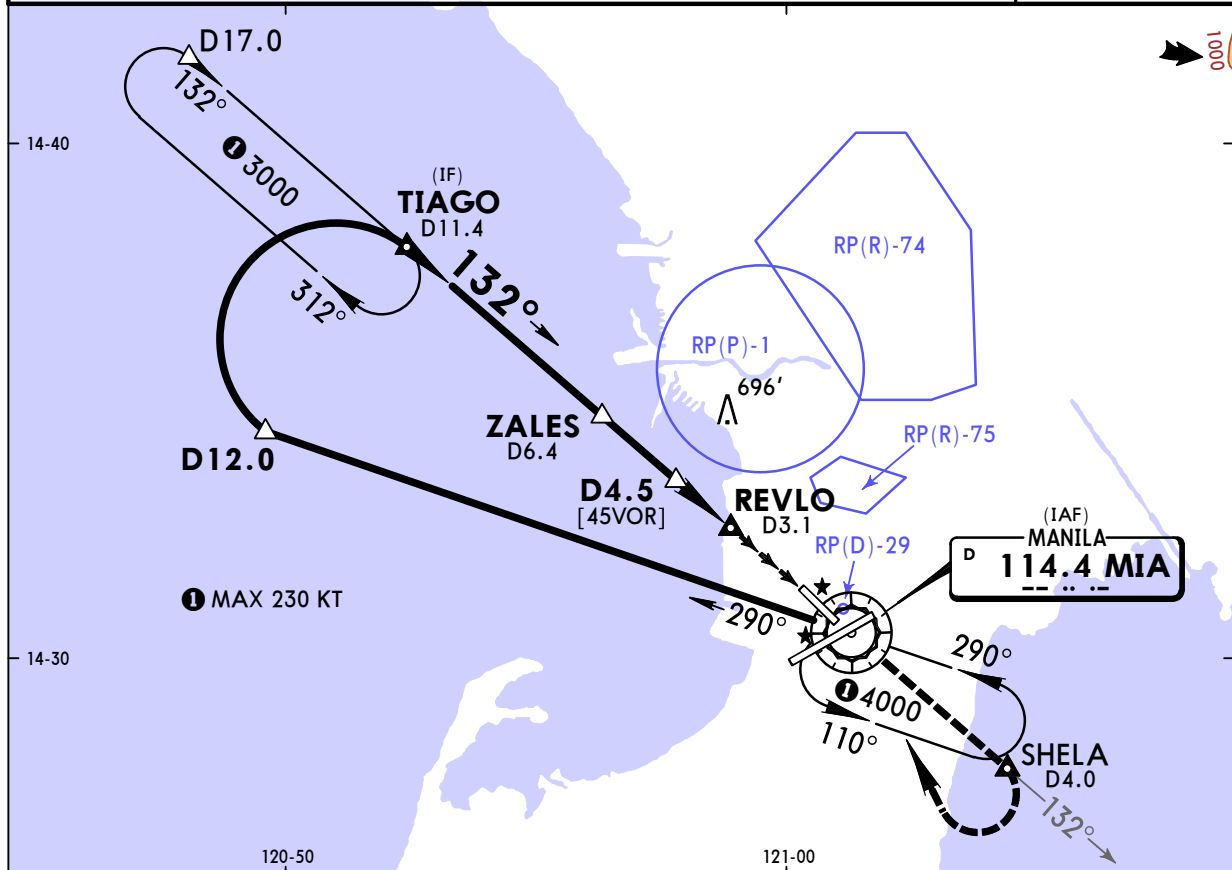
RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 FEB 17 **(13-3)** Eff 2 Mar

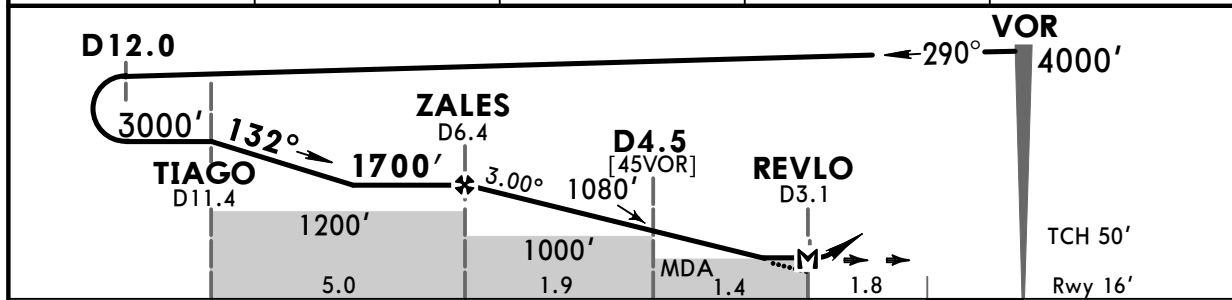
MANILA, PHILIPPINES
VOR Rwy 13
CAT A, B & C

BRIEFING STRIP

ATIS 126.4		MANILA Approach (R) 121.1		MANILA Tower 118.1		Ground 121.8
VOR MIA 114.4	Final Apch Crs 132°	Minimum Alt ZALES 1700' (1684')	MDA(H) 650' (634')	Apt Elev 75' Rwy 16'		
MISSED APCH: Climb to 4000' direct MIA VOR, then outbound via MIA VOR R-132 to SHELA, then turn RIGHT direct to MIA VOR and hold or as instructed by ATC.						
Alt Set: hPa		Rwy Elev: 1 hPa	Trans level: FL 130		Trans alt: 11000'	
1. DME required.						MSA MIA VOR



MIA DME	6.4	5.0	4.0	3.1
ALTITUDE	1700'	1244'	926'	650'



Gnd speed-Kts	70	90	100	120	140	160	REIL PAPI 4000' ↑	→ D → MIA 114.4
Descent Angle 3.00°	372	478	531	637	743	849		
MAP at REVLO								

STRAIGHT-IN LANDING RWY 13				CIRCLE-TO-LAND			
MDA(H) 650' (634')							
A	3.7 km			A	NOT APPLICABLE		
B				B			
C				C			
D	NOT APPLICABLE			D			

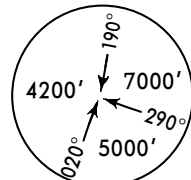
PANS OPS

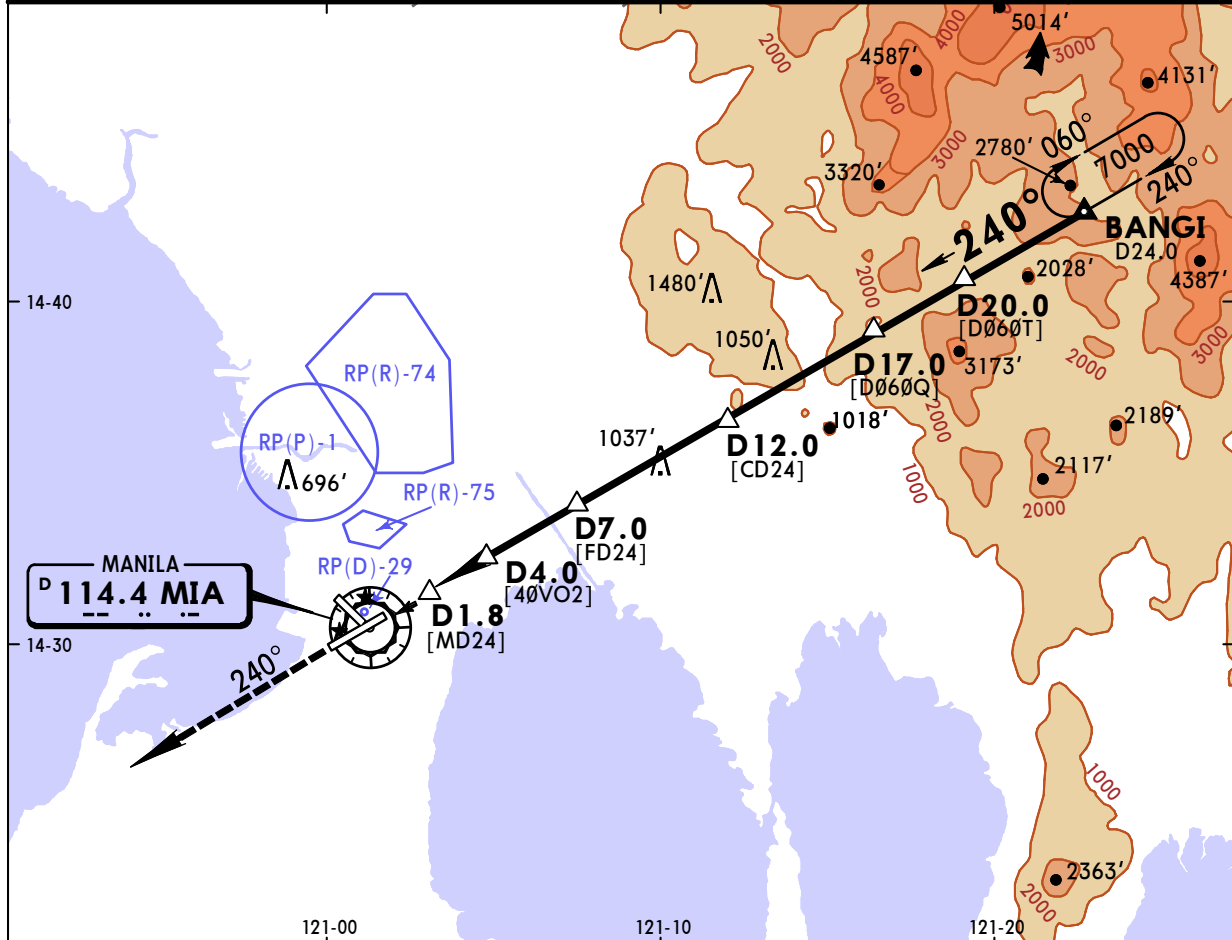
RPLL/MNL
NINYO AQUINO INTL

JEPPesen
24 FEB 17 **(13-4)** Eff 2 Mar

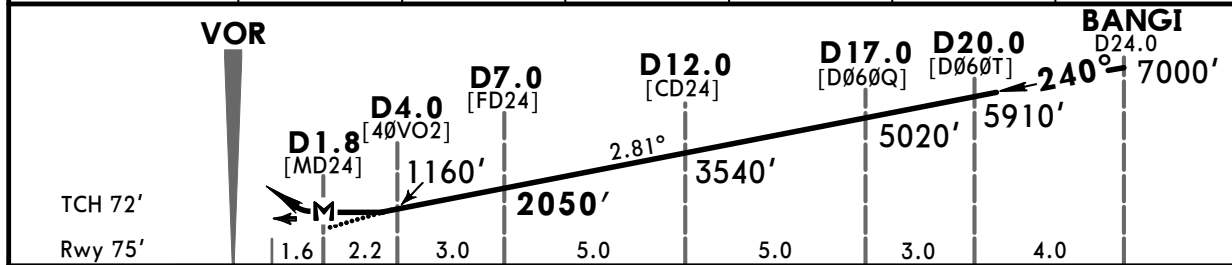
MANILA, PHILIPPINES
VOR Z Rwy 24


BRIEFING STRIP

ATIS 126.4		MANILA Approach (R) 121.1		MANILA Tower 118.1		Ground 121.8	
VOR MIA 114.4	Final Apch Crs 240°	Minimum Alt D7.0 2050' (1975')	MDA(H) 870' (795')	Apt Elev 75' Rwy 75'			
MISSED APCH: Climb outbound on MIA VOR R-240 to 4000'. Return to MIA VOR or as instructed by ATC.							
Alt Set: hPa		Rwy Elev: 3 hPa		Trans level: FL 130			
1. DME required.				Trans alt: 11000'		MSA MIA VOR	



MIA DME	3.0	4.0	5.0	6.0	7.0	8.0
ALTITUDE	870'	1160'	1450'	1750'	2050'	2350'



Gnd speed-Kts	70	90	100	120	140	160		4000' on 114.4 R-240
Descent Angle	2.81°	348	447	497	596	795		
MAP at D1.8								

STRAIGHT-IN LANDING RWY 24				CIRCLE-TO-LAND			
MDA(H) 870' (795')				Not Authorized North of the Field Between Rwy 13 & 24			
				Max Kts			
A	RVR 720 m VIS 800 m	1.6 km	100	870' (795') - 1.9 km			
B	1.2 km	2.0 km	135	1030' (955') - 2.8 km			
C	2.8 km	3.6 km	180	1130' (1055') - 3.7 km			
D	3.2 km	4.0 km	205	1130' (1055') - 4.6 km			

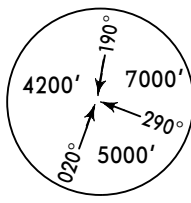
PANS OPS

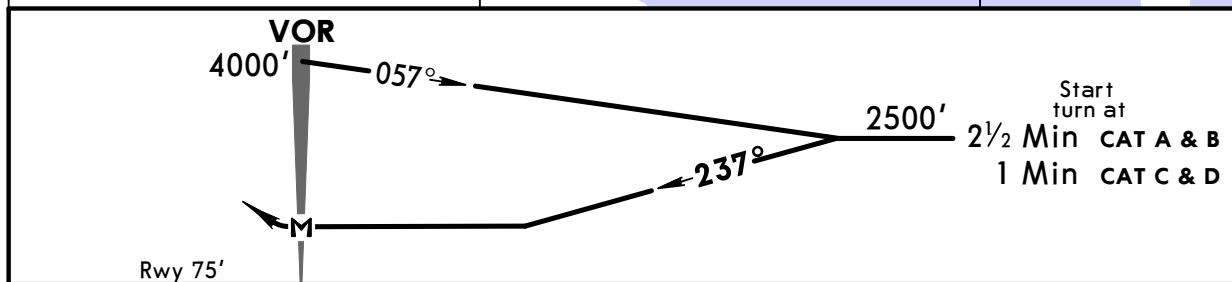
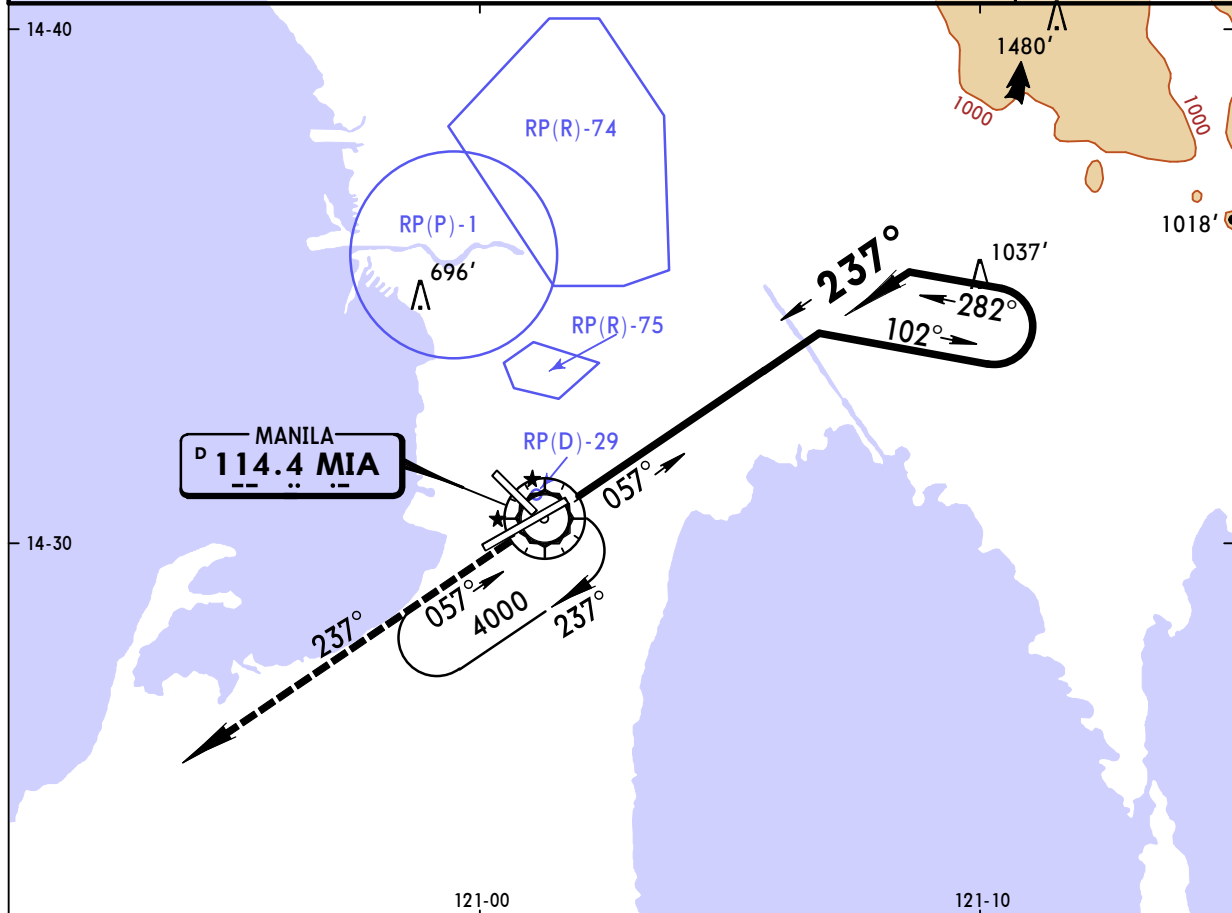
RPLL/MNL
NINYO AQUINO INTL

JEPPESEN
25 MAR 16 **(13-5)**

MANILA, PHILIPPINES
VOR Y Rwy 24

BRIEFING STRIP™

ATIS 126.4		MANILA Approach (R) 121.1		MANILA Tower 118.1		Ground 121.8	
VOR MIA 114.4	Final Apch Crs 237°	No FAF		MDA(H) 870' (795')	Apt Elev 75' Rwy 75'		 MSA MIA VOR
MISSED APCH: Climb to MIA VOR R-237 or heading 237° to 4000'. Return to MIA VOR or as instructed by ATC.							
Alt Set: hPa Rwy Elev: 3 hPa Trans level: FL 130 Trans alt: 11000'							
1. Based on TAS 140 kts (still air) for Cat A & B aircraft only and based on TAS of 225 kts (still air) for Cat C & D aircraft only.							



MAP at VOR				PAPI ALS		4000'	MIA on 114.4 R-237
------------	--	--	--	-------------	--	-------	--------------------------

STRAIGHT-IN LANDING RWY 24				CIRCLE-TO-LAND	
MDA(H) 870' (795')				Not Authorized North of the Field Between Rwy 13 & 24	
		ALS out		Max Kts	MDA(H)
A	RVR 720 m VIS 800 m	1.6 km		100	870' (795') - 1.9 km
B	1.2 km	2.0 km		135	1030' (955') - 2.8 km
C	2.8 km	3.6 km		180	1130' (1055') - 3.7 km
D	3.2 km	4.0 km		205	1130' (1055') - 4.6 km

PANS OPS

VMMC/MFM
MACAO INTL

18 OCT 13

JEPPESEN
10-1P**MACAO, PR OF CHINA**
AIRPORT B BRIEFING

1. GENERAL

1.1. ATIS

ATIS 126.4

1.2. NOISE ABATEMENT PROCEDURES**1.2.1. RUN-UP TESTS**

Engine runs above ground idle power are not permitted between 2200-0700LT. Exception may be considered case by case, depending on actual operational analyses.

An engine ground run is defined as any engine start-up not associated with the planned ACFT departure. Maintenance or test running of jet engine not mounted on an ACFT is prohibited unless performed in a test cell of adequate design.

Engine ground running at idle power for duration not exceeding 15 minutes may be conducted on ACFT parking bays with previous coordination with APT Operation Coordination Center. Extension of such limitation is subject to APT Operation Coordination Center approval depending on APT conditions. Power runs above idle for maintenance purpose must be conducted at designated areas.

Initial requests for a ground run at any time should be made by telephone to APT Operation Coordination Center. The airline or the engine tester is responsible for ensuring that all safety precautions against injury to persons or damage to properties, ACFT, vehicles, marine vessels (when the jet blast is directed towards the sea) and equipment in the vicinity are adopted. When ready to conduct the engine run, clearance from MACAO Ground on 121.72 MHz. A listening watch must be maintained on the frequency throughout the engine run. The ACFT anti-collision beacons must be activated for the entire duration and MACAO Ground should be advised on its completion.

1.3. LOW VISIBILITY PROCEDURES (LVP)

LVP will be in force whenever

- TDZ RVR of RWY 34 is 800m or below, or
- ceiling is 200' or below, or
- VIS conditions decrease rapidly.

Pilots will be informed when LVP are in use via RTF or ATIS through the message "Low Visibility Procedure in force".

1.4. PARKING INFORMATION

Advanced Visual Docking Guidance System available at stands A2, A4, B2 and B4.

1.5. OTHER INFORMATION**1.5.1. GENERAL**

RWY 34 right-hand circuit.

1.5.2. PREFERENTIAL RWY SYSTEM

The preferential RWY is RWY 34, within the limits of a wind intensity (actual and/or forecasted) of no more than 10 KT as tailwind component.

If the tailwind component for RWY 34 is higher than 10 KT and the VIS or ceiling for RWY 16 are below minima for this RWY, no landings will be allowed unless specifically requested by the pilot.

VMMC/MFM
MACAO INTL**JEPPESEN**
18 OCT 13 (10-1P1)**MACAO, PR OF CHINA**
AIRPORT B BRIEFING

2. ARRIVAL

2.1. SPEED RESTRICTIONS

MAX 250 KT below FL 110 within Hong Kong airspace, unless otherwise instructed.

MAX 190 KT during approach turns.

2.2. NOISE ABATEMENT PROCEDURES

Landing on RWY 16:

- Maintain 217° track inbound on LOC course.
- Do not deviate from ZAO R-230, which defines the northern limit for flights landing on RWY 16 due to noise abatement for Zhuhai City.
- ACFT according to ICAO Annex 16 Chapter 2 will only be considered in a case-by-case basis. For Chapter 2 Noise ACFT, operation time between 2400-0800LT is not allowed.

2.3. CAT II OPERATIONS

RWY 34 approved for CAT II operations, special aircrew and ACFT certification required.

2.4. OTHER INFORMATION

To harmonize the implementation of PBN procedures, pilots of arriving ACFT are requested to report the type of approach on their initial contact with ATC.

3. DEPARTURE

3.1. START-UP & PUSH-BACK PROCEDURES

For Color-Coded push-back procedures refer to 10-9 pages.

Contact Ground/Tower for clearance request 5 minutes prior to start-up.

Pilots have to inform Ground/Tower about their call sign, parking bay number/ location and proposed flight level if it is different from the filed flight plan when making the call.

ACFT should not commence start-up, push-back or any other manoeuvre on the apron unless pilot has obtained clearance from MACAO Ground/Tower as appropriate.

ACFT start-up engines will be allowed by Tower after the engines clear the white taxi line protection.

3.2. SPEED RESTRICTIONS

MAX 250 KT below FL 110 within Hong Kong airspace, unless otherwise instructed.

3.3. NOISE ABATEMENT PROCEDURES

Take-off on RWY 34:

- Climb offset 15° (Right) to 400', turn RIGHT.
- Do not overshoot ZAO R-230, which defines the northern limit for flights taking off on RWY 34 due to noise abatement for Zhuhai City.

VMMC/MFM
MACAO INTL

Eff 29 May

23 MAY 14

10-2

JEPPESEN

MACAO, PR OF CHINA

TERMINAL TRANSITION ROUTE

ATIS
126.4

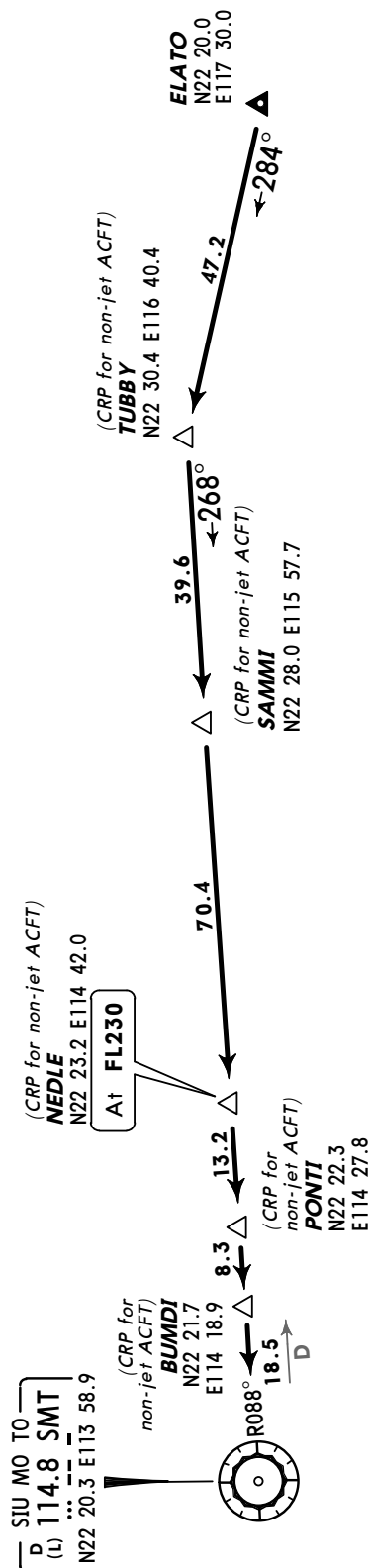
Apt Elev
20'

Alt Set: hPa
Trans level: By ATC Trans alt: 9000'

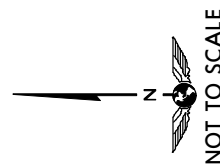
TERMINAL TRANSITION ROUTE

J101
TO SMT

HONG KONG
RADAR
121.3
128.12



DE SCEN T RE QUIRE ME NTS
If holding is required, each flight will be instructed individually. Cross NEDLE at FL230.
DO NOT DE SCEN D WITHOUT ATC CLE ARANCE .



HOLDING OVER BUMDI



VMMC/MFM
MACAO INTL

Eff 25 May

23 MAY 14

10-2A

JEPPesen

MACAO, PR OF CHINA

TERMINAL TRANSITION ROUTE

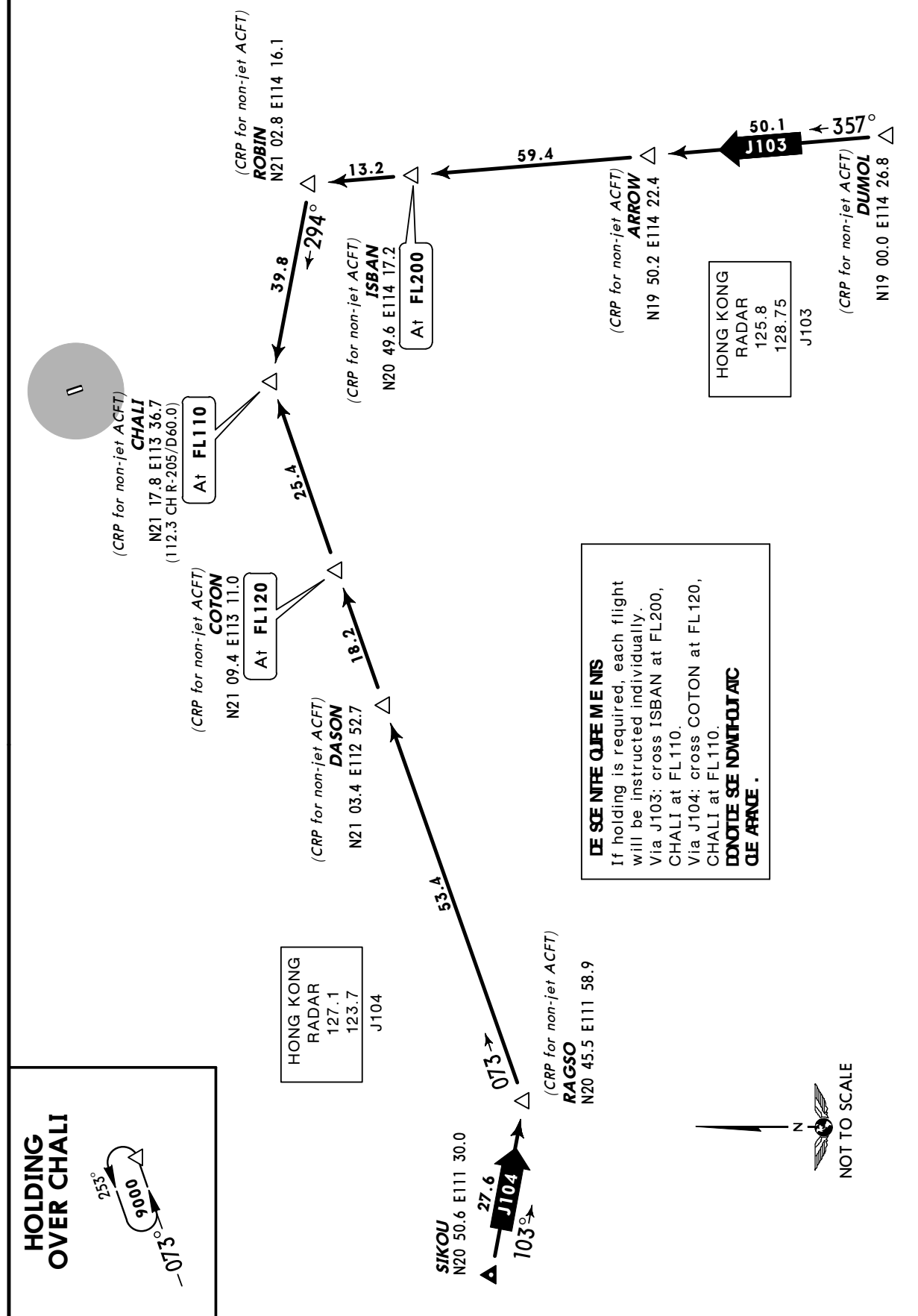
ATIS
126.4

Apt Elev
20'

Alt Set: hPa
Trans level: By ATC Trans alt: 9000'

TERMINAL TRANSITION ROUTES

**J103, J104
TO CHALI**



VMMC/MFM
MACAO INTL

JEPPESEN
23 MAY 14 **10-2B** **Eff 25 May**

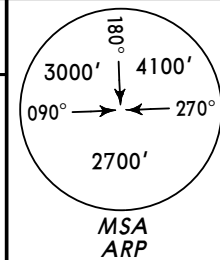
MACAO, PR OF CHINA

RNAV STAR

ATIS
126.4

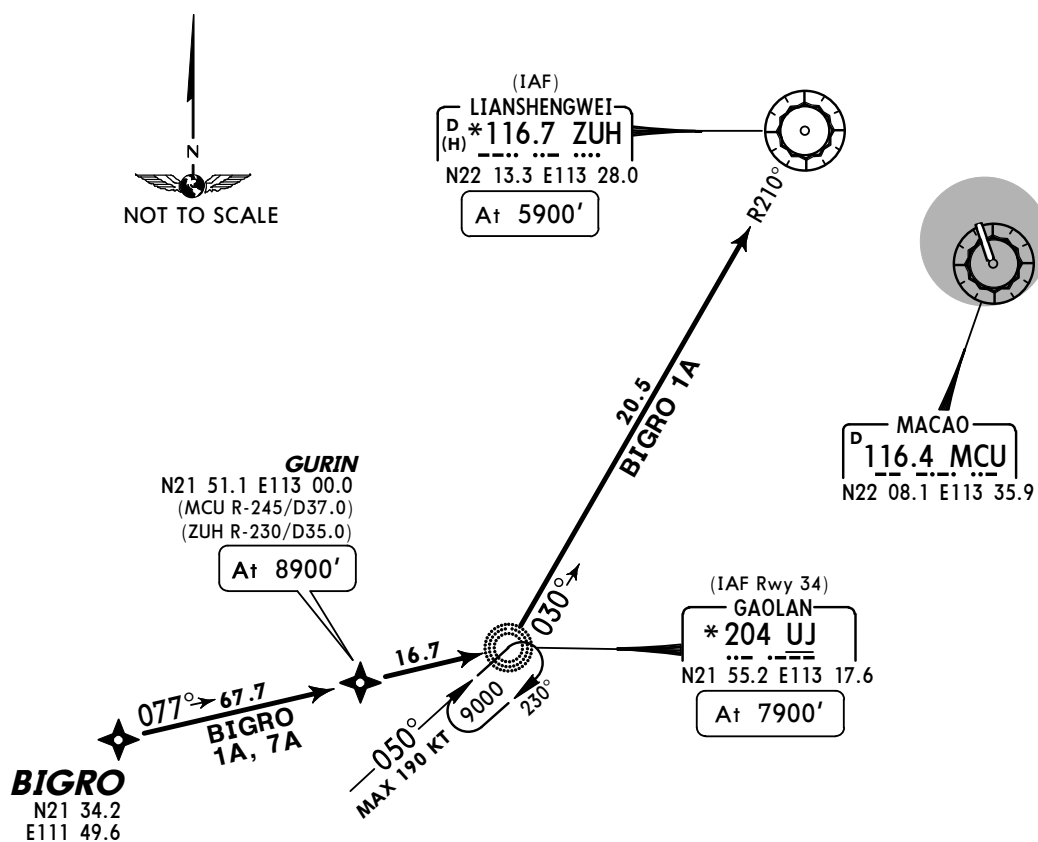
Apt Elev
20'

Alt Set: hPa
Trans level: By ATC Trans alt: 9000'



BIGRO 1A [BIGR1A]
BIGRO 7A [BIGR7A]
RWYS 16, 34 RNAV (RNP 1) ARRIVALS
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY
EQUIPPED AND APPROVED FOR RNP1 OPERATIONS
~~SPEED~~ MAX 190 KT DURING APPROACH TURNS



Direct distance to
Macao Intl from:
UJ 22 NM
ZUH 8 NM

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼
Comply with STAR, then join:
BIGRO 1A runway 16 approach.
BIGRO 7A runway 34 approach.
COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

FT/METER CONVERSION
QNH
8900' - 2700m
7900' - 2400m
5900' - 1800m

STAR	RWY	ROUTING
BIGRO 1A ①	16	To GURIN, then to UJ, then to ZUH.
BIGRO 7A ②	34	To GURIN, then to UJ.

For Non-RNP 1 approved aircraft or whose RNP 1 capability has been degraded use
non-RNAV STAR **①** BIGRO 9A/ **②** BIGRO 6A.

VMMC/MFM
MACAO INTL

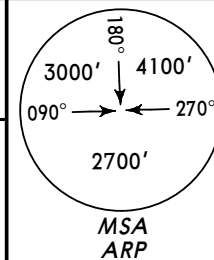
JEPPesen **MACAO, PR OF CHINA**
23 MAY 14 **10-2C** **Eff 25 May**

RNAV STAR

ATIS
126.4

Apt Elev
20'

Alt Set: hPa
Trans level: By ATC Trans alt: 9000'
If holding is required each flight will be instructed individually.

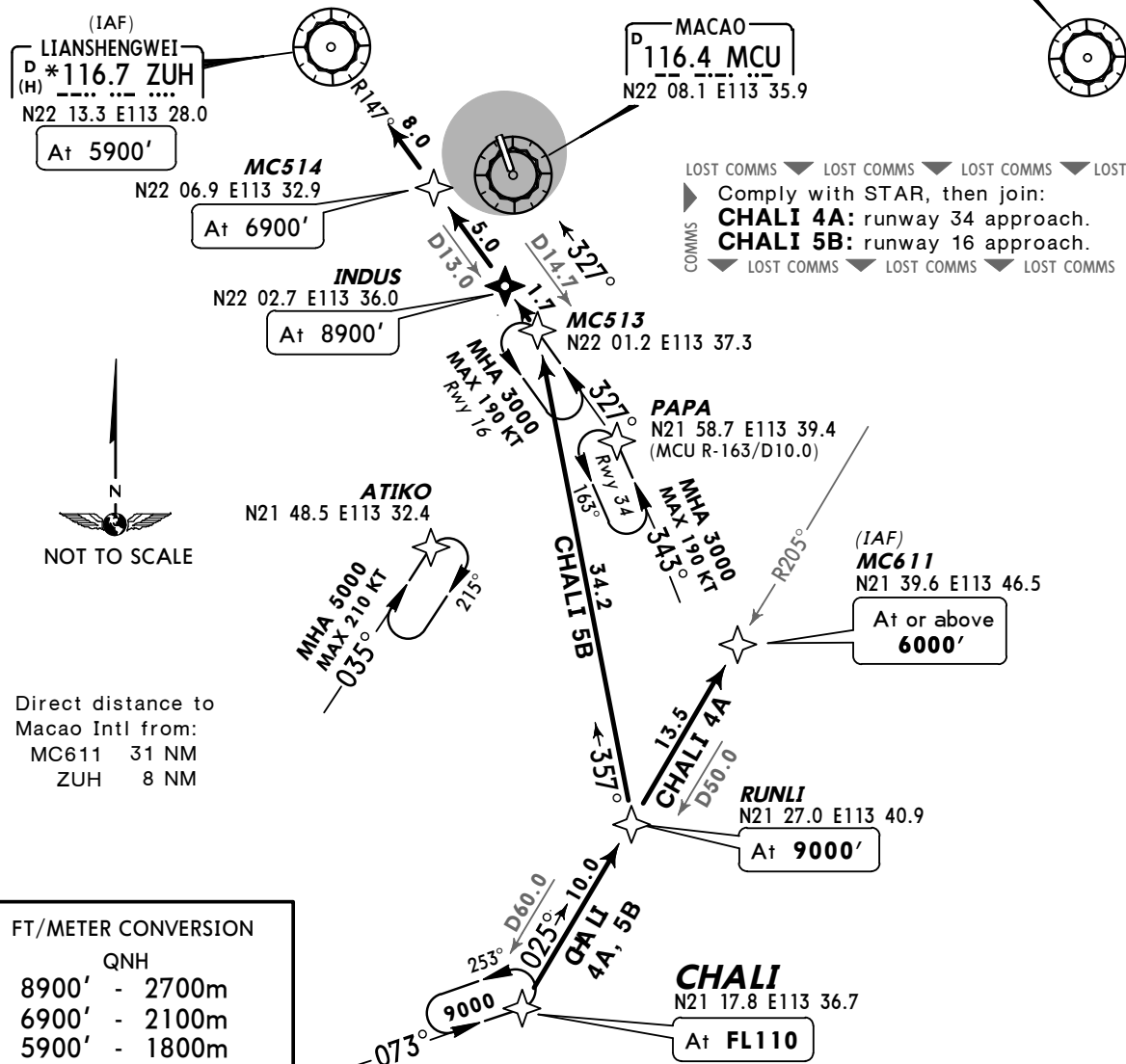


CHALI 4A [CHAL4A], CHALI 5B [CHAL5B]
RWYS 34, 16 RNAV (RNP1) ARRIVALS
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY EQUIPPED AND APPROVED FOR RNP1 OPERATIONS
FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1 CAPABILITY
HAS BEEN DEGRADED USE NON-RNAV PROCEDURE

~~SPEED~~ MAX 250 KT BELOW FL110 WITHIN
HONG KONG AIRSPACE UNLESS OTHERWISE INSTRUCTED
MAX 190 KT DURING APPROACH TURNS

CHEUNG CHAU
D **112.3 CH**
N22 13.2 E114 01.8



FT/METER CONVERSION

	QNH
8900'	- 2700m
6900'	- 2100m
5900'	- 1800m

STAR	RWY	ROUTING
CHALI 4A	34	Descent from CHALI at FL110, turn LEFT via RUNLI to MC611. Cross RUNLI at 9000' and MC611 at or above 6000' descending to 3000'. Do not descend without ATC clearance NON-RNAV: On CH R-205 inbound, intercept MCU R-163 inbound, descending from FL110 to 3000'. If MCU VOR not available: At IAF, turn LEFT, 343° track, EXPECT ILS approach.
CHALI 5B	16	Descent from CHALI at FL110, turn LEFT to RUNLI, turn LEFT to MC513, then via INDUS and MC514 to ZUH. Cross RUNLI at 9000', INDUS at 8900', MC514 at 6900' and ZUH at 5900'. Do not descend without ATC clearance NON-RNAV: Descent from CHALI at FL110 to RUNLI, turn LEFT, to MC513, intercept ZUH R-147 inbound to ZUH. Cross INDUS at 8900', D8.0 ZUH at 6900' and ZUH at 5900'.

VMMC/MFM
MACAO INTL

13 JUN 14

JEPPESEN
10-2D

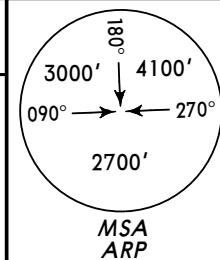
MACAO, PR OF CHINA

RNAV STAR

ATIS
126.4

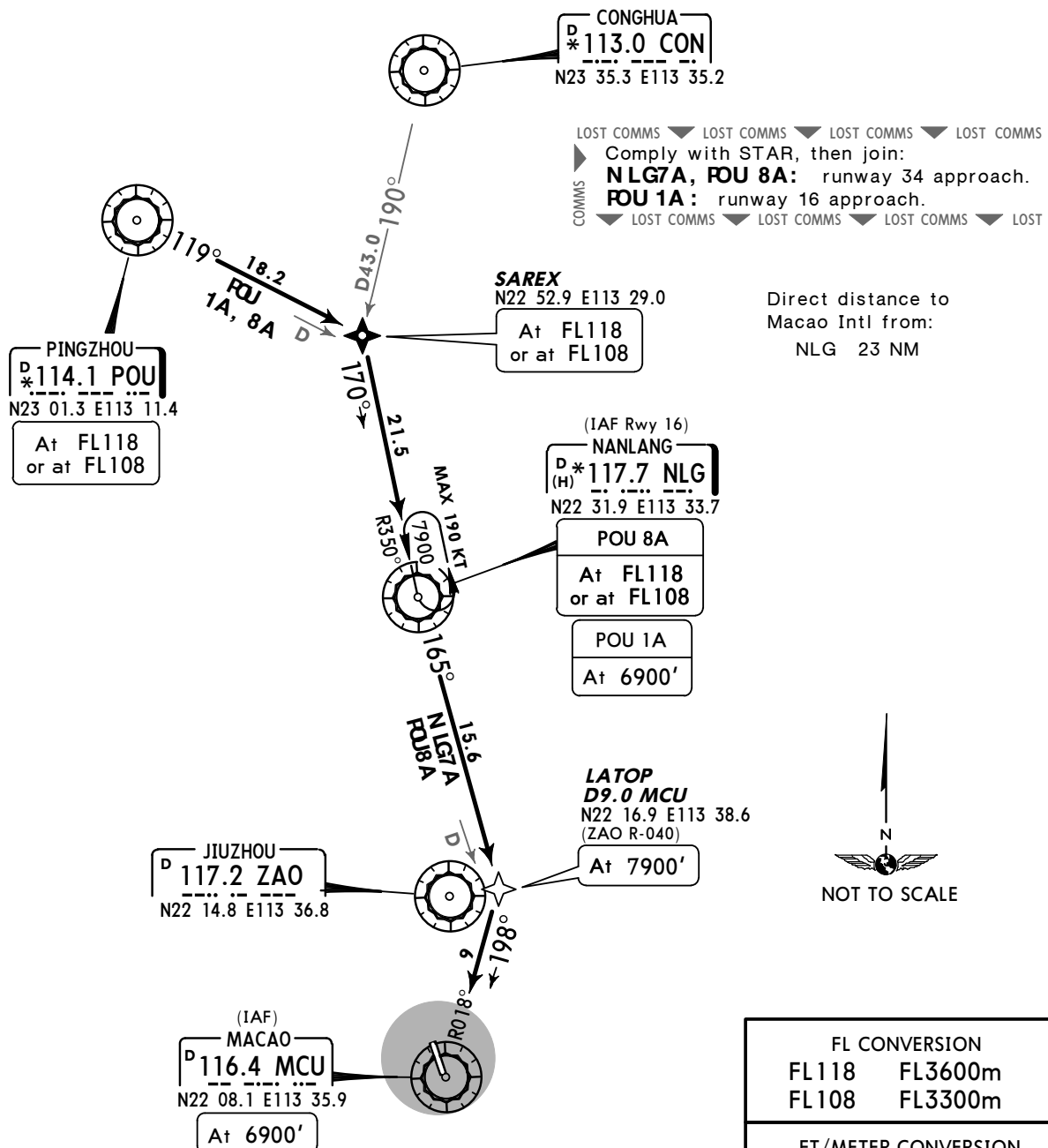
Apt Elev
20'

Alt Set: hPa
Trans level: By ATC Trans alt: 9000'



NLG 7A, POU 1A, POU 8A
RWY 34, 16 RNAV (RNP 1) ARRIVALS
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY
EQUIPPED AND APPROVED FOR RNP1 OPERATIONS
~~SPEED~~ MAX 190 KT DURING APPROACH TURNS



FL CONVERSION	
FL118	FL3600m
FL108	FL3300m
FT/METER CONVERSION	
QNH	
9000'	- 2700m
7900'	- 2400m
6900'	- 2100m

STAR	RWY	ROUTING
NLG7A ①	34	To LATOP, then to MCU.
POU 1A ②	16	To SAREX, then to NLG.
POU 8A ③	34	To SAREX, then to NLG, then to LATOP, then to MCU.

For Non-RNP 1 approved aircraft or whose RNP 1 capability has been degraded use non-RNAV STAR ① NLG 5A, 6A/ ② POU 9A/ ③ POU 6A, 7A.

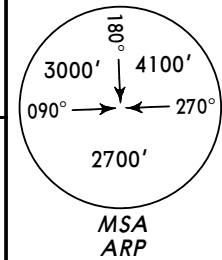
VMMC/MFM
MACAO INTL

13 JUN 14

JEPPESEN
10-2E

MACAO, PR OF CHINA

RNAV STAF

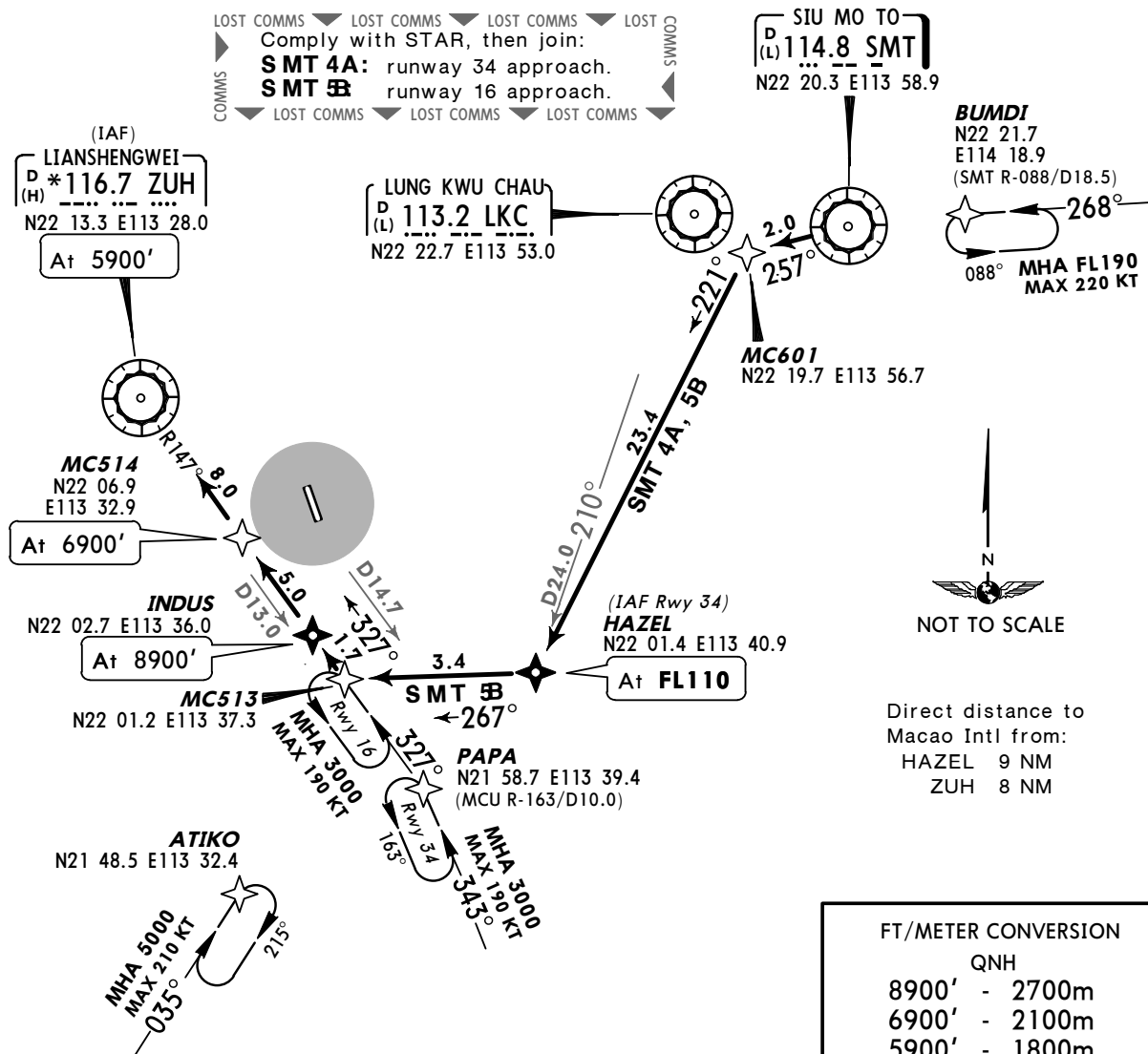
ATIS
126.4Apt Elev
20'Alt Set: hPa
Trans level: By ATC Trans alt: 9000'
If holding is required each flight will be
instructed individually.

SMT 4A, SMT 5B

RWYS 34, 16 RNAV (RNP 1) ARRIVALS

RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY
EQUIPPED AND APPROVED FOR RNP1 OPERATIONS
FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1 CAPABILITY
HAS BEEN DEGRADED USE NON-RNAV PROCEDURE
~~SPEED~~ MAX 250 KT BELOW FL110 WITHIN
HONG KONG AIRSPACE UNLESS OTHERWISE INSTRUCTED
MAX 190 KT DURING APPROACH TURNS



STAR	RWY	ROUTING
SMT 4A	34	To MC601, turn LEFT to HAZEL. Cross HAZEL at FL110. Do not descent without ATC clearance. NON- RNAV: SMT R-254 to D2.0 SMT, turn LEFT to HAZEL. Cross HAZEL at FL110.
SMT 5B	16	To MC601, turn LEFT to HAZEL, turn RIGHT to MC513, then via INDUS and MC514 to ZUH. Cross HAZEL at FL110, INDUS at 8900', MC514 at 6900' and ZUH at 5900'. Do not descent without ATC clearance. NON- RNAV: SMT R-254 to D2.0 SMT, turn LEFT to HAZEL, turn RIGHT to INDUS, then via D8.0 ZUH to ZUH. Cross HAZEL at FL110, INDUS at 8900', D8.0 ZUH at 6900' and ZUH at 5900'.

VMMC/MFM
MACAO INTL

JEPPesen
13 MAY 16 **10-2F** **Eff 28 May**

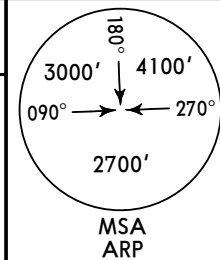
MACAO, PR OF CHINA

STAR

ATIS
126.4

Apt Elev
20'

Alt Set: hPa
Trans level: By ATC Trans alt: 9000'



BIGRO 6A [BIGR6A]

BIGRO 8A [BIGR8A]

ARRIVALS

SPEED: MAX 190 KT DURING APPROACH TURNS

NANLANG
D **117.7 NLG**
N22 31.9 E113 33.7



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼
Comply with STAR, then join:
BIGRO 6A:
ILS approach to runway 34.
BIGRO 8A:
approach to runway 16.
▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼



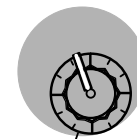
(IAF)
MC516
N22 12.8 E113 28.4
(NLG D19.6)

At **5910'**

JIUZHOU
D **117.2 ZAO**
N22 14.8 E113 36.8



MACAO
D **116.4 MCU**
N22 08.1 E113 35.9



GURIN
N21 51.1 E113 00.0
(MCU R-245/D37.0)

At **9000'**

BIGRO
N21 34.2
E111 49.6

077° → 67.7°
BIGRO 6A, 8A

(IAF Rwy 34)
GAOLAN
* **204 UJ**
N21 55.2 E113 17.6

At **7880'**

032°
050°
MAX 190 KT
9000'

Direct distance to
Macao Intl from:
MC516 8 NM
UJ 22 NM

FT/METER CONVERSION
QNH
9000' - 2700m
7880' - 2400m
5910' - 1800m

STAR	RWY	ROUTING
BIGRO 6A	34	Via GURIN to UJ.
BIGRO 8A	16	Via GURIN to UJ, turn LEFT, 032° bearing to MC516.

VMMC/MFM
MACAO INTL

JEPPESEN 13 MAY 16 **10-2G** Eff 28 May

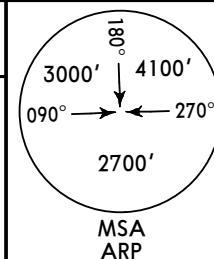
MACAO, PR OF CHINA

STAR

ATIS
126.4

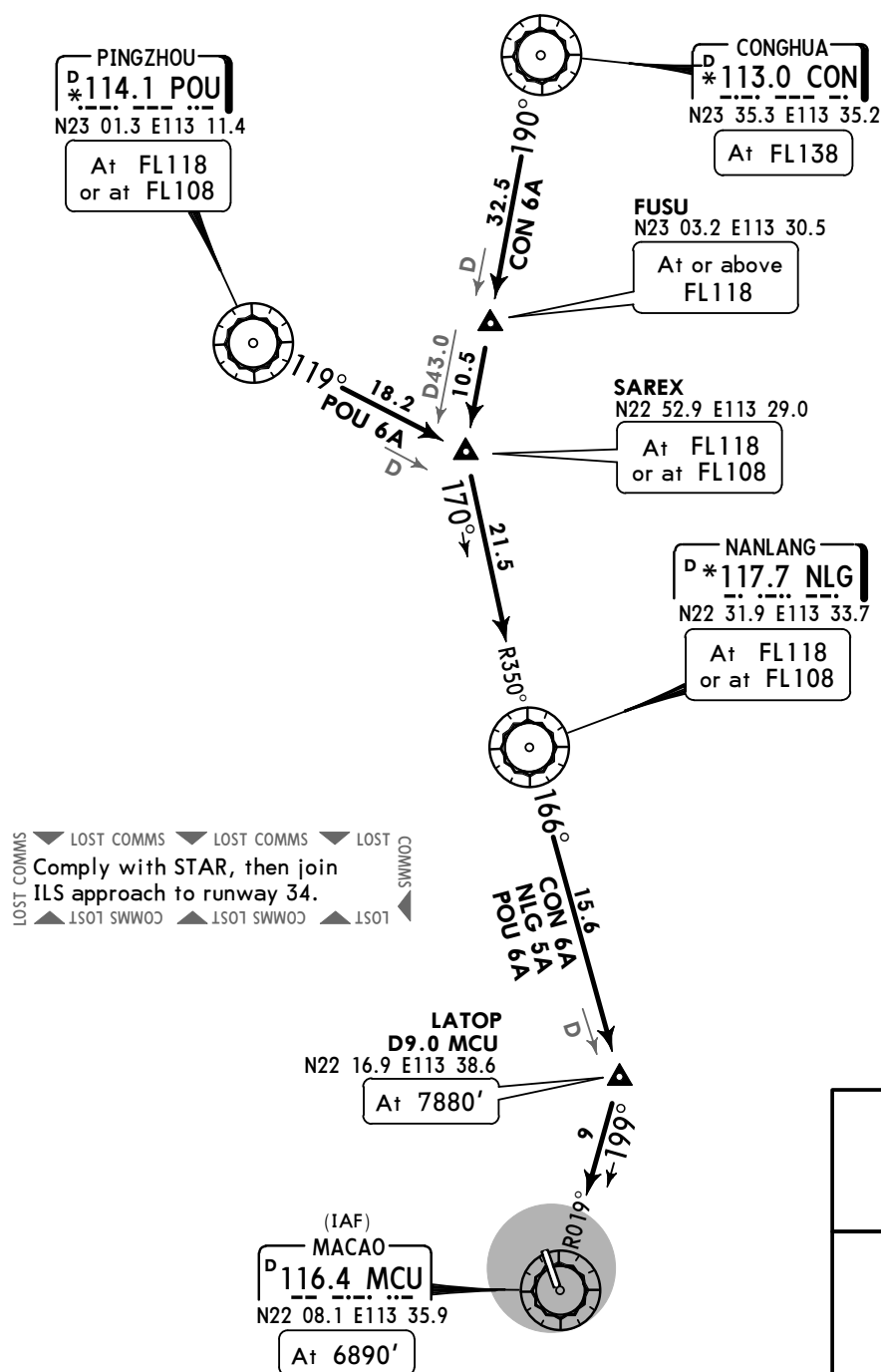
Apt Elev
20'

Alt Set: hPa
Trans level: By ATC Trans alt: 9000'



CON 6A, NLG 5A, POU 6A
RWY 34 ARRIVALS

SPEED: MAX 190 KT DURING APPROACH TURNS



FL CONVERSION	
FL 138	FL 4200m
FL 118	FL 3600m
FL 108	FL 3300m

FT/METER CONVERSION	
QNH	
9000'	- 2700m
7880'	- 2400m
6890'	- 2100m

STAR	ROUTING
CON 6A IF MCU u/s REQUEST CON 7A	CON R-190 via FUSU to SAREX, turn LEFT, intercept NLG R-350 inbound to NLG, NLG R-166 to LATOP, intercept MCU R-019 inbound to MCU.
NLG 5A IF MCU u/s REQUEST NLG 6A	NLG R-166 to D9.0 MCU, intercept MCU R-019 inbound to MCU.
POU 6A IF MCU u/s REQUEST POU 7A	POU R-119 to SAREX, turn RIGHT, intercept NLG R-350 inbound to NLG, NLG R-166 to LATOP, intercept MCU R-019 inbound to MCU.

VMMC/MFM
MACAO INTL

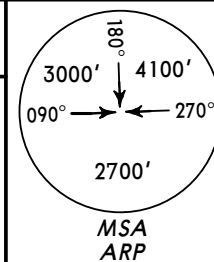
JEPPESEN **MACAO, PR OF CHINA**
23 MAY 14 **10-2H** **10 May**

SA

ATIS
126.4

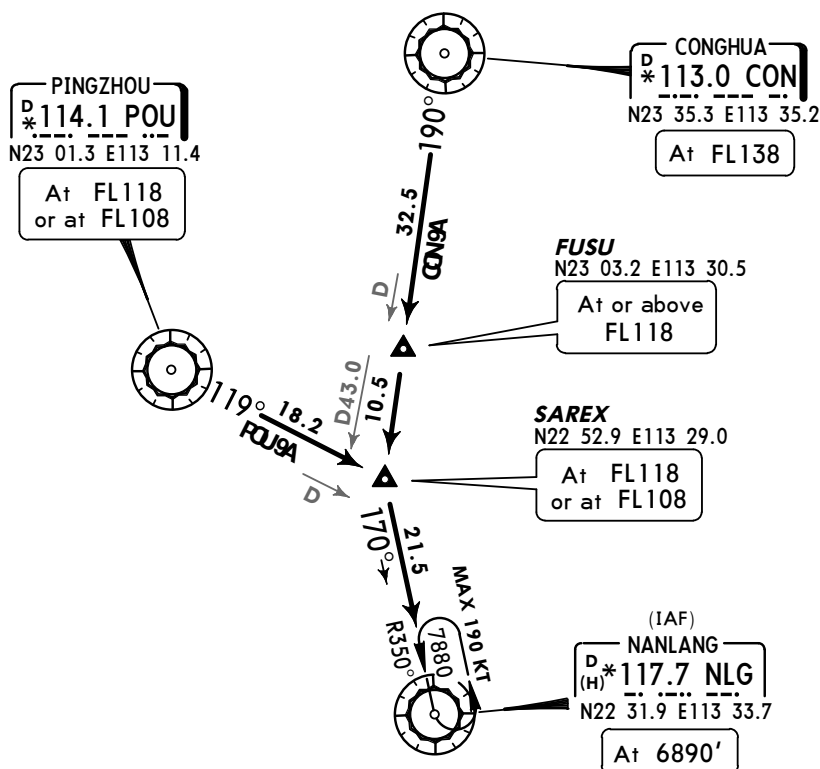
Apt Elev
20'

Alt Set: hPa
Trans level: By ATC Trans alt: 9000'



CON 9A, POU 9A
RWY 16 ARRIVALS

SPEED: MAX 190 KT DURING APPROACH TURNS



FL CONVERSION	
FL138	FL4200m
FL118	FL3600m
FL108	FL3300m

FT/METER CONVERSION	
QNH	
9000'	- 2700m
7880'	- 2400m
6890'	- 2100m

STAR	ROUTING
CON9A	CON R-190 via FUSU to SAREX, turn LEFT, intercept NLG R-350 inbound to NLG.
POU9A	POU R-119 to SAREX, turn RIGHT, intercept NLG R-350 inbound to NLG.

VMMC/MFM
MACAO INTL

JEPPESEN 23 MAY 14 **10-2J** Eff 29 May

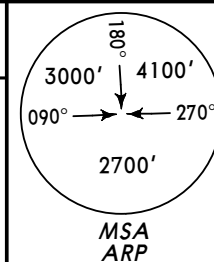
MACAO, PR OF CHINA

STAR

ATIS
126.4

Apt Elev
20'

Alt Set: hPa
Trans level: By ATC Trans alt: 9000'

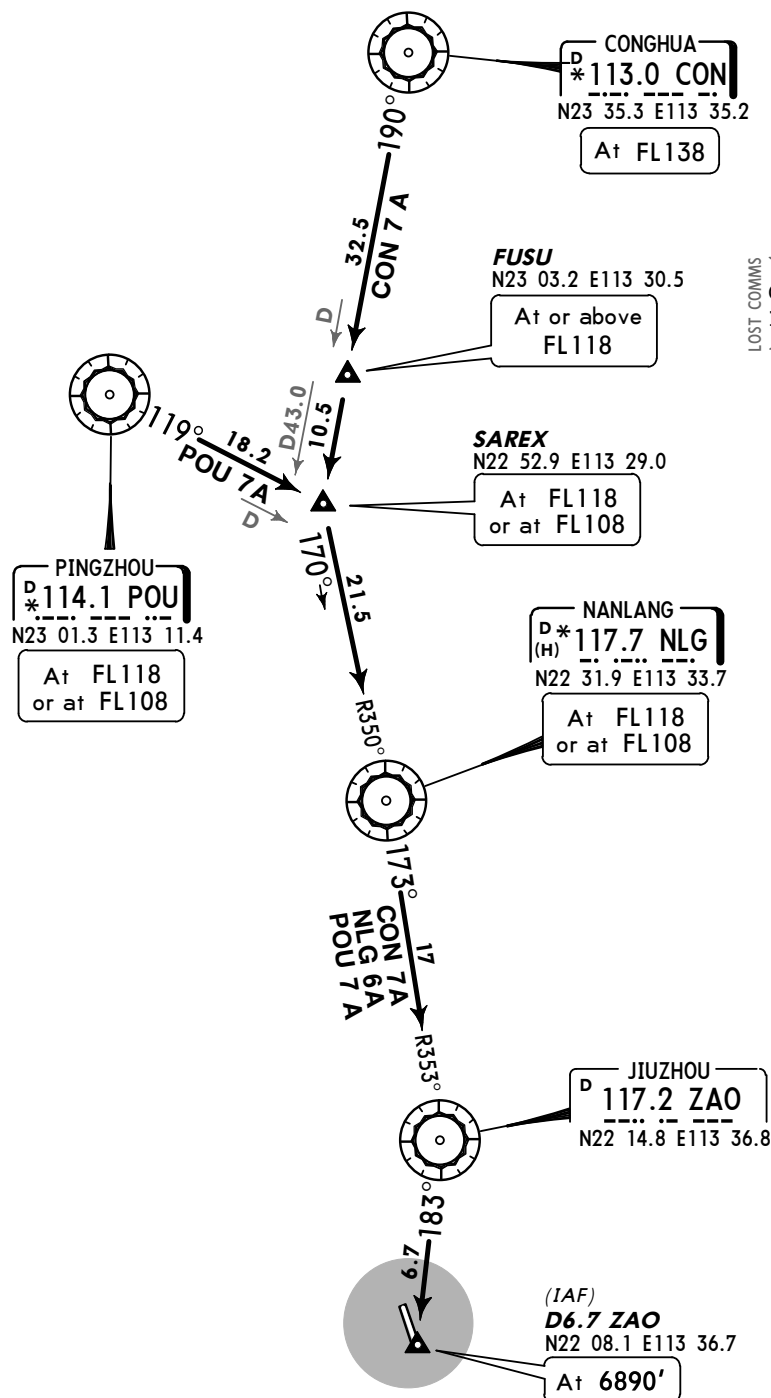


CON 7A, NLG 6A, POU 7A

RWY 34 ARRIVALS

TO BE USED WHEN MCU U/S

~~SPEED~~ MAX 190 KT DURING APPROACH TURNS



LOST COMMS
Comply with STAR, then join
ILS approach to runway 34.

FL CONVERSION

FL138	FL4200m
FL118	FL3600m
FL108	FL3300m

FT/METER CONVERSION

QNH	
9000'	- 2700m
6890'	- 2100m



STAR

R ROUTING

CON 7A	CON R-190 via FUSU to SAREX, turn LEFT, intercept NLG R-350 inbound to NLG, NLG R-173 to ZAO, ZAO R-183 to D6.7 ZAO.
NLG 6A	NLG R-173 to ZAO, ZAO R-183 to D6.7 ZAO.
POU 7A	POU R-119 to SAREX, turn RIGHT, intercept NLG R-350 inbound to NLG, NLG R-173 to ZAO, ZAO R-183 to D6.7 ZAO

VMMC/MFM
MACAO INTL **JEPPESEN**
13 MAY 16 **10-3** **Eff 26 May****MACAO, PR OF CHINA****RNAV SID**

RNAV SID DESIGNATION	REFER TO CHART
ALLEY 2P	10-3B
ALLEY 2T	10-3C
ALLEY 2U	10-3D
BIGRO 2D, 7D	10-3E
CONGA 2P	10-3F
CONGA 2T	10-3G
CONGA 3U	10-3H
GRUPA 2P	10-3J
GRUPA 2T	10-3K
GRUPA 3U	10-3L
MIPAG 2D, NLG 2D	10-3M
MIPAG 7D, NLG 7D	10-3N
SHL 2D	10-3P
SHL 7D	10-3Q
SOUSA 2P	10-3S
SOUSA 3T	10-3T
SOUSA 3U	10-3U

FOR SID DESIGNATION &
TERMINAL TRANSITION ROUTE REFER TO PAGE 10-3A

VMMC/MFM
MACAO INTL **JEPPESEN**
13 MAY 16 **10-3A** **Eff 26 May****MACAO, PR OF CHINA****SID**

SID DESIGNATION	REFER TO CHART
ALLEY 1V, 1W	10-3V
BIGRO 1D	10-3V1
BIGRO 4D, 9D	10-3V2
BIGRO 8D	10-3V3
CONGA 1V, 2W	10-3V4
GRUPA 1V, 2W	10-3W
MIPAG 1D, NLG 1D	10-3X
MIPAG 5D, 9D, NLG 5D, 9D	10-3X1
MIPAG 6D, NLG 6D	10-3X2
SHL 1D	10-3X3
SHL 5D, 9D	10-3X4
SHL 6D	10-3X5
SOUSA 2V, 2W	10-3X6
TERMINAL TRANSITION ROUTE	REFER TO CHART
V1, V2, V3, V13	10-3X7
V4, V5, V10, V31, V32	10-3X8

VMMC/MFM
MACAO INTL

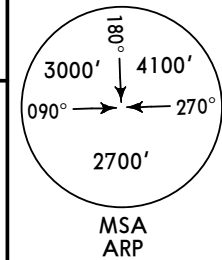
JEPPESSEN
10 JUL 15 **10-3B** **Eff 23 Jul**

MACAO, PR OF CHINA

RNAV SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



ALLEY 2P [ALEY2P]
RWY 16 RNAV (RNP 1) DEPARTURE
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY
EQUIPPED AND APPROVED FOR RNP1 OPERATIONS
FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1 CAPABILITY
HAS BEEN DEGRADED USE CONVENTIONAL PROCEDURE

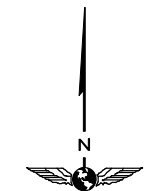
SPEED: MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE

MACAO
D 116.4 MCU
N22 08.1 E113 35.9

PAPA
N21 58.7 E113 39.4
(MCU R-163/D10.0)

At 4000'

EXPECT further
climb when
instructed by ATC



NOT TO SCALE

FT/METER CONVERSION
QNH

4000' - 1220m
9000' - 2700m

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼
Comply with last acknowledged
clearance up to the next reporting
point, then climb to flight planned
cruising level and follow the flight
planned route to join the appropriate
airway.
SWWOC 1501 ▲ SWWOC 1501 ▲ SWWOC 1501 ▲

MULET
N21 35.0 E113 47.9
(MCU R-163/D35.0)

ALLEY
N21 05.2 E113 47.2
(112.3 CH R-193/D69.1)
(116.1 TD R-204/D75.0)

ROUTING

Climb on 163° track to PAPA, then to MULET, then to ALLEY, continue on terminal transition routes.

NON- RNAV: Intercept MCU R-163 to PAPA, further climb when instructed by ATC, EXPECT RADAR vectors to ALLEY.

If MCU u/s climb straight ahead to 4000', then direct to MULET, EXPECT RADAR vectors to ALLEY.

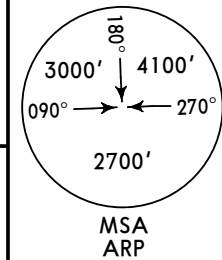
VMMC/MFM
MACAO INTLJEPPesen
10 JUL 15 10-3C Eff 23 Jul

MACAO, PR OF CHINA

RNAV SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots towards Hong Kong shall follow the SID until LKC. Any deviation could result in direct conflict with Hong Kong traffic.



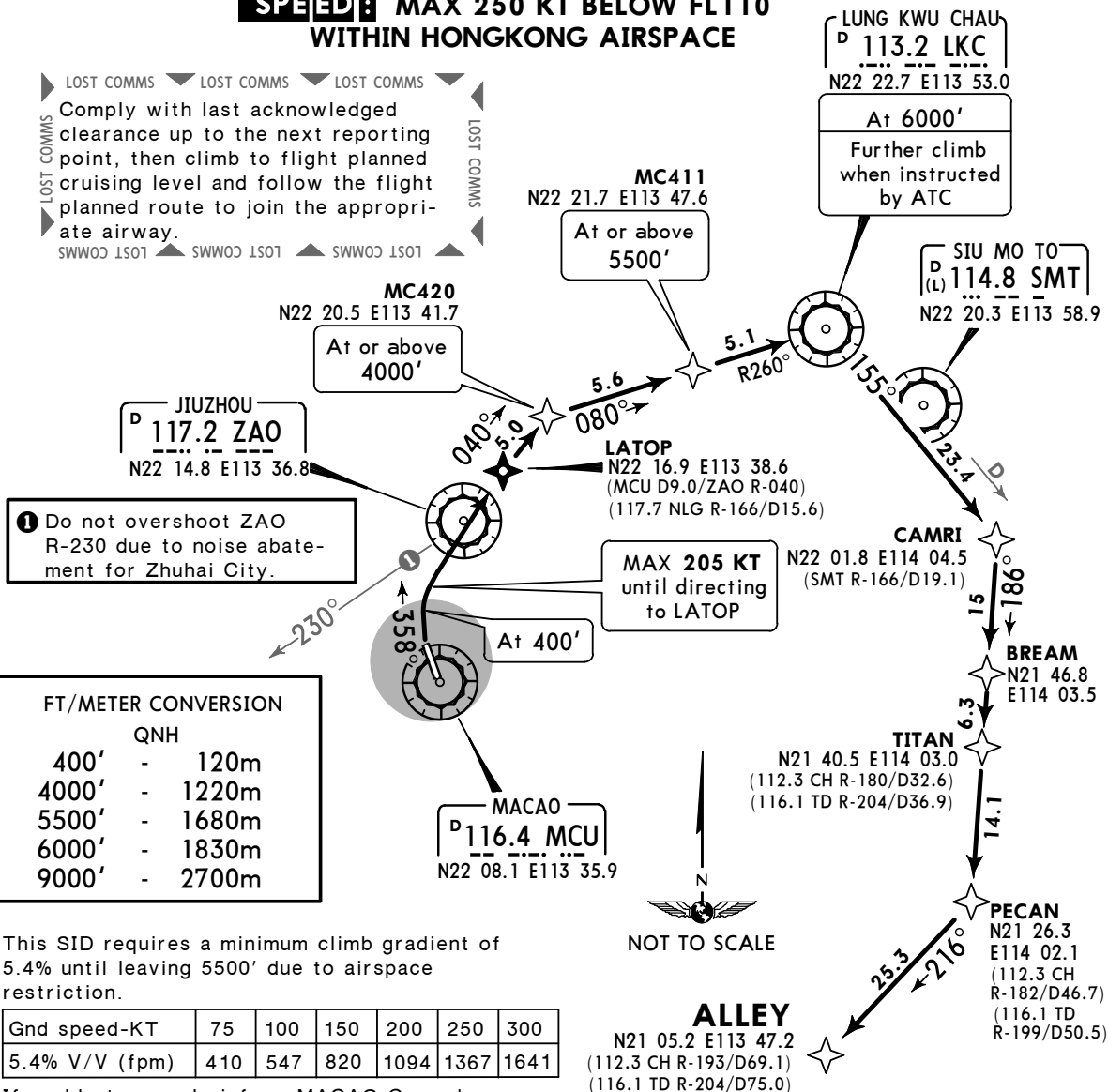
ALLEY 2T [ALEY2T] RWY 34 RNAV (RNP 1) DEPARTURE RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY EQUIPPED AND APPROVED FOR RNP1 OPERATIONS
FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1 CAPABILITY
HAS BEEN DEGRADED USE CONVENTIONAL PROCEDURE

IF LKC U/S REQUEST ALLEY 1V

**SPEED: MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE**

LOST COMMS
Comply with last acknowledged clearance up to the next reporting point, then climb to flight planned cruising level and follow the flight planned route to join the appropriate airway.
SWW00 1501 SWW00 1501 SWW00 1501



FT/METER CONVERSION

	QNH
400'	- 120m
4000'	- 1220m
5500'	- 1680m
6000'	- 1830m
9000'	- 2700m

This SID requires a minimum climb gradient of 5.4% until leaving 5500' due to airspace restriction.

Gnd speed-KT	75	100	150	200	250	300
5.4% V/V (fpm)	410	547	820	1094	1367	1641

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn until directing to LATOP.

ROUTING

Climb on 358° track to 400', turn RIGHT, direct to LATOP, turn RIGHT to MC420, then via MC411 to LKC, then to CAMRI, then via BREAM and TITAN to PECAN, then to ALLEY, continue on terminal transition routes.

NON- RNAV: Climb on 358° track to 400', turn RIGHT to ZAO, intercept ZAO R-040, climbing to 4000', at D11.5 LKC/D12.5 MCU turn RIGHT, intercept LKC R-259 inbound LKC to cross D5.0 LKC at 5500' and LKC at 6000', further climb when instructed by ATC, EXPECT RADAR vectors to ALLEY.

If ZAO u/s on 358° track to MCU 3.3 DME, turn RIGHT, 040° track to MCU 13.1 DME (LKC 11.4 DME), cross at 4000', turn RIGHT, intercept LKC R-259 inbound LKC to cross D5.0 LKC at 5500' and LKC at 6000', further climb when instructed by ATC, EXPECT RADAR vectors to ALLEY.

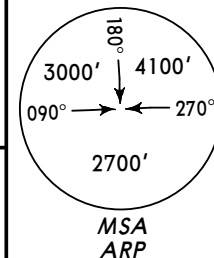
VMMC/MFM
MACAO INTLJEPPesen
24 JAN 14 10-3D Eff 6 Feb

MACAO, PR OF CHINA

RNAV SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots towards Hong Kong shall follow the SID until LKC. Any deviation could result in direct conflict with Hong Kong traffic.

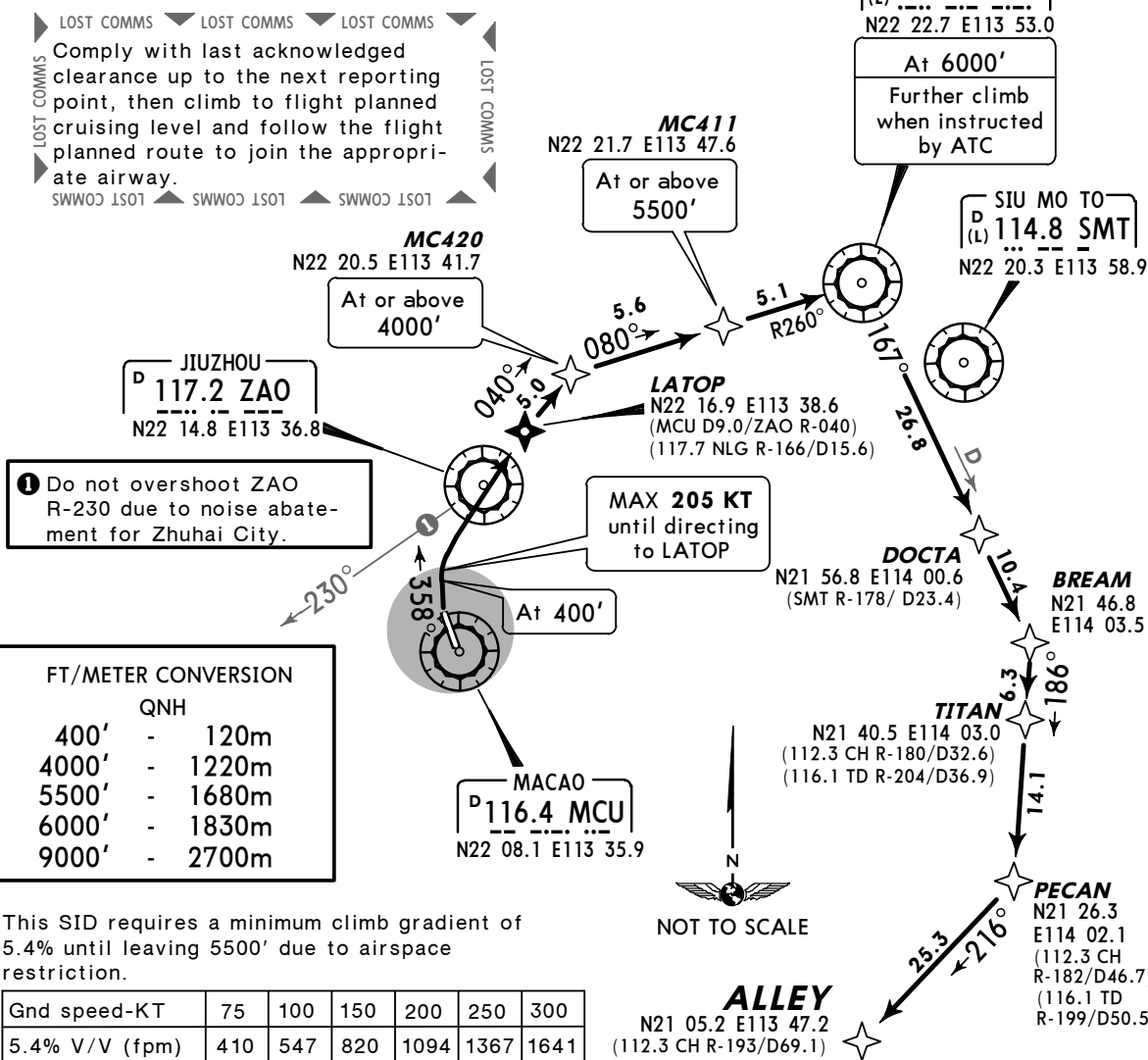


ALLEY 2U [ALEY2U] RWY 34 RNAV (RNP 1) DEPARTURE RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY EQUIPPED AND APPROVED FOR RNP1 OPERATIONS
FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1 CAPABILITY
HAS BEEN DEGRADED USE CONVENTIONAL PROCEDURE

IF LKC U/S REQUEST ALLEY 1W

**SPEED MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE**

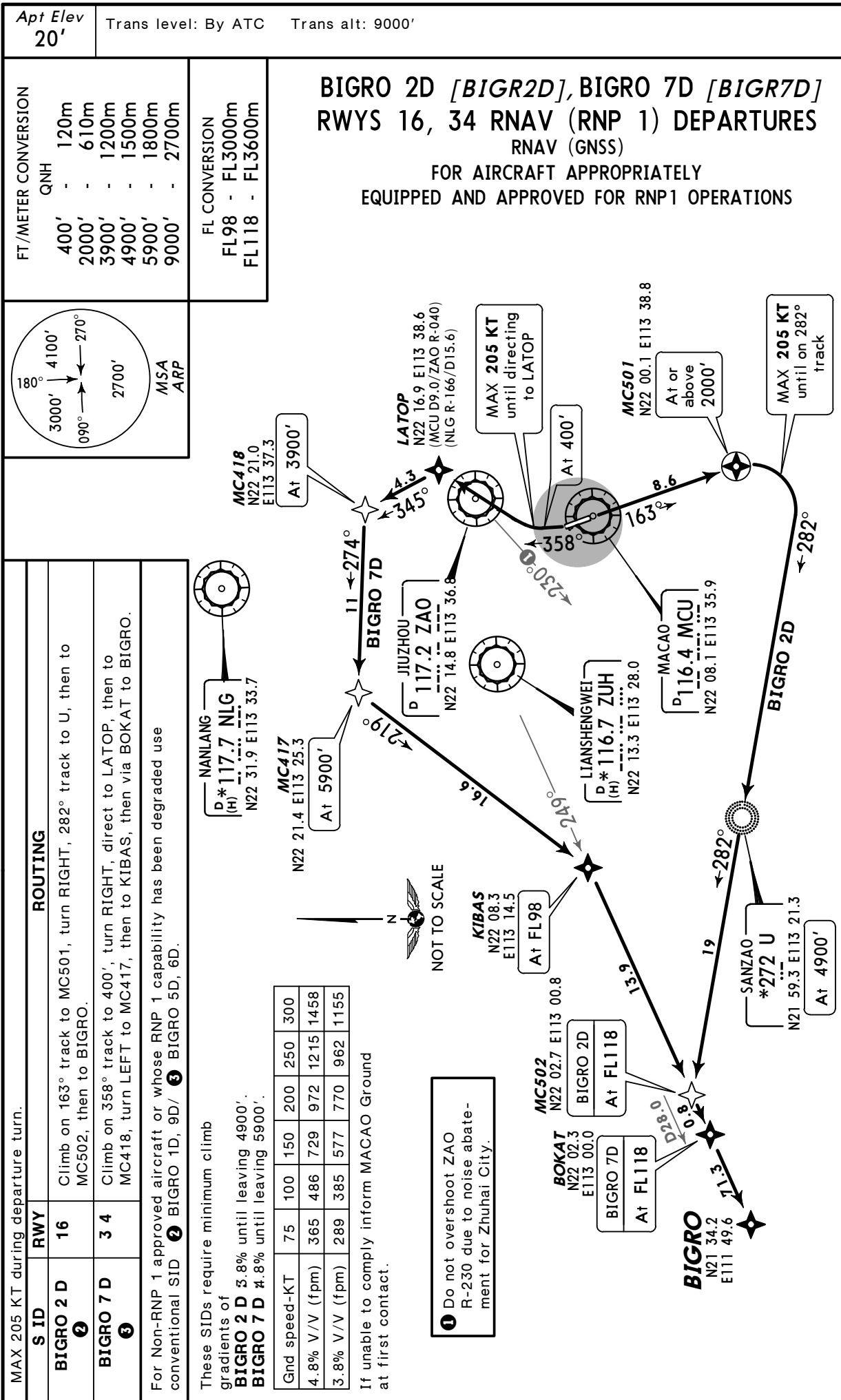


VMMC/MFM
MACAO INTL

JEPPESSEN
 24 JAN 14 **10-3E** **Eff 6 Feb**

MACAO, PR OF CHINA

RNAV SID



VMMC/MFM
MACAO INTL

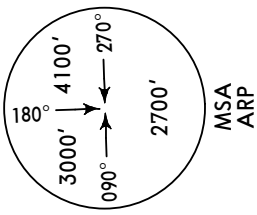
JEPPESSEN
10 JUL 15 **10-3F** **Eff 23 Jul**

MACAO, PR OF CHINA

RNAV SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



CONGA 2P [CONG2P]
RWY 16 RNAV (RNP 1) DEPARTURE

RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY

EQUIPPED AND APPROVED FOR RNP1 OPERATIONS

FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1 CAPABILITY
HAS BEEN DEGRADED USE CONVENTIONAL PROCEDURE

SPEED: MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE

COMMS **LOST COMMS**

Comply with last acknowledged clearance up to the next reporting point, then climb to flight planned cruising level and follow the flight planned route to join the appropriate airway.
SWW03 LSOT SWW03 LSOT SWW03 LSOT

TUNG LUNG
D 116.1 TD
N22 14.9 E114 17.6

CHEUNG CHAU
D 112.3 CH
N22 13.2 E114 01.8

MACAO MCU
D 116.4 MCU
N22 08.1 E113 35.9

PAPA
N21 58.7 E113 39.4
(MCU R-163/D10.0)

At 4000'
EXPECT further climb when instructed by ATC

MULET
N21 35.0 E113 47.9
(MCU R-163/D35.0)

SKATE
N21 31.9 E115 08.7

CONGA
N21 44.0
E116 47.1

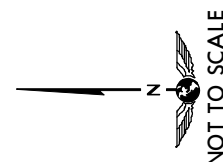
104° D142.3
102° D156.3

92.5

75.3

094°

134° D64.0
125° D74.6



ROUTING

Climb on 163° track to PAPA, then to MULET, then to SKATE, then to CONGA, continue on terminal transition route.

NON-RNAV: Intercept MCU R-163 to PAPA, further climb when instructed by ATC, EXPECT RADAR vectors to CONGA.

If MCU u/s climb straight ahead to 4000', then direct to MULET, EXPECT RADAR vectors to CONGA.

FT/METER CONVERSION

QNH

4000' - 1220m
9000' - 2700m

VMMC/MFM
MACAO INTL

JEPPESSEN
10 JUL 15 10-3G Eff 23 Jul

MACAO, PR OF CHINA

RNAV SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots towards Hong Kong shall follow the SID until LKC. Any deviation could result in direct conflict with Hong Kong traffic.

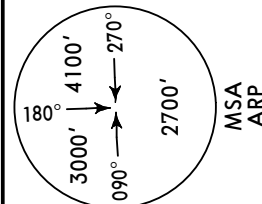
CONGA 2T [CONG2T]
RWY 34 RNAV (RNP 1) DEPARTURE
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY EQUIPPED
AND APPROVED FOR RNP1 OPERATIONS

FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1
CAPABILITY HAS BEEN DEGRADED USE CONVENTIONAL
PROCEDURE

IF LKC U/S REQUEST CONGA 1V

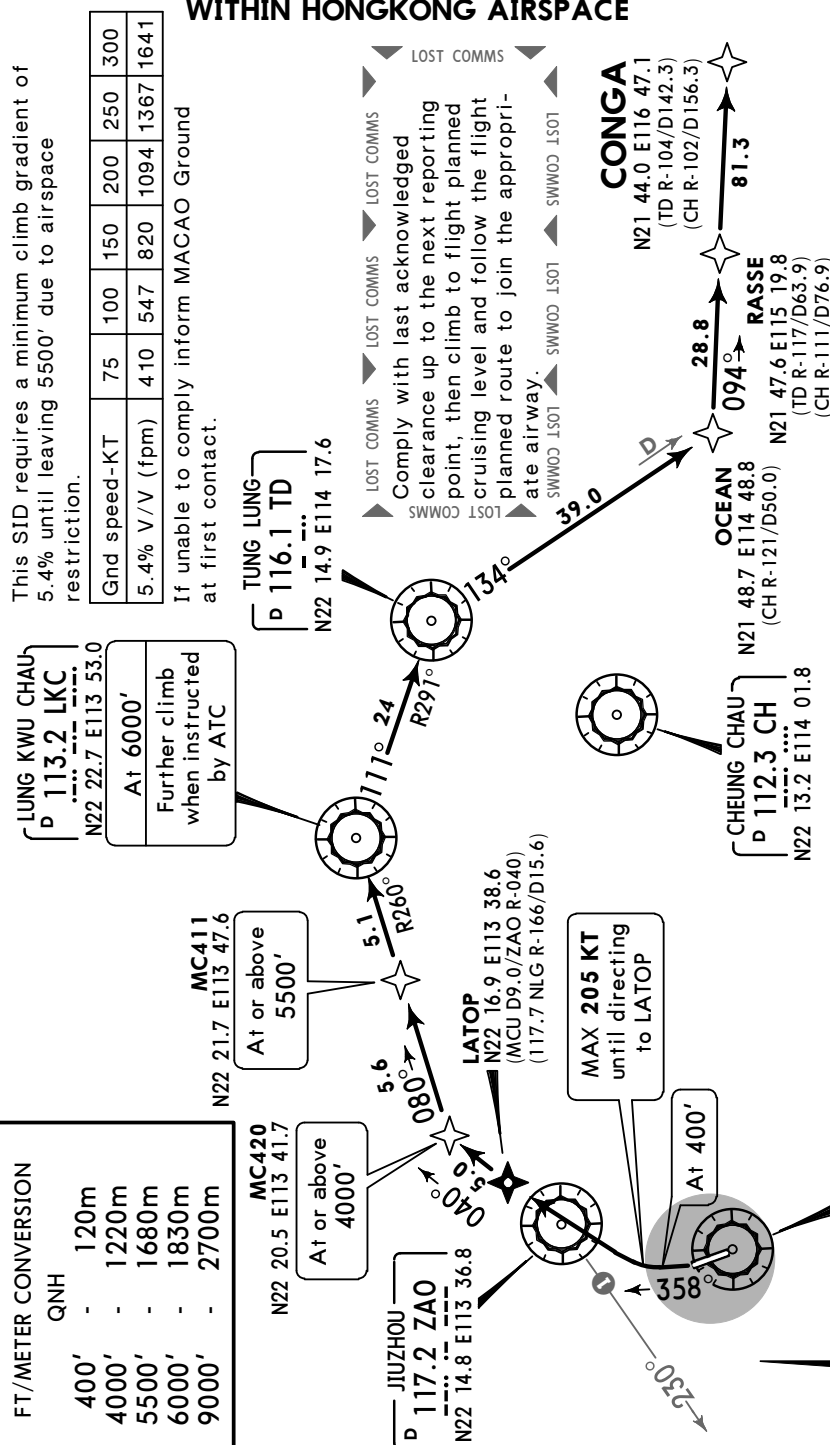
SPEED: MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE



This SID requires a minimum climb gradient of 5.4% until leaving 5500' due to airspace restriction.

Gnd speed-KT	75	100	150	200	250	300
5.4% V/V (fpm)	410	547	820	1094	1367	1641

If unable to comply inform MACAO Ground at first contact.



ROUTING

MAX 205 KT during departure turn until directing to LATOP.

Climb on 358° track to 400', turn RIGHT, direct to LATOP, turn RIGHT to MC420, then via MC411 to LKC, then to TD, then to OCEAN, then via RASSE to CONGA, continue on terminal transition routes.

NON-RNP 1 Climb on 358° track to 400', turn RIGHT to ZAO, intercept ZAO R-040, climbing to 4000', at D11.5 LKC/D12.5 MCU turn RIGHT, intercept LKC R-259 inbound LKC to cross D5.0 LKC at 5500' and LKC at 6000', further climb when instructed by ATC, EXPECT RADAR vectors to CONGA.

If ZAO u/s on 358° track to MCU 3.3 DME, turn RIGHT, 040° track to MCU 13.1 DME (LKC 11.4 DME), cross at 4000', turn RIGHT, intercept LKC R-259 inbound LKC to cross D5.0 LKC at 5500' and LKC at 6000', further climb when instructed by ATC, EXPECT RADAR vectors to CONGA.

FT/METER CONVERSION

QNH	400'	120m
4000'	-	1220m
5500'	-	1680m
6000'	-	1830m
9000'	-	2700m

MC420
N22 20.5 E113 41.7

At or above
4000'

JIUZHOU
D 117.2 ZAO
N22 14.8 E113 36.8

LATOP
N22 16.9 E113 38.6
(MCU D9.0/ZAO R-040)
(117.7 NLG R-166/D15.6)

MAX 205 KT
until directing
to LATOP

At 400'

MACAO
D 116.4 MCU
N22 08.1 E113 35.9

NOT TO SCALE

Do not overshoot ZAO
R-230 due to noise abate-
ment for Zhuhai City.

VMMC/MFM
MACAO INTL

JEPPESSEN
10 JUL 15 **10-3H** Eff 23 Jul

MACAO, PR OF CHINA

RNAV SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots towards Hong Kong shall follow the SID until LKC. Any deviation could result in direct conflict with Hong Kong traffic.

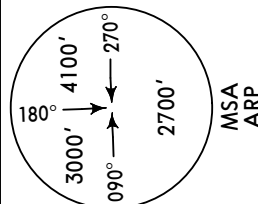
CONGA 3U [CONG3U]
RWY 34 RNAV (RNP 1) DEPARTURE
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY EQUIPPED
AND APPROVED FOR RNP1 OPERATIONS

FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1
CAPABILITY HAS BEEN DEGRADED USE CONVENTIONAL
PROCEDURE

IF LKC U/S REQUEST CONGA 2W

SPEED: MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE



This SID requires a minimum climb gradient of 5.4% until leaving 5500' due to airspace restriction.

Gnd speed-KT	75	100	150	200	250	300
5.4% V/V (fpm)	410	547	820	1094	1367	1641

If unable to comply inform MACAO Ground at first contact.

LUNG KWU CHAU
D 113.2 LKC
N22 22.7 E113 53.0

At 6000'
Further climb when instructed by ATC

MC411
N22 21.7 E113 47.6
At or above 5500'

LATOP
N22 16.9 E113 38.6
(MCU D9.0/ZAO R-040)
(117.7 NLG R-166/D15.6)

MC420
N22 20.5 E113 41.7
At or above 4000'

JIUZHOU
D 117.2 ZAO
N22 14.8 E113 36.8

MACAO
D 116.4 MCU
N22 08.1 E113 35.9

DOCTA
N21 56.8 E114 00.6
(114.8 SMT R-178/D23.4)

CHEUNG CHAU
D 112.3 CH
N22 13.2 E114 01.8

OCEAN
N21 48.7 E114 48.8
(CH R-121/D50.0)
(TD R-134/D39.0)

RASSE
N21 47.6 E115 19.8
(TD R-117/D63.9)
(CH R-111/D76.9)

CONGA
N21 44.0 E116 47.1
(TD R-104/D142.3)
(CH R-102/D156.3)

MAX 205 KT until directing to LATOP

NOT TO SCALE

Do not overshoot ZAO R-230 due to noise abatement for Zhuhai City.

ROUTING

MAX 205 KT during departure turn until directing to LATOP.

Climb on 358° track to 400', turn RIGHT, direct to LATOP, turn RIGHT to MC420, then via MC411 to LKC, then to DOCTA, then to OCEAN, then via RASSE to CONGA, continue on terminal transition routes.

NON-RNAV: Climb on 358° track to 400', turn RIGHT to ZAO, intercept ZAO R-040, climbing to 4000', at D11.5 LKC/D12.5 MCU turn RIGHT, intercept LKC R-259 inbound LKC to cross D5.0 LKC at 5500' and LKC at 6000', further climb when instructed by ATC, EXPECT RADAR vectors to CONGA.

If ZAO u/s on 358° track to MCU 3.3 DME, turn RIGHT, 040° track to MCU 13.1 DME (LKC 11.4 DME), cross at 4000', turn RIGHT, intercept LKC R-259 inbound LKC to cross D5.0 LKC at 5500' and LKC at 6000', further climb when instructed by ATC, EXPECT RADAR vectors to CONGA.

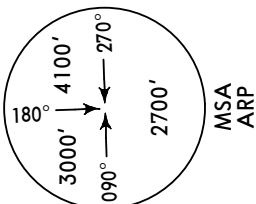
VMMC/MFM
MACAO INTL

JEPPESSEN
10 JUL 15 **10-3J** **Eff 23 Jul**

MACAO, PR OF CHINA

RNAV

Apt Elev
20'
Trans level: By ATC Trans alt: 9000'



GRUPA 2P [GRUP2P]
RWY 16 RNAV (RNP 1) DEPARTURE

RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY

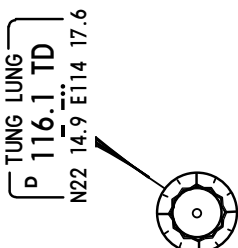
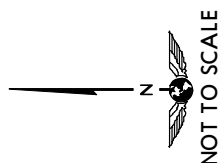
EQUIPPED AND APPROVED FOR RNP1 OPERATIONS

FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1 CAPABILITY
HAS BEEN DEGRADED USE CONVENTIONAL PROCEDURE

SPEED: MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE

COMMS ▼ LOST COMMS

Comply with last acknowledged
clearance up to the next reporting
point, then climb to flight planned
cruising level and follow the flight
planned route to join the appropri-
ate airway.
SWW00 LSOT SWW00 LSOT SWW00 LSOT



At 4000'
EXPECT further
climb when
instructed by ATC



ROUTING

Climb on 163° track to PAPA, then to MULET, then to SKATE, then to GRUPA,
continue on terminal transition route.

NON-RNAV: Intercept MCU R-163 to PAPA, further climb when instructed
by ATC, EXPECT RADAR vectors to GRUPA.

If MCU u/s climb straight ahead to 4000', then direct to MULET, EXPECT
RADAR vectors to GRUPA.

FT/METER CONVERSION
QNH
4000' - 1220m
9000' - 2700m

VMMC/MFM
MACAO INTL

JEPPESSEN
24 JAN 14 **10-3K** **Eff 6 Feb**

MACAO, PR OF CHINA

RNAV SID

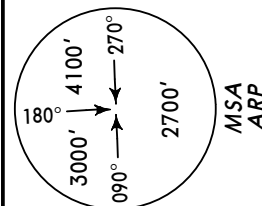
Apt Elev
20'

Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots towards Hong Kong shall follow the SID until LKC. Any deviation could result in direct conflict with Hong Kong traffic.

GRUPA 2T [GRUP2T]
RWY 34 RNAV (RNP 1) DEPARTURE
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY EQUIPPED
AND APPROVED FOR RNP1 OPERATIONS
FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1
CAPABILITY HAS BEEN DEGRADED USE CONVENTIONAL
PROCEDURE

IF LKC U/S REQUEST GRUPA 1V
MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE



FT/METER CONVERSION	QNH
400'	- 120m
4000'	- 1220m
5500'	- 1680m
6000'	- 1830m
9000'	- 2700m

LOST COMMS
Comply with last acknowledged clearance up to the next reporting point, then climb to flight planned cruising level and follow the flight planned route to join the appropriate airway.
SWMW03 LSOT SWW03 LSOT

LUNG KWU CHAU
D 113.2 LKC
(L) 22.7 E113 53.0
At 6000'
Further climb when instructed by ATC

This SID requires a minimum climb gradient of 5.4% until leaving 5500' due to airspace restriction.

Gnd speed-KT	75	100	150	200	250	300
5.4% V/V (fpm)	410	547	820	1094	1367	1641

If unable to comply inform MACAO Ground at first contact.

MC411
N22 21.7 E113 47.6
At or above 5500'

MC420
N22 20.5 E113 41.7
At or above 4000'

JIUZHOU
D 117.2 ZAO
N22 14.8 E113 36.8

LATOP
N22 16.9 E113 38.6
(MCU D9.0/ZAO R-040)
(117.7 NLG R-166/D15.6)

Do not overshoot ZAO R-230 due to noise abatement for Zhuhai City.

CHEUNG CHAU
D 112.3 CH
N22 13.2 E114 01.8

MACAO
D 116.4 MCU
N22 08.1 E113 35.9
At 400'

GRUPA
N20 50.7 E115 57.0
(CH R-129/D135.2)

ROUTING

Climb on 358° track to 400', turn RIGHT, direct to LATOP, turn RIGHT to MC420, then via MC411 to LKC, then to TD, then via OCEAN to GRUPA, continue on terminal transition routes.
NON-RNAV: Climb on 358° track to 400', turn RIGHT to ZAO, intercept ZAO R-040, climbing to 4000', at D11.5 LKC/D12.5 MCU turn RIGHT, intercept LKC R-259 inbound LKC to cross D5.0 LKC at 5500' and LKC at 6000', further climb when instructed by ATC, EXPECT RADAR vectors to GRUPA.
If ZAO u/s on 358° track to MCU 3.3 DME, turn RIGHT, 040° track to MCU 13.1 DME (LKC 11.4 DME), cross at 4000', turn RIGHT, intercept LKC R-259 inbound LKC to cross D5.0 LKC at 5500' and LKC at 6000', further climb when instructed by ATC, EXPECT RADAR vectors to GRUPA.

MAX 205 KT during departure turn until directing to LATOP.

VMMC/MFM
MACAO INTL

JEPPESSEN
24 JAN 14 10-3L Eff Feb

MACAO, PR OF CHINA

RNAV SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots towards Hong Kong shall follow the SID until LKC. Any deviation could result in direct conflict with Hong Kong traffic.

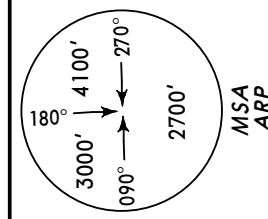
GRUPA 3U [GRUP3U]
RWY 34 RNAV (RNP 1) DEPARTURE
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY EQUIPPED
AND APPROVED FOR RNP1 OPERATIONS

FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1
CAPABILITY HAS BEEN DEGRADED USE CONVENTIONAL
PROCEDURE

IF LKC U/S REQUEST GRUPA 2W

**MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE**



NOT TO SCALE

LOST COMMS
Comply with last acknowledged clearance up to the next reporting point, then climb to flight planned cruising level and follow the flight planned route to join the appropriate airway.
SWW03 LS01 SWW03 LS01 SWW03 LS01

This SID requires a minimum climb gradient of 5.4% until leaving 5500' due to airspace restriction.

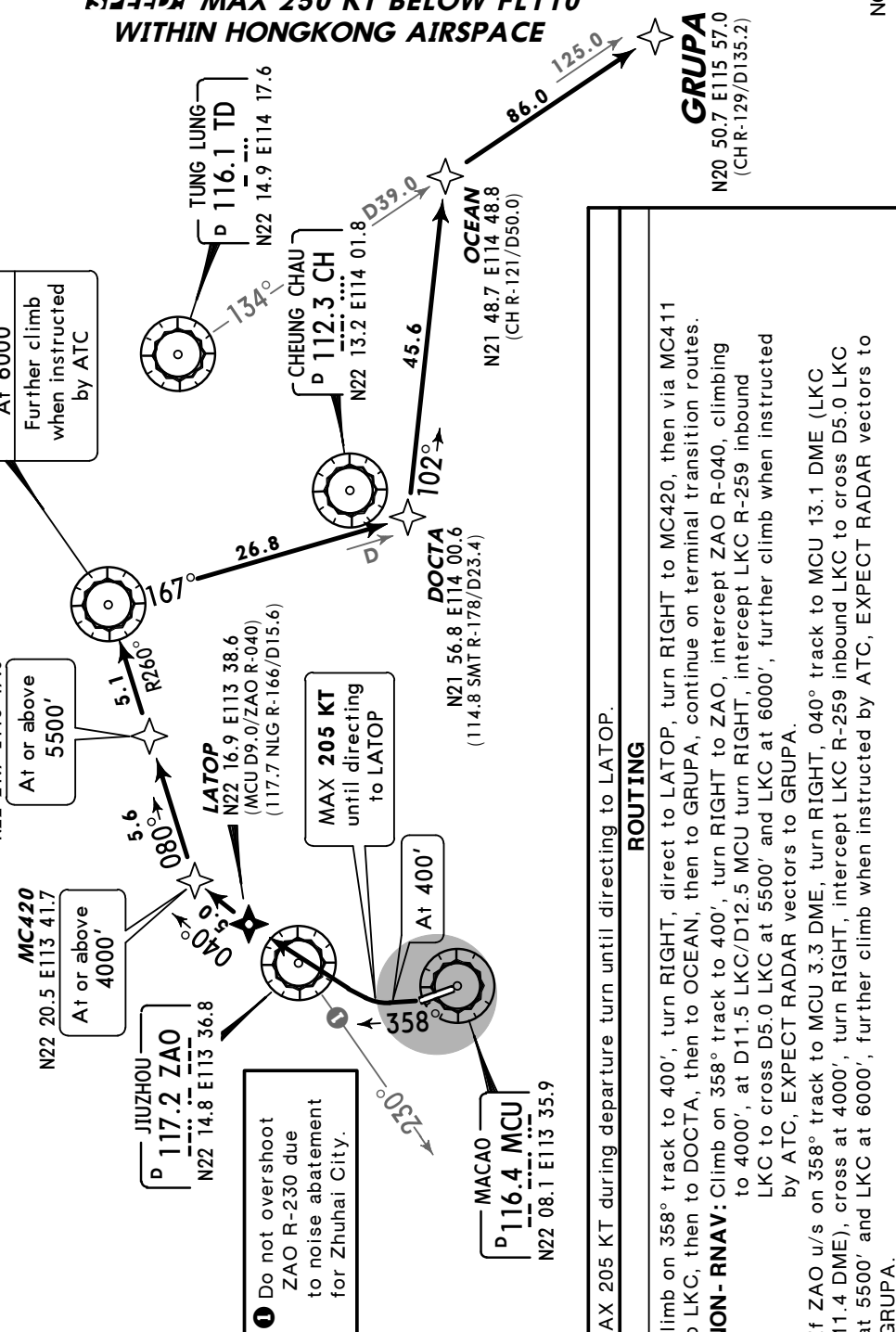
Gnd speed-KT	75	100	150	200	250	300
V/V (fpm)	410	547	820	1094	1367	1641

5.4% V/V (fpm)

If unable to comply inform MACAO Ground at first contact.

FT/METER CONVERSION

QNH	400'	120m
-	4000'	1220m
-	5000'	1680m
-	6000'	1830m
-	9000'	2700m



VMMC/MFM
MACAO INTL

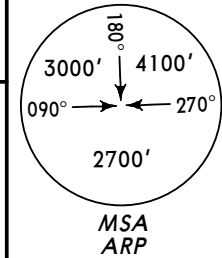
JEPPESEN
4 APR 14 **(10-3M)**

MACAO, PR OF CHINA

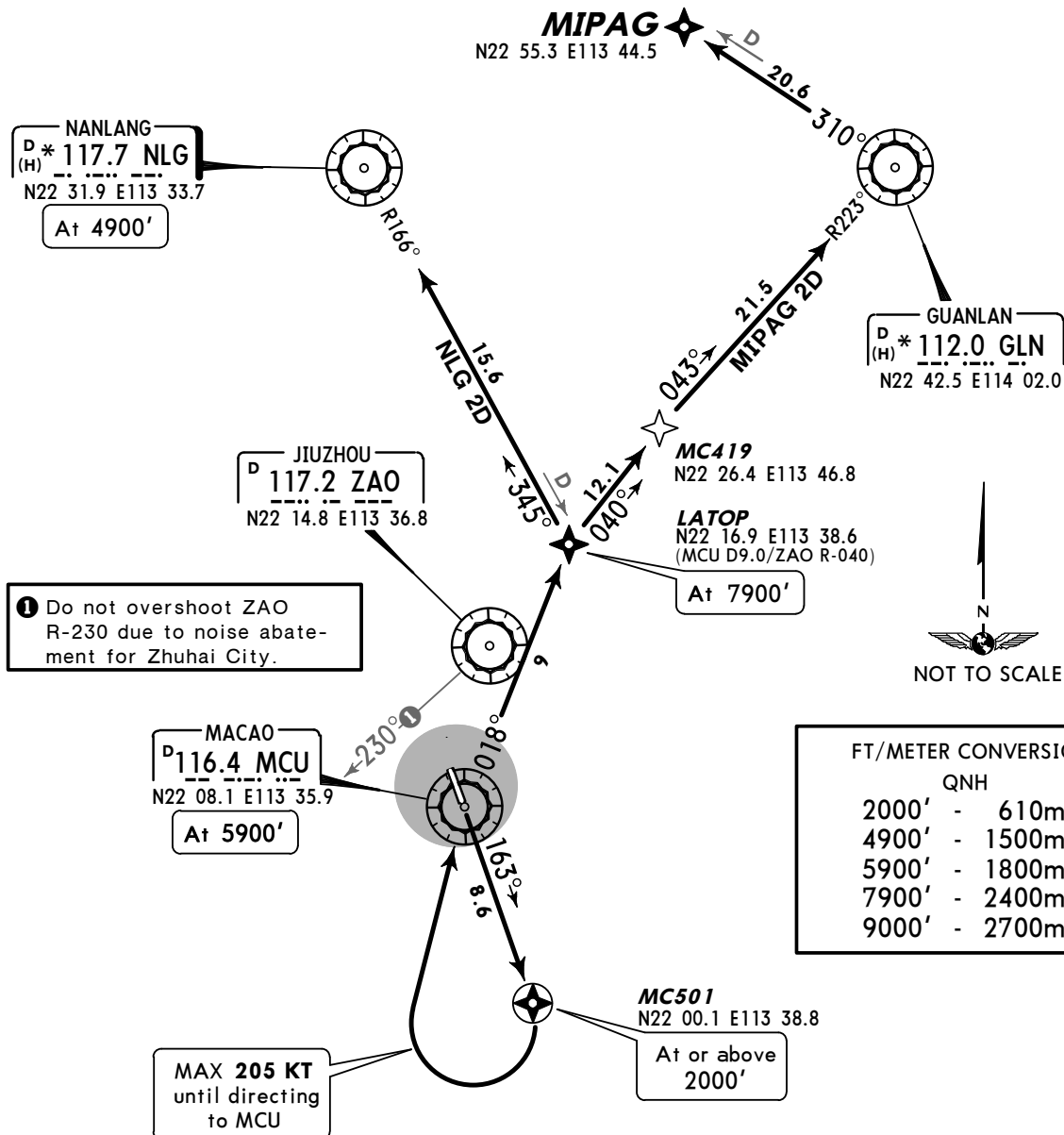
RNAV

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



MIPAG 2D [MIPA2D]
NLG 2D
RWY 16 RNAV (RNP 1) DEPARTURES
RNAV (GNSS)
FOR AIRCRAFT APPROPRIATELY
EQUIPPED AND APPROVED FOR RNP1 OPERATIONS



These SID's require a minimum climb gradient of 3.8% until reaching 7900'.

Gnd speed-KT	75	100	150	200	250	300
3.8% V/V (fpm)	289	385	577	770	962	1155

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn.

SID	R OUTING
MIPAG 2 D	Climb on 163° track to MC501, turn RIGHT, direct to MCU, then to LATOP, then to MC419, then to GLN, then to MIPAG.
NLG 2 D	Climb on 163° track to MC501, turn RIGHT, direct to MCU, then to LATOP, then to NLG.

For Non-RNP 1 approved aircraft or whose RNP 1 capability has been degraded use conventional SID **2** MIPAG 1D/ **3** NLG 1D, 9D.

VMMC/MFM
MACAO INTL

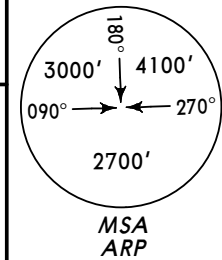
JEPPESSEN
4 APR 14 **10-3N**

MACAO, PR OF CHINA

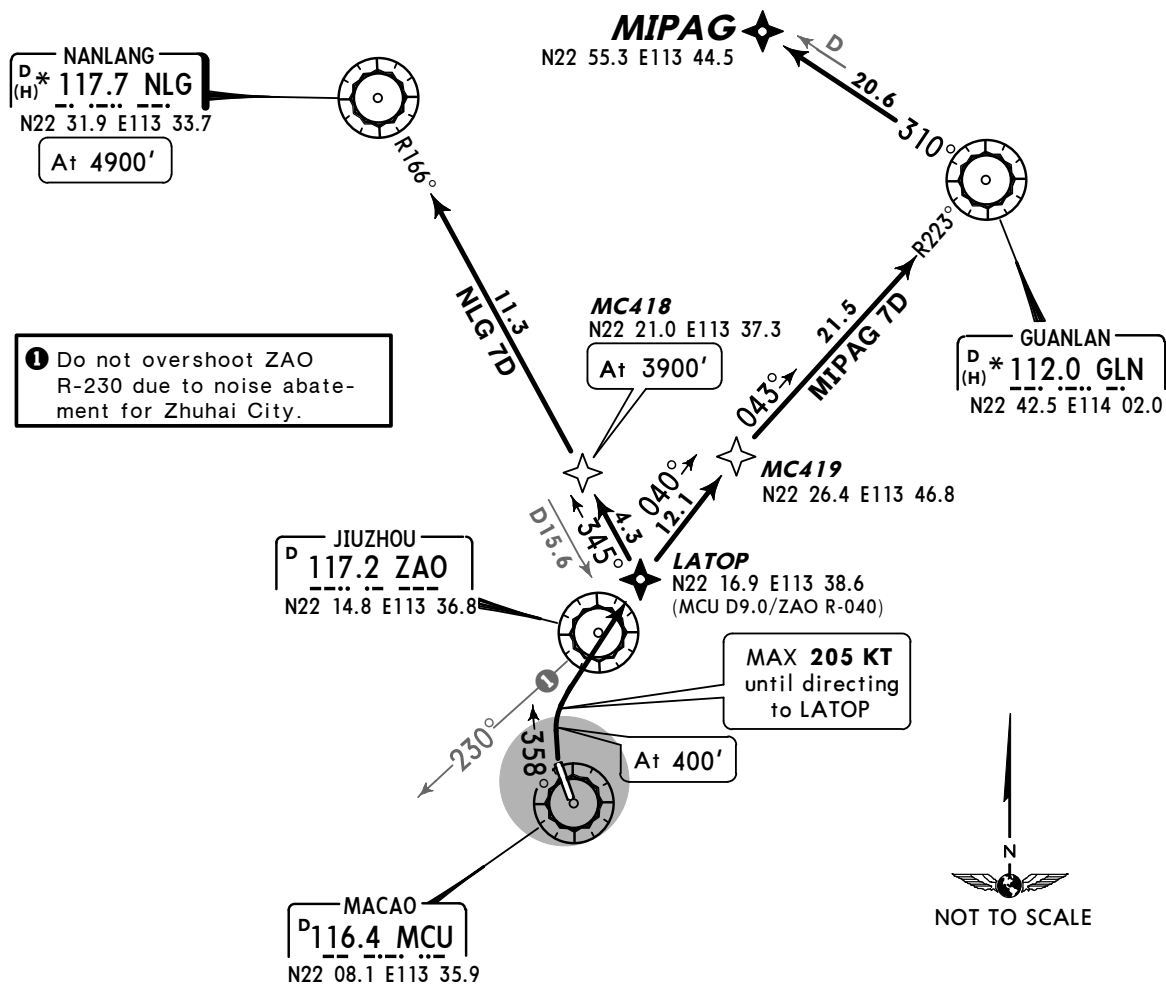
RNAV 5

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



MIPAG 7D [MIPA7D]
NLG 7D
RWY 34 RNAV (RNP 1) DEPARTURES
RNAV (GNSS)
FOR AIRCRAFT APPROPRIATELY
EQUIPPED AND APPROVED FOR RNP1 OPERATIONS



These SIDs require a minimum climb gradient of

MIPAG 7 D: 4.8% until reaching FL108.

NLG 7 D: 4.8% until reaching 4900'.

Gnd speed-KT	75	100	150	200	250	300
4.8% V/V (fpm)	365	486	729	972	1215	1458

If unable to comply inform MACAO Ground at first contact.

FT/METER CONVERSION
QNH

400'	-	120m
3900'	-	1200m
4900'	-	1500m
9000'	-	2700m

FL CONVERSION
FL108 - FL3300m

MAX 205 KT during departure turn.

SID	ROUTING
MIPAG 7 D ②	Climb 358° track to 400', turn RIGHT, direct to LATOP, then to MC419, then to GLN, turn LEFT to MIPAG.
NLG 7 D ③	Climb on 358° track to 400', turn RIGHT, direct to LATOP, then via MC418 to NLG.

For Non-RNP 1 approved aircraft or whose RNP 1 capability has been degraded use conventional SID ② MIPAG 5D, 6D/ ③ NLG 5D, 6D.

VMMC/MFM
MACAO INTL

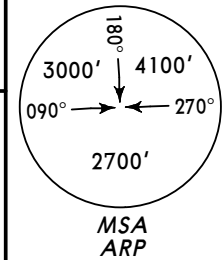
JEPPESSEN
24 JAN 14 **10-3P** **Eff 6 Feb**

MACAO, PR OF CHINA

RNAV SID

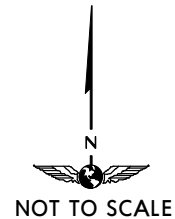
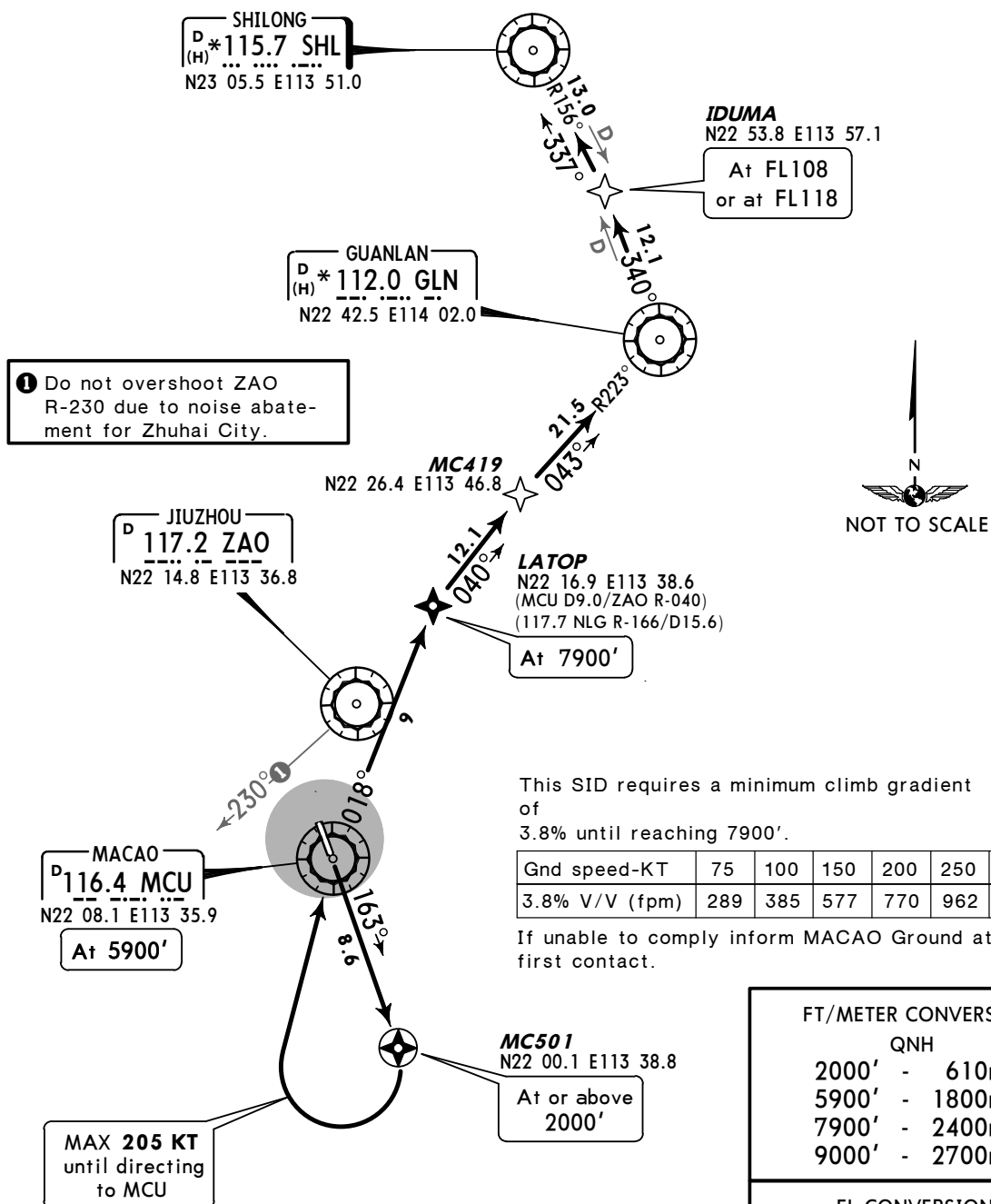
Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



SHL 2D
RWY 16 RNAV (RNP 1) DEPARTURE
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY
EQUIPPED AND APPROVED FOR RNP1 OPERATIONS
FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1 CAPABILITY
HAS BEEN DEGRADED USE CONVENTIONAL SID SHL 1D OR SHL 9D



FT/METER CONVERSION

QNH

2000'	-	610m
5900'	-	1800m
7900'	-	2400m
9000'	-	2700m

FL CONVERSION

FL108	-	FL3300m
FL118	-	FL3600m

MAX 205 KT during departure turn.

ROUTING

Climb on 163° track to MC501, turn RIGHT, direct to MCU, then to LATOP, then to MC419, then to GLN, then to IDUMA, then to SHL.

VMMC/MFM
MACAO INTL

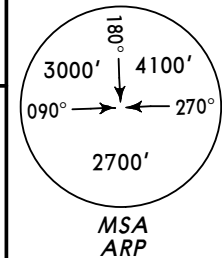
JEPPESEN
24 JAN 14 **10-3Q** **Eff 6 Feb**

MACAO, PR OF CHINA

RNAV SID

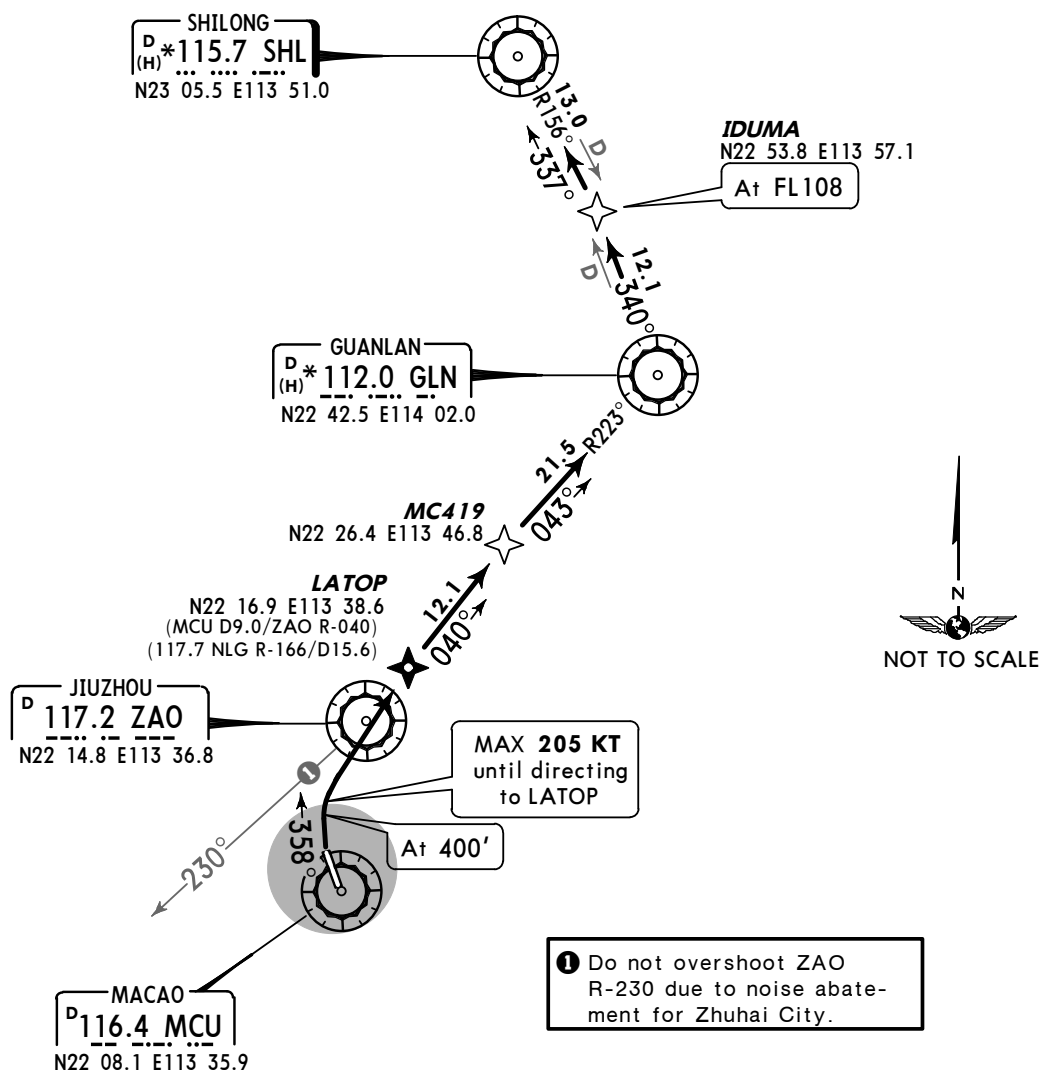
Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



SHL 7D
RWY 34 RNAV (RNP 1) DEPARTURE
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY
EQUIPPED AND APPROVED FOR RNP1 OPERATIONS
FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1 CAPABILITY
HAS BEEN DEGRADED USE CONVENTIONAL SID SHL 5D OR SHL 6D



This SID requires a minimum climb gradient
of
4.8% until leaving FL108.

Gnd speed-KT	75	100	150	200	250	300
4.8% V/V (fpm)	365	486	729	972	1215	1458

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn.

R OUTING

Climb 358° track to 400', turn RIGHT, direct to LATOP, then to MC419, then to GLN, turn LEFT to IDUMA, then to SHL.

FT/METER CONVERSION

QNH

400' - 120m
9000' - 2700m

FL CONVERSION

FL108 - FL3300m

VMMC/MFM
MACAO INTL

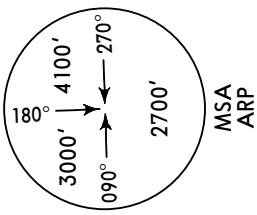
JEPPESSEN
10 JUL 15 **10-3S** **Eff 23 Jul**

MACAO, PR OF CHINA

RNAV 5

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



SOUSA 2P [SOUS2P]
RWY 16 RNAV (RNP 1) DEPARTURE

RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY

EQUIPPED AND APPROVED FOR RNP1 OPERATIONS

FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1 CAPABILITY
HAS BEEN DEGRADED USE CONVENTIONAL PROCEDURE

SPEED: MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE

COMMS LOST COMMS

Comply with last acknowledged clearance up to the next reporting point, then climb to flight planned cruising level and follow the flight planned route to join the appropriate airway.
SWW03 LSOT SWW03 LSOT SWW03 LSOT

SOUSA
N22 01.2
E116 11.5



3.59

SKATE
N21 31.9 E115 08.7

5.59



75.3

094°

MULET
N21 35.0 E113 47.9
(MCU R-163/D35.0)

25

PAPA
N21 58.7 E113 39.4
(MCU R-163/D10.0)

At 4000'
EXPECT further climb when instructed by ATC

TUNG LUNG
D 116.1 TD
N22 14.9 E114 17.6

CHEUNG CHAU
D 112.3 CH
N22 13.2 E114 01.8

MACAO MCU
D 116.4 MCU
N22 08.1 E113 35.9

FT/METER CONVERSION

QNH

4000' - 1220m
9000' - 2700m

ROUTING

Climb on 163° track to PAPA, then to MULET, then to SKATE, then to SOUSA, continue on terminal transition route.

NON-RNP: Intercept MCU R-163 to PAPA, further climb when instructed by ATC, EXPECT RADAR vectors to SOUSA.

If MCU u/s climb straight ahead to 4000', then direct to MULET, EXPECT RADAR vectors to SOUSA.

VMMC/MFM
MACAO INTL

JEPPESSEN
10 JUL 15 10-3T Eff 23 Jul

MACAO, PR OF CHINA

RNAV SID

Apt Elev
20'

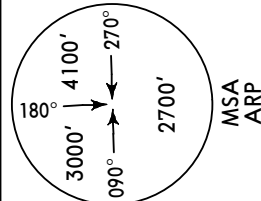
Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots
towards Hong Kong shall follow the SID until LKC. Any
deviation could result in direct conflict with Hong Kong
traffic.

SOUSA 3T [SOUS3T]
RWY 34 RNAV (RNP 1) DEPARTURE
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY EQUIPPED
AND APPROVED FOR RNP1 OPERATIONS
FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1
CAPABILITY HAS BEEN DEGRADED USE CONVENTIONAL
PROCEDURE

IF LKC U/S REQUEST SOUSA 2V

SPEED MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE

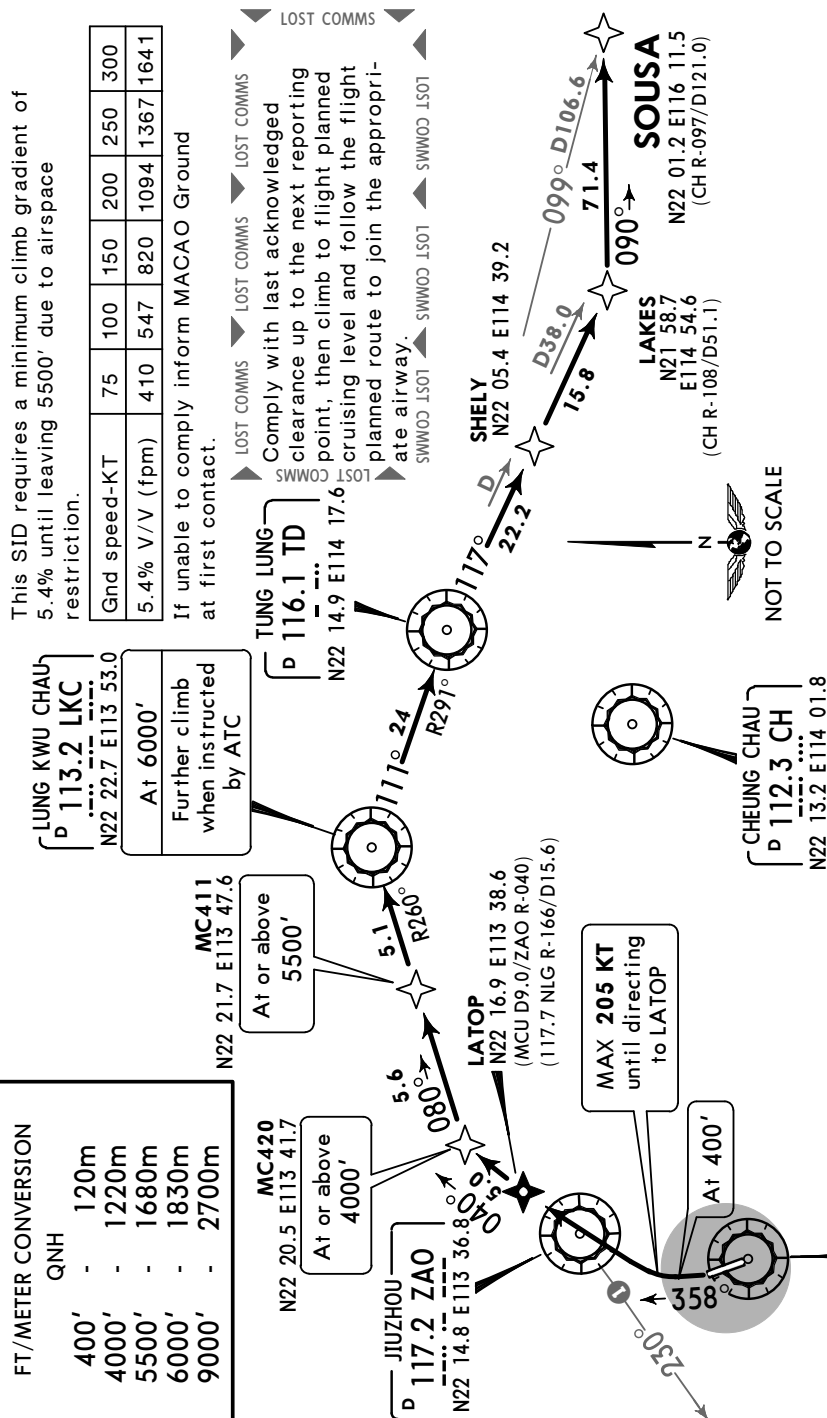


This SID requires a minimum climb gradient of
5.4% until leaving 5500' due to airspace
restriction.

Gnd speed-KT	75	100	150	200	250	300
5.4% V/V (fpm)	410	547	820	1094	1367	1641

If unable to comply inform MACAO Ground
at first contact.

LOST COMMS
Comply with last acknowledged
clearance up to the next reporting
point, then climb to flight planned
cruising level and follow the flight
planned route to join the appropri-
ate airway.
SWMWOC LSOT SWWOC LSOT SWWOC LSOT



MAX 205 KT during departure turn until directing to LATOP.

ROUTING

Climb on 358° track to 400', turn RIGHT, direct to LATOP, turn RIGHT to MC420, then via
MC411 to LKC, then to TD, then via SHELY to LAKES, then to SOUSA, continue on terminal
transition routes.

NON RNAV Climb on 358° track to 400', turn RIGHT to ZAO, intercept ZAO R-040, climbing
to 4000', at D11.5 LKC/D12.5 MCU turn RIGHT, intercept LKC R-259 inbound
LKC to cross D5.0 LKC at 5500' and LKC at 6000', further climb when instructed
by ATC, EXPECT RADAR vectors to SOUSA.

If ZAO u/s on 358° track to MCU 3.3 DME, turn RIGHT, 040° track to MCU 13.1 DME (LKC
11.4 DME), cross at 4000', turn RIGHT, intercept LKC R-259 inbound LKC to cross D5.0 LKC
at 5500' and LKC at 6000', further climb when instructed by ATC, EXPECT RADAR vectors to
SOUSA.

Do not overshoot ZAO
R-230 due to noise abate-
ment for Zhuhai City.

VMMC/MFM
MACAO INTL

JEPPESSEN
24 JAN 14 10-3U Eff 6 Feb

MACAO, PR OF CHINA

RNA SID

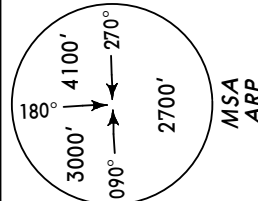
Apt Elev
20'

Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots towards Hong Kong shall follow the SID until LKC. Any deviation could result in direct conflict with Hong Kong traffic.

SOUSA 3U [SOUS3U]
RWY 34 RNAV (RNP 1) DEPARTURE
RNAV (GNSS)

FOR AIRCRAFT APPROPRIATELY EQUIPPED
AND APPROVED FOR RNP1 OPERATIONS
FOR NON-RNP 1 APPROVED AIRCRAFT OR WHOSE RNP 1
CAPABILITY HAS BEEN DEGRADED USE CONVENTIONAL
PROCEDURE

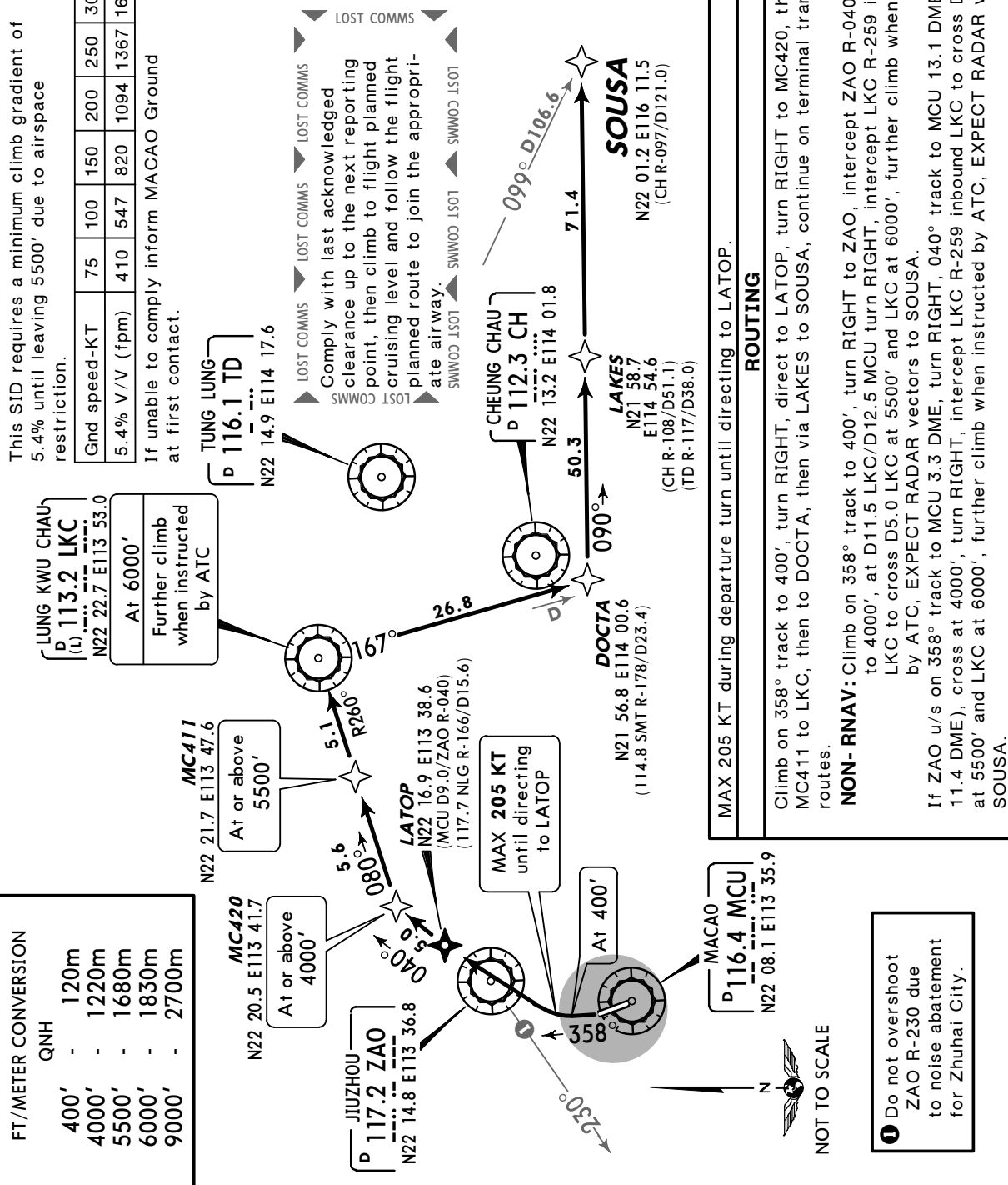
IF LKC U/S REQUEST SOUSA 2W
~~SPEED~~ MAX 250 KT BELOW FL110
WITHIN HONGKONG AIRSPACE



This SID requires a minimum climb gradient of 5.4% until leaving 5500' due to airspace restriction.

Gnd speed-KT	75	100	150	200	250	300
5.4% V/V (fpm)	410	547	820	1094	1367	1641

If unable to comply inform MACAO Ground at first contact.



VMMC/MFM
MACAO INTLJEPPESEN
24 JAN 14 10-3V Eff 6 Feb

MACAO, PR OF CHINA

SID

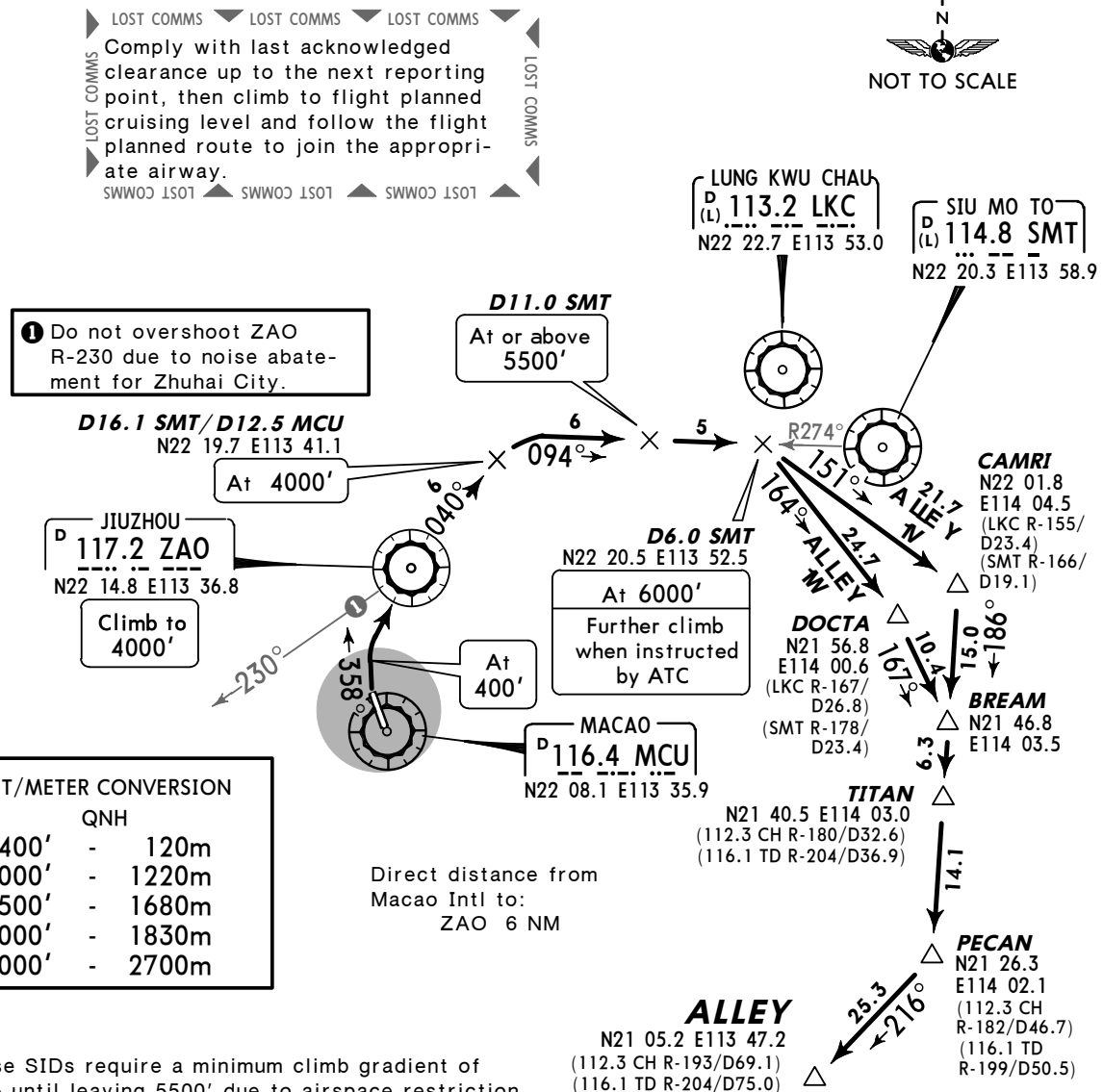
Apt Elev
20'

Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots towards Hong Kong shall follow the SID until LKC. Any deviation could result in direct conflict with Hong Kong traffic.

ALLEY 1V [ALEY1V], ALLEY 1W [ALEY1W]

RWY 34 DEPARTURES

NOT AVAILABLE IF SMT U/S

SPEED MAX 250 KT BELOW FL110

These SIDs require a minimum climb gradient of 5.4% until leaving 5500' due to airspace restriction.

Gnd speed-KT	75	100	150	200	250	300
5.4% V/V (fpm)	410	547	820	1094	1367	1641

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn until ZAO.

SID	ROUTING
ALLEY 1V	Climb on 358° track to 400', turn RIGHT to ZAO, ZAO R-040 to D16.1 SMT (D12.5 MCU), turn RIGHT, intercept SMT R-274 inbound to D6.0 SMT, turn RIGHT to CAMRI, turn RIGHT via BREAM and TITAN to PECAN, turn RIGHT to ALLEY, continue on terminal transition routes.
ALLEY 1W	Climb on 358° track to 400', turn RIGHT to ZAO, ZAO R-040 to D16.1 SMT (D12.5 MCU), turn RIGHT, intercept SMT R-274 inbound to D6.0 SMT, turn RIGHT to DOCTA, then to BREAM, turn RIGHT via TITAN to PECAN, turn RIGHT to ALLEY, continue on terminal transition routes.
If ZAO u/s on 358° track to MCU 3.3 DME turn RIGHT, 040° track to MCU 13.8 DME (SMT 16.2 DME), cross at 4000', turn RIGHT, intercept SMT R-274 inbound and continue on SID.	

CHANGES: ZAO DME commissioned.

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VMMC/MFM
MACAO INTL

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 13 MAY 16 **10-3V1** **Eff 26 May**

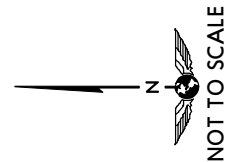
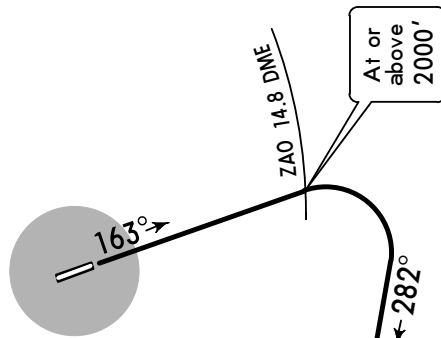
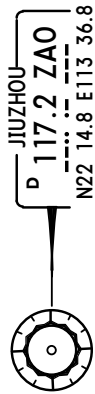
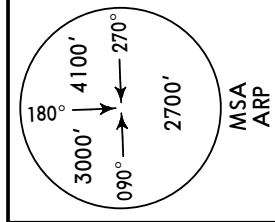
MACAO, PR OF CHINA

SIC

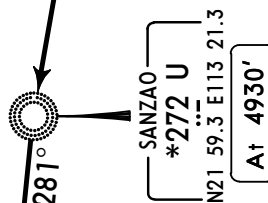
Apt Elev
 20'

Trans level: By ATC Trans alt: 9000'

BIGRO 1D [BIGR1D]
RWY 16 DEPARTURE
 TO BE USED WHEN MCU U/S



Direct distance from
 Macao Intl to:
 U 16 NM



BIGRO
 N21 34.2 E111 49.6

This SID requires a minimum climb gradient
 of
 3.8% until leaving 4930'.

Gnd speed-KT	75	100	150	200	250	300
3.8% V/V (fpm)	289	385	577	770	962	1155

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn.

ROUTING

Climb straight ahead, at ZAO 14.8 DME turn RIGHT, intercept 282° bearing to U,
 281° bearing to BOKAT, turn LEFT, 249° track to BIGRO.

VMMC/MFM
MACAO INTL

JEPPESEN
13 MAY 16 **10-3V2** Eff 26 May

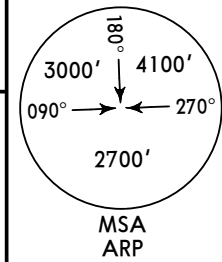
MACAO, PR OF CHINA

SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'

BIGRO 4D [BIGR4D], BIGRO 9D [BIGR9D]
RWYS 34, 16 DEPARTURES

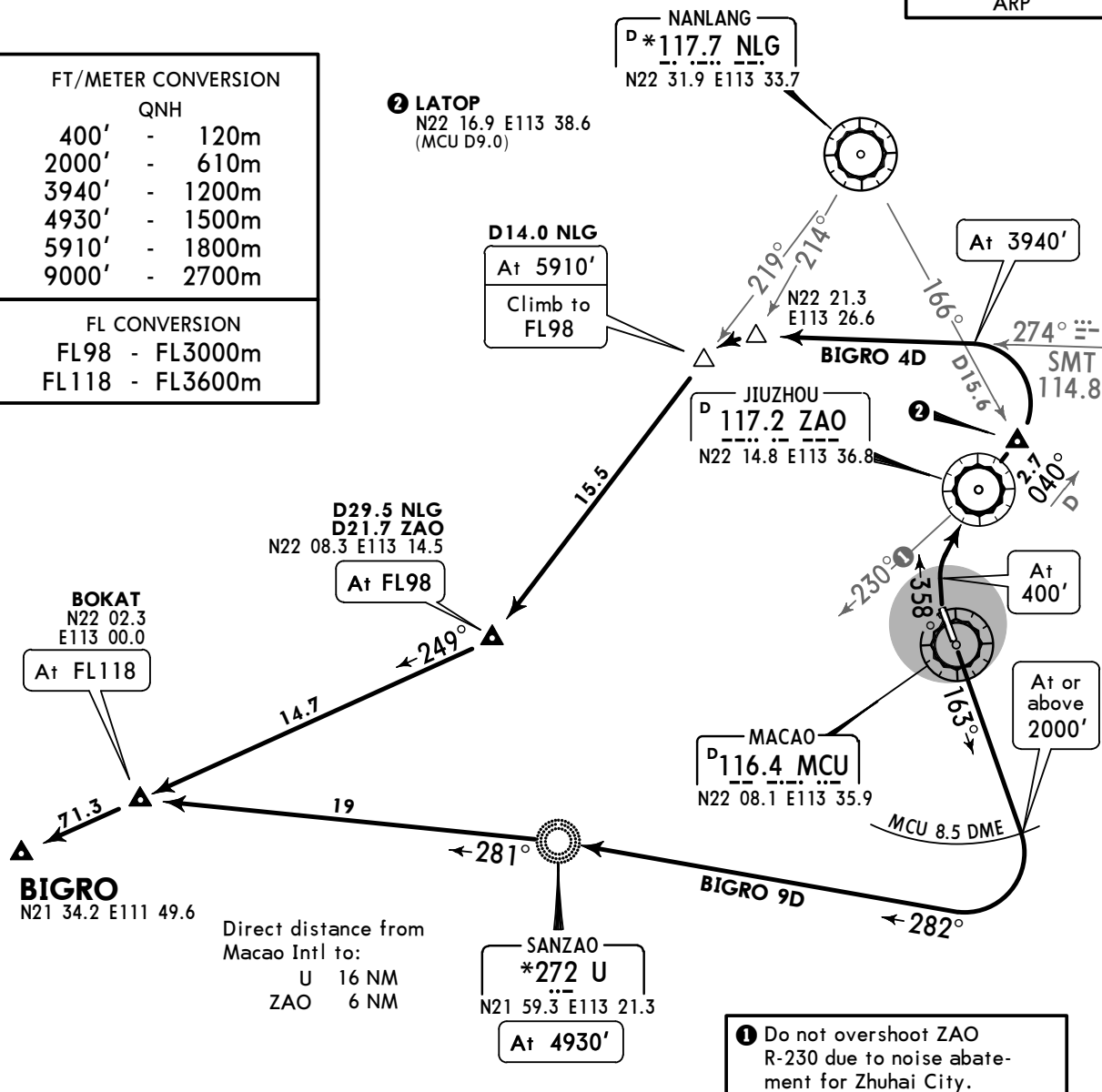


FT/METER CONVERSION

	QNH
400'	- 120m
2000'	- 610m
3940'	- 1200m
4930'	- 1500m
5910'	- 1800m
9000'	- 2700m

FL CONVERSION

FL98	- FL3000m
FL118	- FL3600m



These SIDs require minimum climb gradients of

BIGRO 4D: 4.8% until leaving 5910'.

BIGRO 9D: 3.8% until leaving 4930'.

Gnd speed-KT	75	100	150	200	250	300
4.8% V/V (fpm)	365	486	729	972	1215	1458
3.8% V/V (fpm)	289	385	577	770	962	1155

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn.

SID	RWY	ROUTING
BIGRO 4D	34	Climb on 358° track to 400', turn RIGHT to ZAO, ZAO R-040 to LATOP, turn LEFT, intercept SMT R-274, at NLG R-214 turn LEFT, intercept NLG R-219 to D29.5 NLG/D21.7 ZAO, turn RIGHT, 249° track to BOKAT, to BIGRO.
BIGRO 9D IF MCU U/S REQUEST BIGRO 1D	16	Climb straight ahead, at MCU 8.5 DME turn RIGHT, intercept 282° bearing to U, 281° bearing to BOKAT, turn LEFT, 249° track to BIGRO.

VMMC/MFM
MACAO INTL

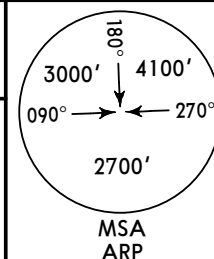
JEPPesen
13 MAY 16 **10-3V3** **E1f 26 May**

MACAO, PR OF CHINA

SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



BIGRO 8D [BIGR8D]
RWY 34 DEPARTURE
TO BE USED WHEN ZAO U/S

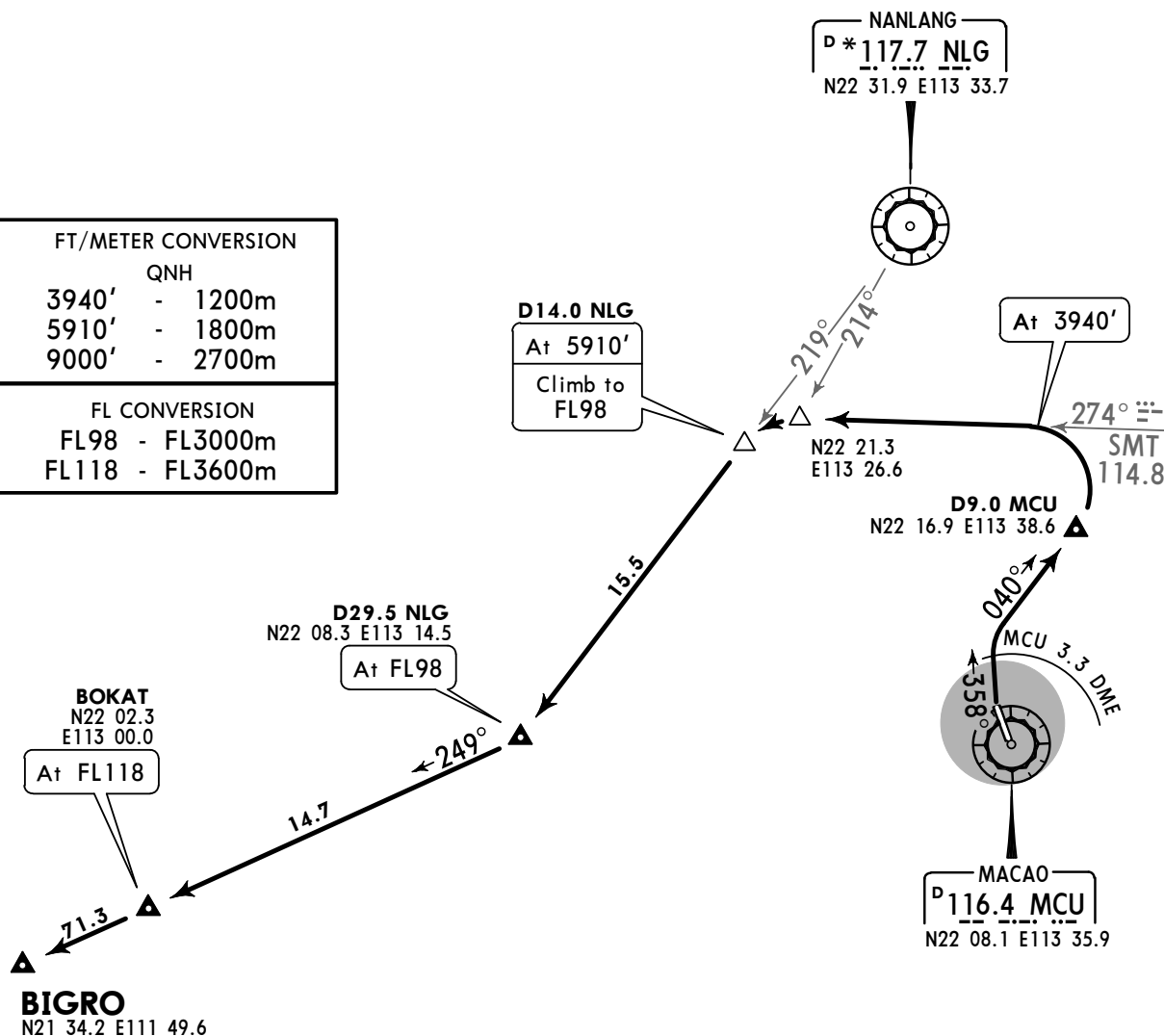
FT/METER CONVERSION

QNH

3940' - 1200m
5910' - 1800m
9000' - 2700m

FL CONVERSION

FL98 - FL3000m
FL118 - FL3600m



This SID requires a minimum climb gradient
of
4.8% until leaving 5910'.

Gnd speed-KT	75	100	150	200	250	300
4.8% V/V (fpm)	365	486	729	972	1215	1458

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn.

ROUTING

On 358° track, at MCU 3.3 DME turn RIGHT, 040° track to D9.0 MCU, turn LEFT, intercept SMT R-274, at NLG R-214 turn LEFT, intercept NLG R-219 to D29.5 NLG, turn RIGHT, on 249° track to BOKAT, to BIGRO.

VMMC/MFM
MACAO INTL

JEPPESSEN
13 MAY 16 10-3V4 Eff 26 May

MACAO, PR OF CHINA

SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots departing towards Hong Kong shall follow the SID until LKC. Any deviation could result in direct conflict with Hong Kong traffic.

CONGA 1V [CONG1V]
CONGA 2W [CONG2W]
RWY 34 DEPARTURES
NOT AVAILABLE IF SMT U/S
SPEED: MAX 250 KT
BELOW FL110

FT/METER CONVERSION	
FT	METER
400'	120m
4000'	1220m
5500'	1680m
6000'	1830m
9000'	2700m

COMMS LOST COMMS

► Comply with last acknowledged clearance up to the next reporting point, then climb to flight planned cruising level and follow the flight planned route to join the appropriate airway.
► LOST COMMS
► SWWOC LSOT
► SWWOC LSOT
► SWWOC LSOT

❶ Do not overshoot ZAO R-230 due to noise abatement for Zhuhai City.

Direct distance from Macao Intl to:
ZAO 6 NM

CONGA
N21 44.0 E116 47.1
(TD R-104/D142.3)
(CH R-102/D156.3)

RASSE
N21 47.6 E115 19.8
(TD R-117/D63.9)
(CH R-111/D76.9)

OCEAN
N21 48.7 E114 48.8
(CH R-121/D50.0)

MACAO
D116.4 MCU
N22 08.1 E113 35.9

DOCTA
N21 56.8 E114 00.6
(LKC R-167/D26.8)

CHEUNG CHAU
D112.3 CH
N22 13.2 E114 01.8

TUNG LUNG
D116.1 TD
N22 14.9 E114 17.6

SIU MO TO
D114.8 SMT
N22 20.3 E113 58.9

LUNG KWU CHAU
D113.2 LKC
N22 22.7 E113 53.0

CONGA 1V
D111.0 SMT
N22 20.5 E113 52.5

CONGA 2W
D12.5 MCU
N22 19.7 E113 41.1

JIUZHOU
D117.2 ZAO
N22 14.8 E113 36.8

Further climb when instructed by ATC

At or above 5500'

At 4000'

At 400'

Climb to 4000'

EXPECT to cross at or above FL140

These SIDs require a minimum climb gradient of 5.4% until leaving 5500' due to airspace restrictions.

MAX 205 KT during departure turn until ZAO.

ROUTING

CONGA 1V
Climb on 358° track to 400', turn RIGHT to ZAO, ZAO R-040 to D16.1 SMT (D12.5 MCU), turn RIGHT, intercept SMT R-274 inbound to SMT, then to TD, then to OCEAN, turn LEFT via RASSE to CONGA, continue on terminal transition routes.

CONGA 2W
Climb on 358° track to 400', turn RIGHT to ZAO, ZAO R-040 to D16.1 SMT (D12.5 MCU), turn RIGHT, intercept SMT R-274 inbound to D6.0 SMT, turn RIGHT to DOCTA, turn LEFT to OCEAN, turn LEFT via RASSE to CONGA, continue on terminal transition routes.

If ZAO u/s on 358° track to MCU 3.3 DME, turn RIGHT, 040° track to MCU 13.8 DME (SMT 16.2 DME), cross at 4000', turn RIGHT, intercept SMT R-274 inbound and continue on SID.

❷ If TD not available EXPECT RADAR vectors to CONGA.

NOT TO SCALE

Grnd speed-KT

5.4% V/V (fpm)

75

100

150

200

250

300

410

547

820

1094

1367

1641

VMMC/MFM
MACAO INTL

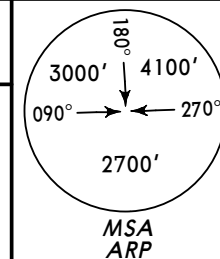
JEPPESEN
24 JAN 14 **10-3X** **Eff 6 Feb**

MACAO, PR OF CHINA

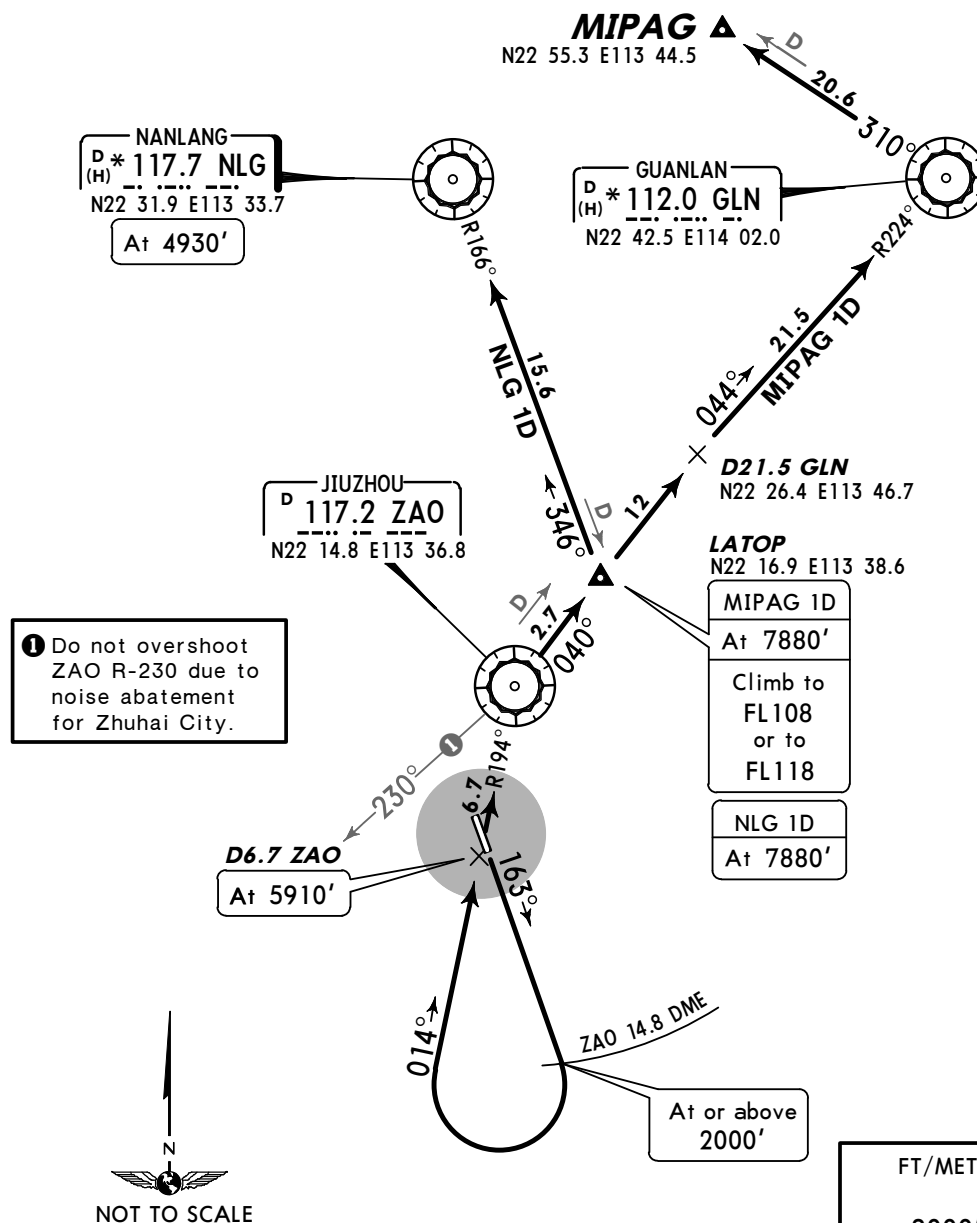
SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



MIPAG 1D [MIPA1D]
NLG 1D
RWY 16 DEPARTURES
TO BE USED WHEN MCU U/S



1 Do not overshoot ZAO R-230 due to noise abatement for Zhuhai City.

These SIDs require a minimum climb gradient of 3.8% until reaching 7880'.

Gnd speed-KT	75	100	150	200	250	300
3.8% V/V (fpm)	289	385	577	770	962	1155

If unable to comply inform MACAO Ground at first contact.

FT/METER CONVERSION
QNH

2000'	-	610m
4930'	-	1500m
5910'	-	1800m
7880'	-	2400m
9000'	-	2700m

FL CONVERSION

FL108	-	FL3300m
FL118	-	FL3600m

MAX 205 KT during departure turn.

SID	ROUTING
MIPAG 1D	Climb straight ahead, at ZAO 14.8 DME turn RIGHT, intercept ZAO R-194 inbound to ZAO, ZAO R-040 via LATOP to D21.5 GLN, intercept GLN R-224 inbound to GLN, turn LEFT, GLN R-310 to MIPAG.
NLG 1D	Climb straight ahead, at ZAO 14.8 DME turn RIGHT, intercept ZAO R-194 inbound to ZAO, ZAO R-040 to LATOP, turn LEFT, intercept NLG R-166 inbound to NLG.

VMMC/MFM
MACAO INTL

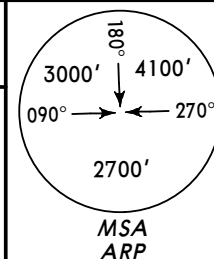
JEPPESSEN MA
24 JAN 14 (10-3X1) Eff 6 Feb

MACAO, PR OF CHINA

SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



**MIPAG 5D [MIPA5D], MIPAG 9D [MIPA9D]
NLG 5D, NLG 9D
RWYS 34, 16 DEPARTURES**

MIPAG ▲

N22 55.3 E113 44.5

NANLANG
D * 117.7 NLG
(H) _ . _ . _ .
N22 31.9 E113 33.7
At 4930'

GUANLAN
D
(H) * 112.0 GLN
N22 42.5 E114 02.0

JIUZHOU
D 117.2 ZAO
N22 14.8 E113 36.8

MIPAG 5D
Climb to
FL108

D21.5 GLN
N22 26.4 E113 46.7

LATOP
N22 16.9 E113 38.6

MIPAG 9D
At 7880'
Climb to FL108

NLG 9D
At 7880'

MACAO
D 116.4 MCU
N22 08.1 E113 35.9

MIPAG 9D NLG 9D
A† 5910'

❶ Do not overshoot ZAO R-230 due to noise abatement for Zhuhai City.

FT/METER CONVERSION

QNH

400'	-	120m
2000'	-	610m
4930'	-	1500m
5910'	-	1800m
7880'	-	2400m
9000'	-	2700m

FL CONVERSION

FL108 - FL3300m

These SIDs require minimum climb gradients of

MIPAG 5D: 4.8% until reaching FL108.

NLG 5D: 4.8% until reaching 4930'.

MIPAG 9D, NLG 9D: 3.8% until reaching 7880'.

Gnd speed-KT	75	100	150	200	250	300
4.8% V/V (fpm)	365	486	729	972	1215	1458
3.8% V/V (fpm)	289	385	577	770	962	1155

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn.

SID	RWY	ROUTING
MIPAG 5D	34	Climb on 358° track to 400', turn RIGHT to ZAO, ZAO R-040 to D21.5 GLN, turn RIGHT, intercept GLN R-224 inbound to GLN, turn LEFT, GLN R-310 to MIPAG.
MIPAG 9D IF MCU U/S REQUEST MIPAG 1D	16	Climb straight ahead, at MCU 8.5 DME turn RIGHT, intercept MCU R-196 inbound to MCU, MCU R-019 to LATOP, turn RIGHT, intercept ZAO R-040 to D21.5 GLN, intercept GLN R-224 inbound to GLN, turn LEFT, GLN R-310 to MIPAG.
NLG 5D	34	Climb on 358° track to 400', turn RIGHT to ZAO, ZAO R-040 to LATOP, turn LEFT, intercept NLG R-166 inbound to NLG.
NLG 9D IF MCU U/S REQUEST NLG 1D	16	Climb straight ahead, at MCU 8.5 DME turn RIGHT, intercept MCU R-196 inbound to MCU, MCU R-019 to LATOP, turn LEFT, intercept NLG R-166 inbound to NLG.

CHANGES: MIPAG SIDs established; ZAO DME commissioned.

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VMMC/MFM
MACAO INTL

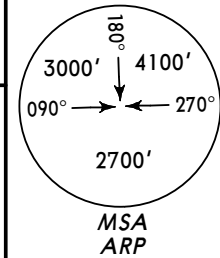
JEPPESEN
24 JAN 14 **(10-3X2)** **Eif 6 Feb**

MACAO, PR OF CHINA

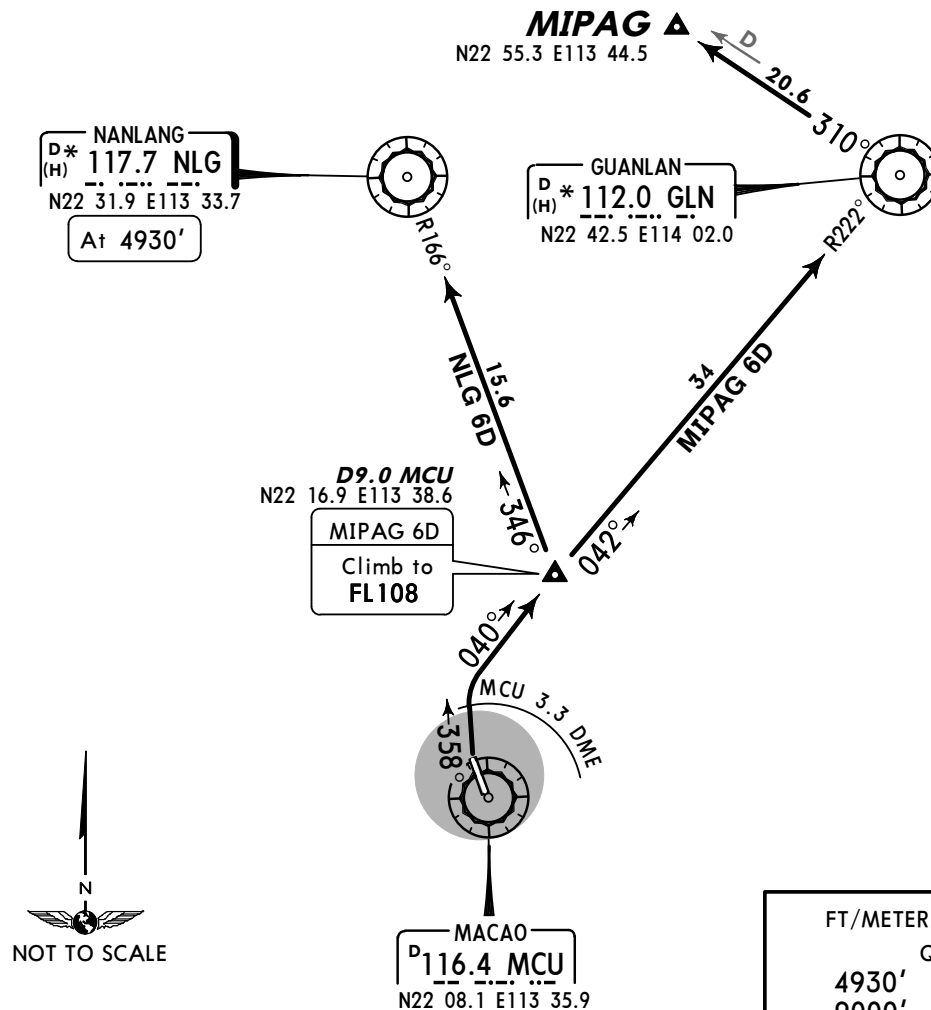
SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



MIPAG 6D [MIPA6D]
NLG 6D
RWY 34 DEPARTURES
TO BE USED WHEN ZAO U/S



FT/METER CONVERSION

QNH

4930' - 1500m

9000' - 2700m

FL CONVERSION

FL108 - FL3300m

These SIDs require a minimum climb gradient of

MIPAG 6D: 4.8% until reaching FL108.

NLG 6D: 4.8% until reaching 4930'.

Gnd speed-KT	75	100	150	200	250	300
4.8% V/V (fpm)	365	486	729	972	1215	1458

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn.

SID	ROUTING
MIPAG 6D	On 358° track, at MCU 3.3 DME turn RIGHT, 040° track to D9.0 MCU, intercept GLN R-222 inbound to GLN, turn LEFT, GLN R-310 to MIPAG
NLG 6D	On 358° track, at MCU 3.3 DME turn RIGHT, 040° track to D9.0 MCU, turn LEFT, intercept NLG R-166 inbound to NLG.

CHANGES: SID MIPAG 6D established.

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VMMC/MFM
MACAO INTL

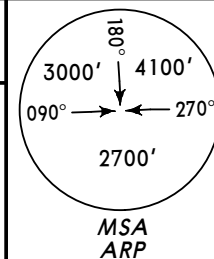
JEPPESEN
24 JAN 14 **10-3X3** Eff 6 Feb

MACAO, PR OF CHINA

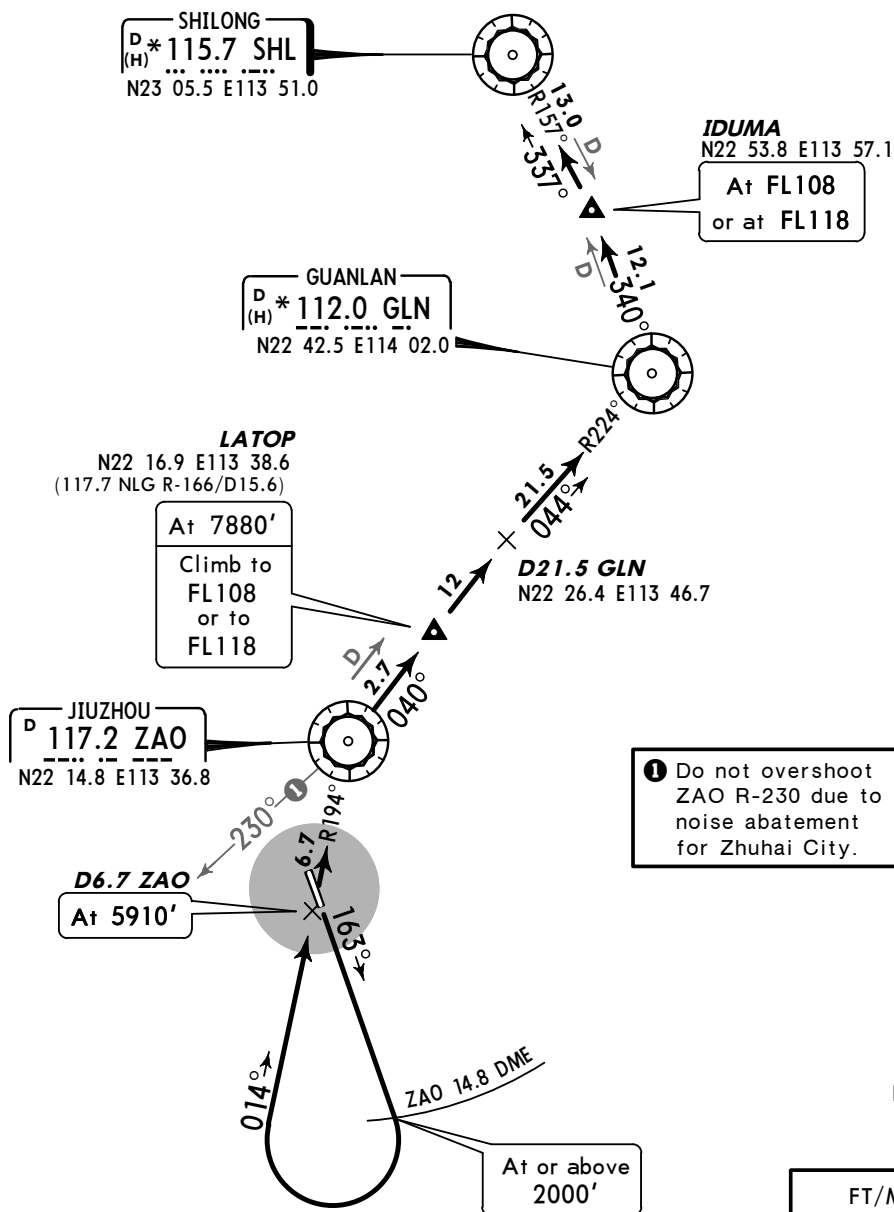
SIC

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



SHL 1D
RWY 16 DEPARTURE
TO BE USED WHEN MCU U/S



This SID requires a minimum climb gradient of 3.8% until reaching 7880'.

Gnd speed-KT	75	100	150	200	250	300
3.8% V/V (fpm)	289	385	577	770	962	1155

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn.

ROUTING

Climb straight ahead, at ZAO 14.8 DME turn RIGHT, intercept ZAO R-194 inbound to ZAO, ZAO R-040 via LATOP to D21.5 GLN, intercept GLN R-224 inbound to GLN, GLN R-340 to IDUMA, turn LEFT, intercept SHL R-157 inbound to SHL.

FT/METER CONVERSION	
QNH	
2000'	610m
5910'	1800m
7880'	2400m
9000'	2700m

FL CONVERSION	
FL108	FL3300m
FL118	FL3600m

VMMC/MFM
MACAO INTL

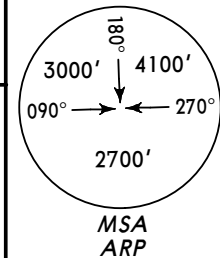
JEPPesen
24 JAN 14 **10-3X4** **E1f 6 Feb**

MACAO, PR OF CHINA

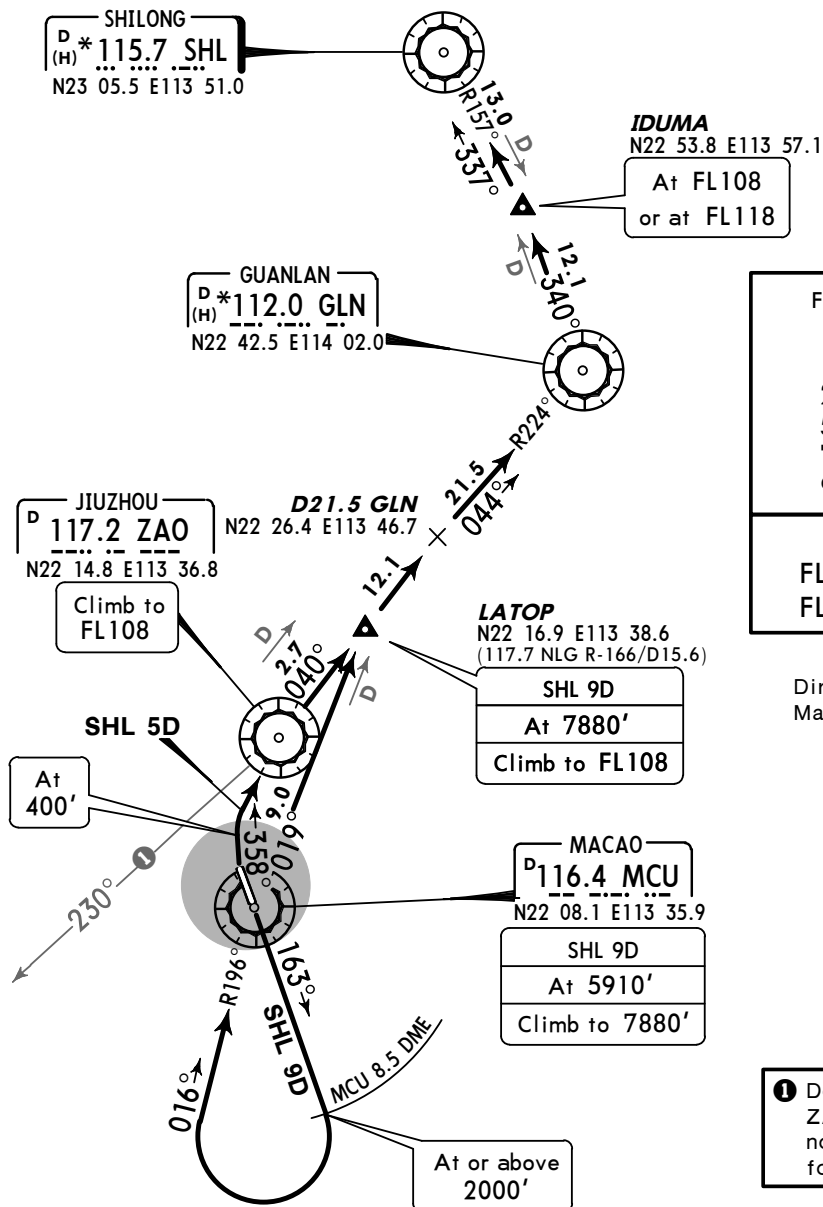
SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



SHL 5D, SHL 9D **RWYS 34, 16 DEPARTURES**



FT/METER CONVERSION

QNH

400'	-	120m
2000'	-	610m
5910'	-	1800m
7880'	-	2400m
9000'	-	2700m

FL CONVERSION

FL108	-	FL3300m
FL118	-	FL3600m

Direct distance from
Macao Intl to:
ZAO 6 NM



1 Do not overshoot
ZAO R-230 due to
noise abatement
for Zhuhai City.

These SIDs require minimum climb gradients
of

SHL 5D: 4.8% until leaving FL108.

SHL 9D: 3.8% until leaving 7880'.

Gnd speed-KT	75	100	150	200	250	300
4.8% V/V (fpm)	365	486	729	972	1215	1458
3.8% V/V (fpm)	289	385	577	770	962	1155

If unable to comply inform MACAO Ground at
first contact.

MAX 205 KT during departure turn.

SID	RWY	ROUTING
SHL 5D	34	Climb on 358° track to 400', turn RIGHT to ZAO, ZAO R-040 to D21.5 GLN, intercept GLN R-224 inbound to GLN, GLN R-340 to IDUMA, turn LEFT, intercept SHL R-157 inbound to SHL.
SHL 9D IF MCU U/S REQUEST SHL 1D	16	Climb straight ahead, at MCU 8.5 DME turn RIGHT, intercept MCU R-196 inbound to MCU, MCU R-019 to LATOP, turn RIGHT, intercept ZAO R-040 to D21.5 GLN, intercept GLN R-224 inbound to GLN, GLN R-340 to IDUMA, turn LEFT, intercept SHL R-157 inbound to SHL.

VMMC/MFM
MACAO INTL

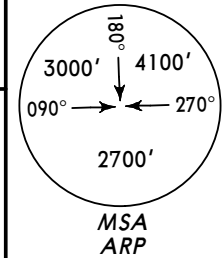
JEPPESEN
24 JAN 14 **10-3X5** **E1f 6 Feb**

MACAO, PR OF CHINA

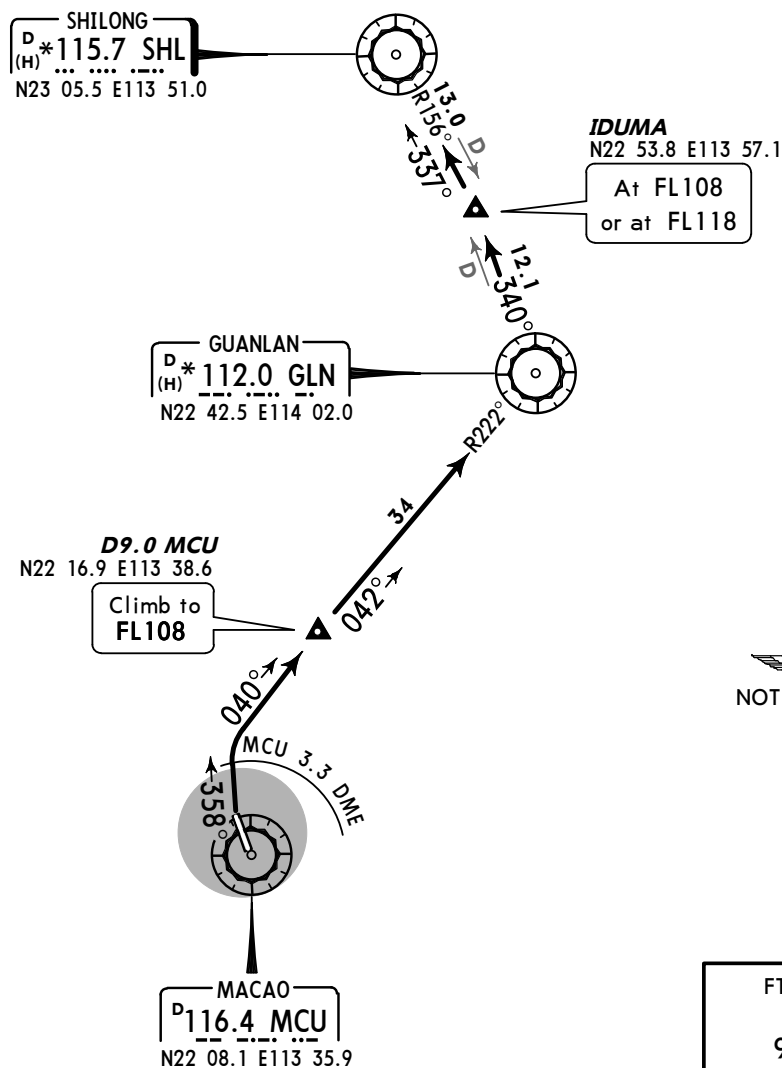
SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'



SHL 6D
RWY 34 DEPARTURE
TO BE USED WHEN ZAO U/S



FT/METER CONVERSION
QNH
9000' - 2700m

FL CONVERSION
FL108 - FL3300m
FL118 - FL3600m

This SID requires a minimum climb gradient of 4.8% until leaving FL108.

Gnd speed-KT	75	100	150	200	250	300
4.8% V/V (fpm)	365	486	729	972	1215	1458

If unable to comply inform MACAO Ground at first contact.

MAX 205 KT during departure turn.

ROUTING

On 358° track, at MCU 3.3 DME turn RIGHT, 040° track to D9.0 MCU, intercept GLN R-222 inbound to GLN, GLN R-340 to IDUMA, turn LEFT, intercept SHL R-156 inbound to SHL.

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MACAO INTL

24 JAN 14 10-3X6 Eff 6 Feb

MACAO, PR OF CHINA

SID

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'
Owing to the proximity of Hong Kong Intl airport, pilots departing towards Hong Kong shall follow the SID until LKC. Any deviation could result in direct conflict with Hong Kong traffic.

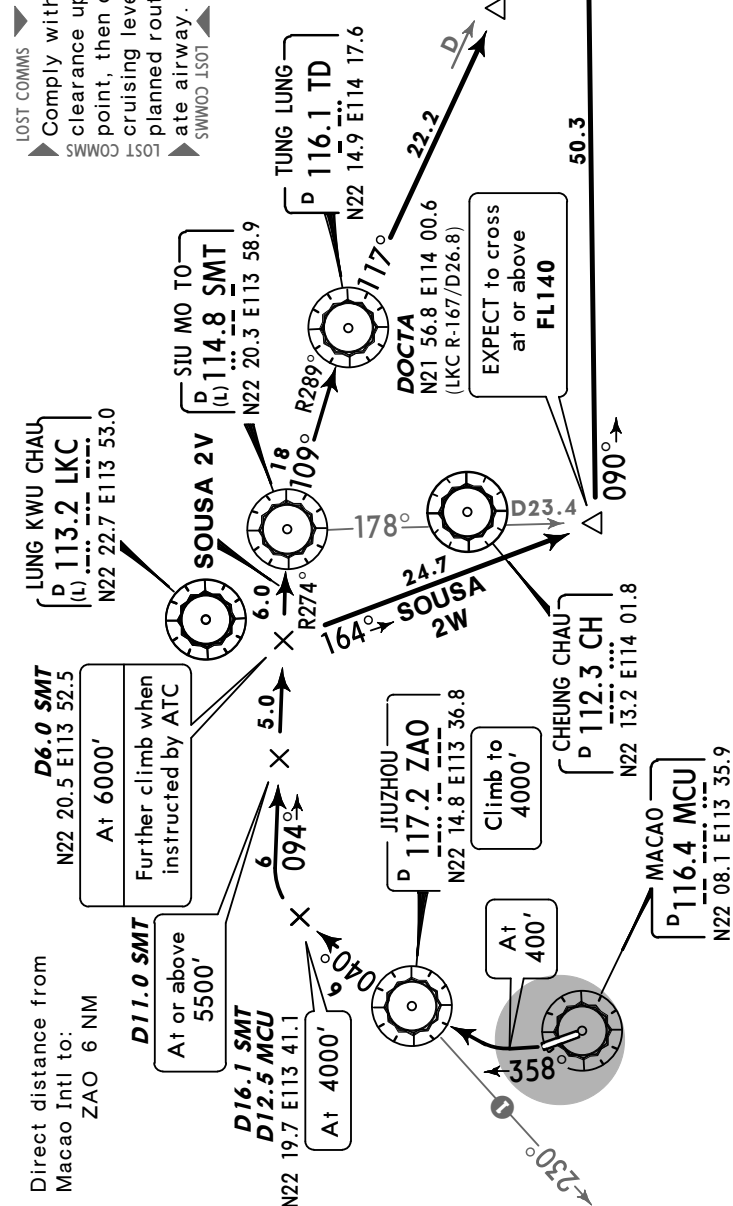
SOUSA 2V [SOUS2V]
SOUSA 2W [SOUS2W]
RWY 34 DEPARTURES
NOT AVAILABLE IF SMT U/S
SPEED MAX 250 KT
BELOW FL110

FT/METER CONVERSION	
FT	METER
400'	120m
4000'	1220m
5500'	1680m
6000'	1830m
9000'	2700m

COMMS LOST COMMS

COMMS LOST COMMS
Comply with last acknowledged clearance up to the next reporting point, then climb to flight planned cruising level and follow the flight planned route to join the appropriate airway.
SWW03 LSOT SWW03 LSOT SWW03 LSOT

Do not overshoot ZAO R-230 due to noise abatement for Zhuhai City.



Gnd speed-KT	75	100	150	200	250	300
5.4% V/V (fpm)	410	547	820	1094	1367	1641

If unable to comply inform MACAO Ground at first contact.

These SIDs require a minimum climb gradient of 5.4% until leaving 5500' due to airspace restrictions.

ROUTING	
SID	ROUTING
SOUSA 2V	Climb on 358° track to 400', turn RIGHT to ZAO, ZAO R-040 to D16.1 SMT (D12.5 MCU), turn RIGHT, intercept SMT R-274 inbound to SMT, then to TD, turn RIGHT to SHELBY, then to LAKES, turn LEFT to SOUSA, continue on terminal transition routes.
SOUSA 2W	Climb on 358° track to 400', turn RIGHT to ZAO, ZAO R-040 to D16.1 SMT (D12.5 MCU), turn RIGHT, intercept SMT R-274 inbound to D6.0 SMT, turn RIGHT to DOCTA, turn LEFT via LAKES to SOUSA, continue on terminal transition routes.
If ZAO u/s on 358° track to MCU 3.3 DME, turn RIGHT, 040° track to MCU 13.8 DME (SMT 16.2 DME), cross at 4000', turn RIGHT, intercept SMT R-274 inbound and continue on SID.	
If TD not available EXPECT RADAR vectors to SHELBY.	

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MACAO INTL

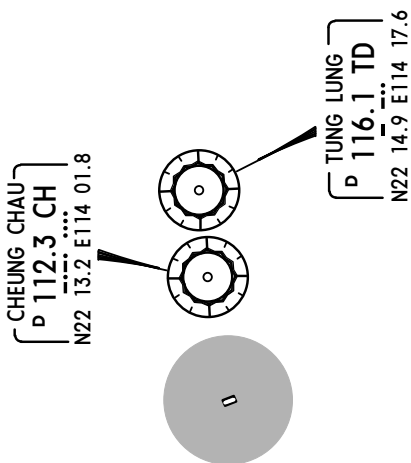
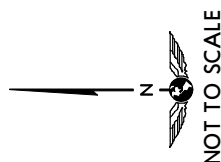
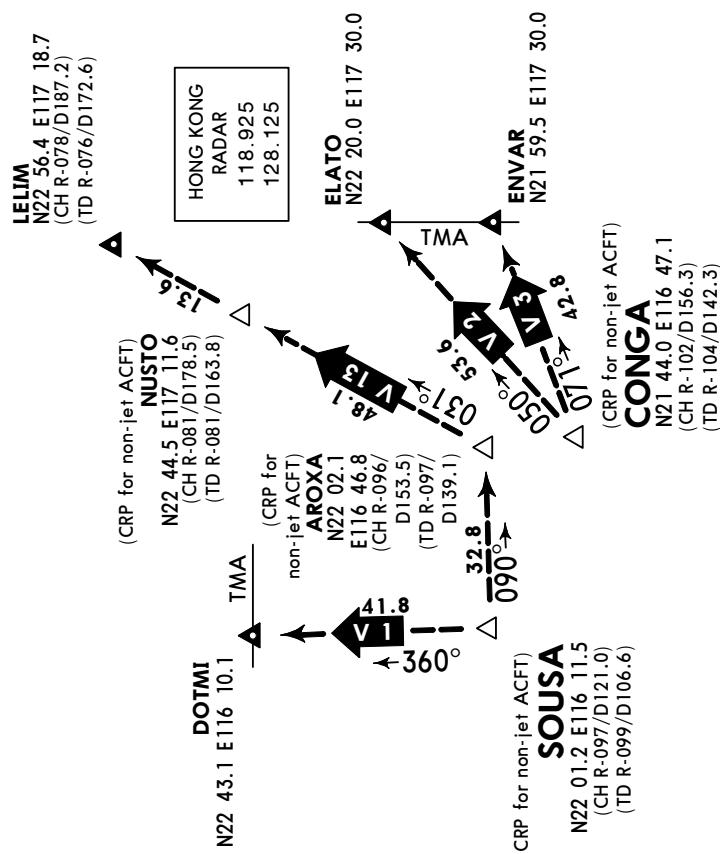
JEPPESEN
1 JAN 16 **10-3X7** Eff 7 Jan

MACAO, PR OF CHINA
TERMINAL TRANSITION ROUTE

Apt Elev
20'

Trans level: By ATC Trans alt: 9000'

TERMINAL TRANSITION ROUTES **V1, V2, V3, V13**



Aircraft leaving HONG KONG FIR via terminal transition route V13 are required to reach assigned cruising level at or before AROXA.

Aircraft are required to reach assigned cruising level at or before TMA boundary as indicated below:

TMA Exit Point	Specified Location
DOTMI	SOUSA (41.8 NM before DOTMI)
ELATO	20 NM before ELATO
ENVAR	ENVAR

VMMC/MFM
MACAO INTL

JEPPesen
1 JAN 16 **10-3X8** Eff 7 Jan

MACAO, PR OF CHINA

TERMINAL TRANSITION ROUTE

Apt Elev
20'

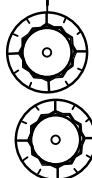
Trans level: By ATC Trans alt: 9000'

TERMINAL TRANSITION ROUTES **V4, V5, V10, V31, V32**

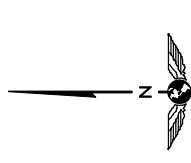
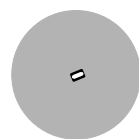
Aircraft are required to reach assigned cruising level at or before TMA boundary as indicated below:

TMA Exit Point	Specified Location
EPDOS	SURFA (22.7 NM before IDOSI)
IDOSI	NOMAN 20 NM before NOMAN
NOMAN	20 NM before SABNO
SABNO	DONKI (40.7 NM before SIKOU)
SIKOU	

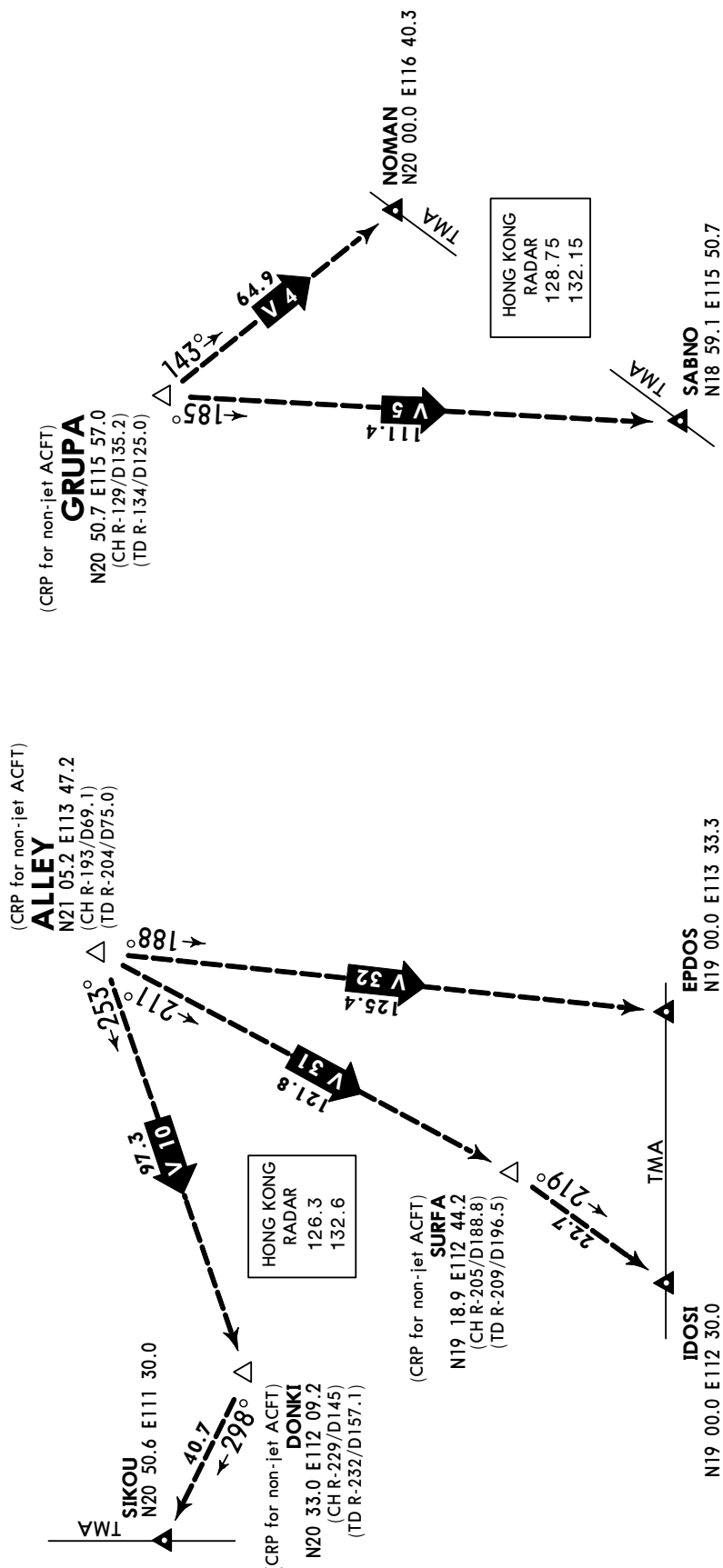
TUNG LUNG
D 116.1 TD
N22 14.9 E114 17.6



CHEUNG CHAU
D 112.3 CH
N22 13.2 E114 01.8



NOT TO SCALE



VMMC/MFM

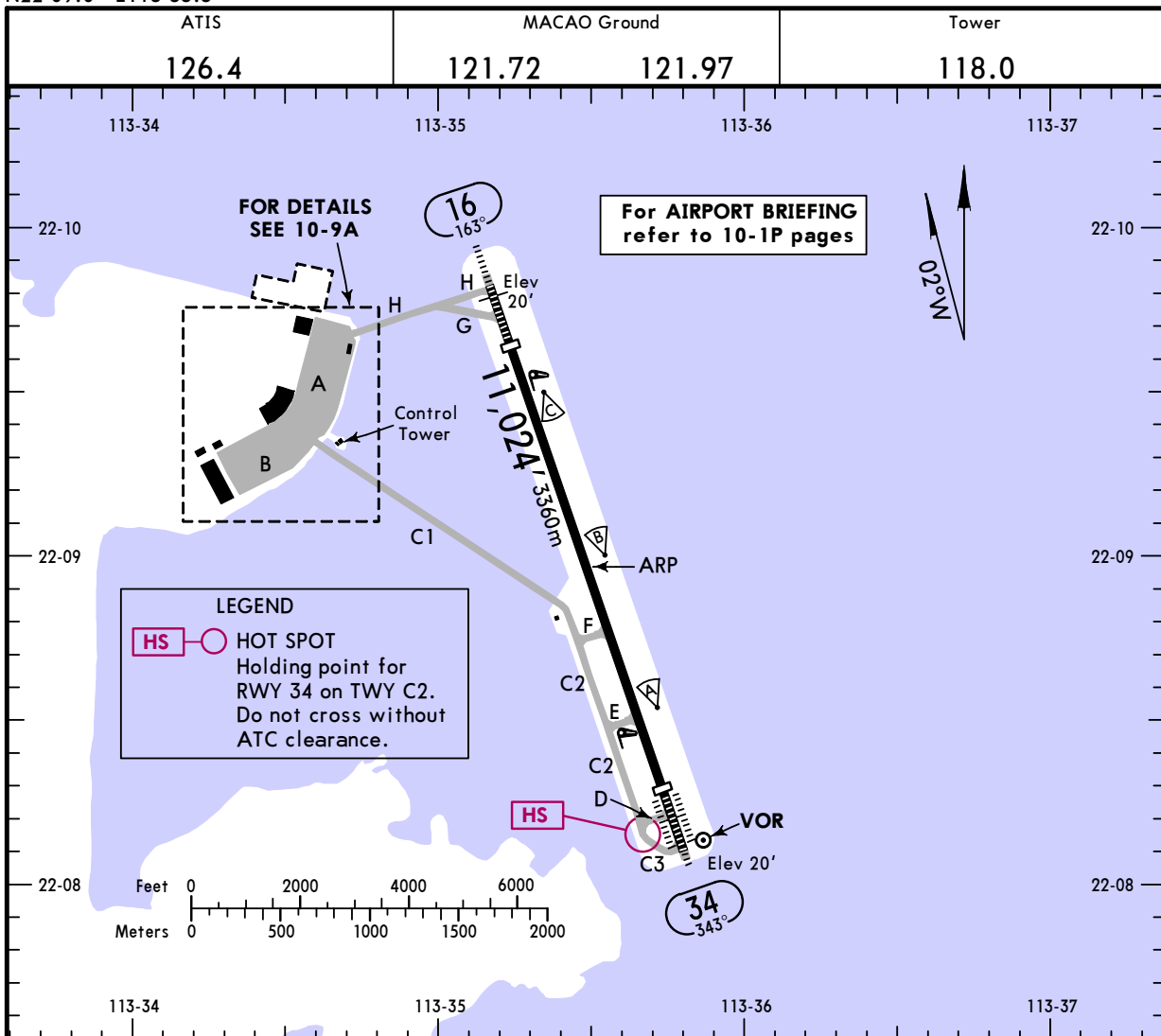
Apt Elev **20'**
N22 09.0 E113 35.5

JEPPesen

17 FEB 17 **(10-9)** Eff 2 Mar

MACAO, PR OF CHINA

MACAO INTL



ADDITIONAL RUNWAY INFORMATION

RWY		RVR	USABLE LENGTHS		TAKE-OFF	WIDTH
			Threshold	Landing Beyond — Glide Slope		
16	HIRL ① CL ② HIALS PAPI (3.0°)	RVR	9400' 2865m		③ ④	148'
34	HIRL ① CL ② HIALS SFL TDZ PAPI-R (3.0°)	RVR	9613' 2930m	8580' 2615m		45m

① spacing 60m.

② spacing 30m.

③ TAKE-OFF RUN AVAILABLE

RWY 16:

From rwy head 10,581' (3225m)

twy G int 10,105' (3080m)

RWY 34:

From rwy head 10,827' (3300m)

twy D int 10,171' (3100m)

twy E int 8301' (2530m)

twy F int 6611' (2015m)

④ Additional 197'/60m available as stopway.

TAKE-OFF

**AIR CARRIER
All Rwys**

LVP must be in force

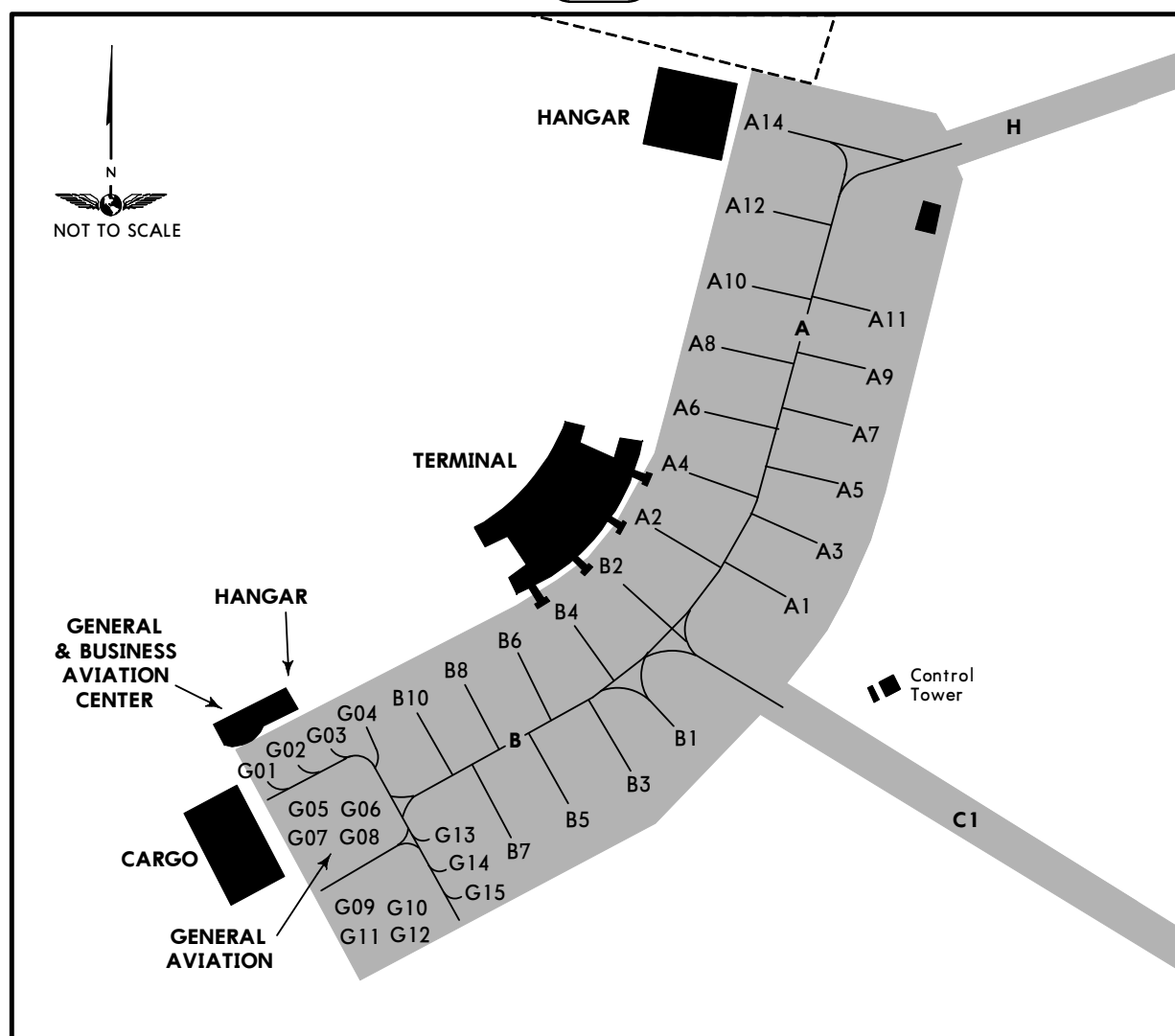
	RL & CL	RCLM (DAY only) or RL	RCLM (DAY only) or RL
A			
B	200m (175m)	250m	400m
C			
D	250m (200m)	300m	

VMMC/MFM

17 FEB 17 **10-9A** Eff 2 Mar

MACAO, PR OF CHINA

MACAO INTL

**INS COORDINATES**

STAND No.	COORDINATES	STAND No.	COORDINATES
A1	N22 09.4 E113 34.6	B8	N22 09.4 E113 34.4
A2	N22 09.4 E113 34.5	B10	N22 09.3 E113 34.4
A3	N22 09.4 E113 34.6	G01 thru G08	N22 09.3 E113 34.3
A4	N22 09.4 E113 34.5	G09	N22 09.2 E113 34.3
A5	N22 09.5 E113 34.7	G10 thru G12	N22 09.2 E113 34.4
A6	N22 09.5 E113 34.5	G13	N22 09.3 E113 34.4
A7	N22 09.5 E113 34.7	G14, G15	N22 09.2 E113 34.4
A8	N22 09.6 E113 34.6		
A9	N22 09.5 E113 34.7		
A10	N22 09.6 E113 34.6		
A11	N22 09.6 E113 34.7		
A12	N22 09.6 E113 34.6		
A14	N22 09.7 E113 34.6		
B1	N22 09.3 E113 34.6		
B2	N22 09.4 E113 34.5		
B3	N22 09.3 E113 34.5		
B4	N22 09.4 E113 34.5		
B5	N22 09.3 E113 34.5		
B6	N22 09.4 E113 34.4		
B7	N22 09.2 E113 34.4		

VMMC/MFM

 **JEPPesen**
9 MAR 12 **(10-9B)**
MACAO, PR OF CHINA
MACAO INTL**ADVANCED VISUAL DOCKING GUIDANCE SYSTEM (AVDGS)****1. START-OF-DOCKING**

The system is started by pressing one of the aircraft type buttons on the operator panel. When the button has been pressed, "WAIT" will be displayed.

2. CAPTURE

The floating arrows indicate that the system is activated and in capture mode, searching for an approaching aircraft.

It shall be checked that the correct aircraft type is displayed. The lead-in line shall be followed.

THE PILOT MUST NOT PROCEED BEYOND THE BRIDGE, UNLESS THE ARROWS HAVE BEEN SUPERSEDED BY THE CLOSING RATE BAR.

3. TRACKING

When the aircraft has been caught by the laser, the floating arrow is replaced by the yellow centerline indicator.

A flashing red arrow indicates the direction to turn.

The vertical yellow arrow shows position in relation to the centerline. This indicator gives correct position and azimuth guidance.

4. CLOSING RATE

The closing rate is the final countdown from a specific distance to the stop position. A yellow vertical closing rate bar/centerline indicator appears with or without a digital countdown, depending on the configuration.

The closing rate bar represents the distance from stop, it consists of a number of rows representing 2'/0.5m per row. Each row turns off as the aircraft approaches stop (reducing the length of the bar, bottom upwards) and as the last row turns off, less than the interval for one row remains until "STOP" appears.

A digital countdown shows the distance to stop numerically, starting from 98'/30m.

The digital countdown also uses different decrements during the closing rate process.

Metric digital count starting with 3'/1m decrements from 98'/30m down to 7'/2m followed by 1'/0.2m decrements from 7'/2m down to 1'/0.2m and then followed by "STOP".

The pictures illustrate aircraft in the closing rate distance from stop position, slightly left of the center line. The red arrow indicates the direction to steer.

5. ALIGNED TO CENTER

The aircraft is at the displayed distance from the stop position. The absence of any direction arrow indicates an aircraft on the centerline.

6. SLOW DOWN (DECREASE SPEED)

AVDGS is configured with a slowdown active zone (distances set from the stop position, between 20'/6m to 79'/24m) according to an acceptable docking speed (max allowed speed, 7'/2m/s).

Note: When 7'/2m/s is rounded down to a single digit, it is approximately 7 km/h, 4 mph or 3 knots.

If the aircraft is approaching faster than the accepted speed, the system will show "SLOW" or "SLOW DOWN" as a warning to the pilots.

7. AZIMUTH GUIDANCE

The aircraft is at the displayed distance from the stop-position. The yellow arrow indicates an aircraft to the right of the centerline, and the red flashing arrow indicates the direction to turn.

8. STOP POSITION REACHED

When the correct stop-position is reached, the display will show "STOP" with a red border or with red lights.

9. DOCKING COMPLETED

When the aircraft has parked, "OK" will be displayed.

10. CHOCK ON

"CHOCK ON" will be displayed, when the ground staff has put the chocks in front of the nose wheel and press the Chocks On button on the Operator Panel.

11. STOP SHORT

If the aircraft is found standing still but has not reached the intended stop position, the message "STOP OK" will be shown after a pre-configured time.

12. WAIT

If some object is blocking the view toward the approaching aircraft or the detected aircraft is lost during docking close to "STOP", the display will show "WAIT".

The docking will continue as soon as the blocking object has disappeared or the system detects the aircraft again.

THE PILOT MUST NOT PROCEED BEYOND THE BRIDGE, UNLESS THE "WAIT" MESSAGE HAS BEEN SUPERSEDED BY THE CLOSING RATE BAR.

VMMC/MFM

9 MAR 12

**JEPPESEN**

10-9C

MACAO, PR OF CHINA
MACAO INTL**13. SLOW (IN ABNORMAL SITUATIONS)**

This display can be shown for two reasons:

A) BAD WEATHER CONDITION

During heavy fog, rain or snow, the visibility for the docking system can be reduced. When the system is activated and in capture mode, the display will disable the floating arrows and display "SLOW" and the aircraft Type.

As soon as the system detects the approaching aircraft, the vertical closing rate bar will appear.

If the system has been configured in this mode to make a shortened ID verification (check of engine position excluded), the aircraft symbol will blink to give attention.

B) AIRCRAFT LOST DURING DOCKING

If the aircraft is lost during docking far out from the bridge or PBB area, the display will show "SLOW". As soon as the system detects the approaching aircraft, the vertical closing rate bar will re-appear.

THE PILOT MUST NOT PROCEED BEYOND THE BRIDGE, UNLESS THE CLOSING RATE BAR IS SHOWN.

14. AIRCRAFT VERIFICATION FAILURE

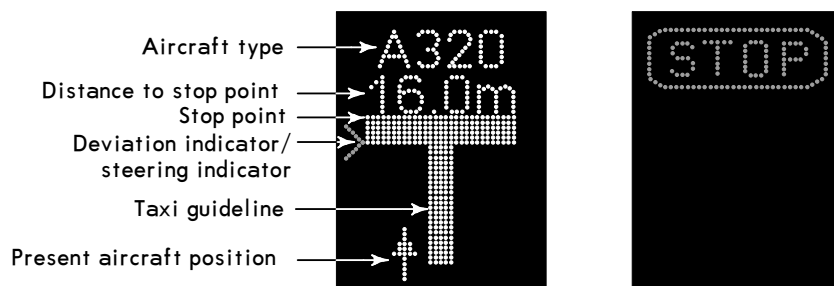
During entry into the stand, the aircraft geometry is being checked.

If, for any reason, aircraft verification is not made 39'/12m before the stop-position, the display will first show "WAIT" and make a second verification check. If this fails "STOP" and "ID FAIL" will be displayed.

THE PILOT MUST NOT PROCEED BEYOND THE BRIDGE WITHOUT MANUAL GUIDANCE, UNLESS THE WAIT MESSAGE HAS BEEN SUPERSEDED BY THE CLOSING RATE BAR.

15. TOO FAST

If the aircraft approaches with a speed higher than the docking system can handle, the message "STOP TOO FAST" will be displayed. The docking system must be re-started or the docking procedure completed by manual guidance.

DISPLAY OF IMAGES AND FUNCTIONS ON THE PANEL**Examples:**

Depending on the system type, displays can be slightly different or additional.

VMMC/MFM

17 FEB 17

**JEPPESEN**

(10-9D)

Eff 2 Mar

MACAO, PR OF CHINA
MACAO INTL**COLOR-CODED PUSHBACK PROCEDURES**

STAND NUMBER	RWY 16/34 DEPARTURE	
	Normal pushback and start-up	Pushback after engine start-up
A1 thru A12, A14, B1 thru B6, B8	BLUE	BLUE
B7, B10	GREEN	GREEN/PINK
G01 thru G15	FOLLOW BREAKAWAY POINT X, Y OR Z	NOT AUTHORIZED

COLOR CODE	DETAILED DESCRIPTION
BLUE	Aircraft pushback facing South or North depending on Runway-in-use. If necessary, special instruction will be issued by Control Tower. Startup can be commenced after the engines cross the white taxi line protection.
GREEN	Pushback of aircraft on B7 or B10 in normal situation shall be done by pushing the aircraft tail towards GAP, and then towed forward until breakaway point 1 for aircraft with wingspan less than 118'/36m (narrow body), and breakaway point 2 for aircraft with wingspan more than 118'/36m (wide body). Breakaway point 2 also applies for aircraft with APU problem on B7 or B10, and requires starting up engine on stand while no aircraft is parked on G05 thru G08. Except for start up on stands due to APU problem, other start up can only be commenced when the pushback finishes at breakaway point .
PINK	The pink procedure requires pushing the aircraft tail towards North until either the beginning of Taxiway C1 for Rwy 16 departure or taxiway A for Rwy 34 departure. Except for startup on stands due to APU problem, other startup can only be commenced when the pushback finishes. The procedure applies for pushback of aircraft with APU problem, which requires to start up engine on stand B7 or B10 while aircraft is parked on G05 thru G08.

Remarks

- For aircraft parked on stands B1 and B3, no simultaneous pushback is allowed.
- For aircraft start-up on the stand, coordination shall be done in advance among ATC, Pilot and AOCC (for follow-me to inspect the surrounding area of the aircraft involved) in order to guarantee ground safety.
- The breakaway point 1 mentioned above is the one at B7 and breakaway point 2 is the one between B5 and B7.
- For blue procedure, the color code may be omitted in the air-ground communication between ATC and pilot.

VMC/MFM

 **JEPPESEN**
17 FEB 17 (10-9E) Eff 2 Mar**MACAO, PR OF CHINA**
MACAO INTL**G01 thru G15 PUSHBACK/TOW PROCEDURES**

AIRCRAFT STAND	After pushback/towing nose wheel on breakaway point
G01 thru G06	X
G07 thru G10	Y
G11 thru G15	Z

Remarks

-All GA arrivals will be guided by follow-me to the designated aircraft stands.

-The breakaway points are located on the taxiway centre line:
X behind G03, Y ahead of G10 and Z behind G13.

-NO simultaneous pushback/tow operations on breakaway points
Y and Z are allowed.

-NO engine start up on stand before pushback/tow is allowed.
Exception can be considered for aircraft parked on G06, G08, G10
or G13 with coordination made in advance among AOCC,
Ground Handling Agent (GHA), pilot and ATC.

VMMC/MFM

 **JEPPESEN**
13 SEP 13
Eff 19 Sep **10-9S**
Standard
MACAO, PR OF CHINA
MACAO INTL

STRAIGHT-IN RWY		A	B	C	D
16	LOC ❶	720'(700') V3600m	720'(700') V3600m	720'(700') V3600m	720'(700') V3600m
	RNAV (LNAV) ❶ ❷	970'(950') V5000m	970'(950') V5000m	970'(950') V5000m	970'(950') V5000m
34	CAT 2 ILS ❸	120'(100') RA 100' R350m	120'(100') RA 100' R350m	120'(100') RA 100' R350m	120'(100') RA 100' R350m
	ILS ❸	220'(200') V800m	220'(200') V800m	220'(200') V800m	220'(200') V800m
	ALS out	1200m	1200m	1200m	1200m
	LOC ❶ ❸	310'(290') V1200m	310'(290') V1200m	310'(290') V1200m	310'(290') V1600m
	ALS out	1400m	1400m	1400m	V1600m
	RNAV (LNAV/VNAV) ❸	540'(520') V2700m	540'(520') V2700m	540'(520') V2700m	540'(520') V2700m
	RNAV (LNAV) ❶ ❸	570'(550') V2900m	570'(550') V2900m	570'(550') V2900m	570'(550') V2900m
	VOR ❶ ❸	550'(530') V2000m	550'(530') V2000m	550'(530') V2400m	550'(530') V3200m

❶ Continuous Descent Final Approach.

❷ Missed apch climb gradient mim 3.0% up to 5500'.

❸ Missed apch climb gradient mim 5.4% up to 5500'.

CIRCLE-TO-LAND ❹	100 KT	135 KT	160 KT	D
WITH PRESCRIBED FLIGHT TRACKS TO RWY 16	660'(640') ceil1500' V6000m	770'(750') ceil1500' V6000m	870'(850') ceil1500' V6000m	NOT APPLICABLE

❹ After apch to rwy 16: NOT APPLICABLE.

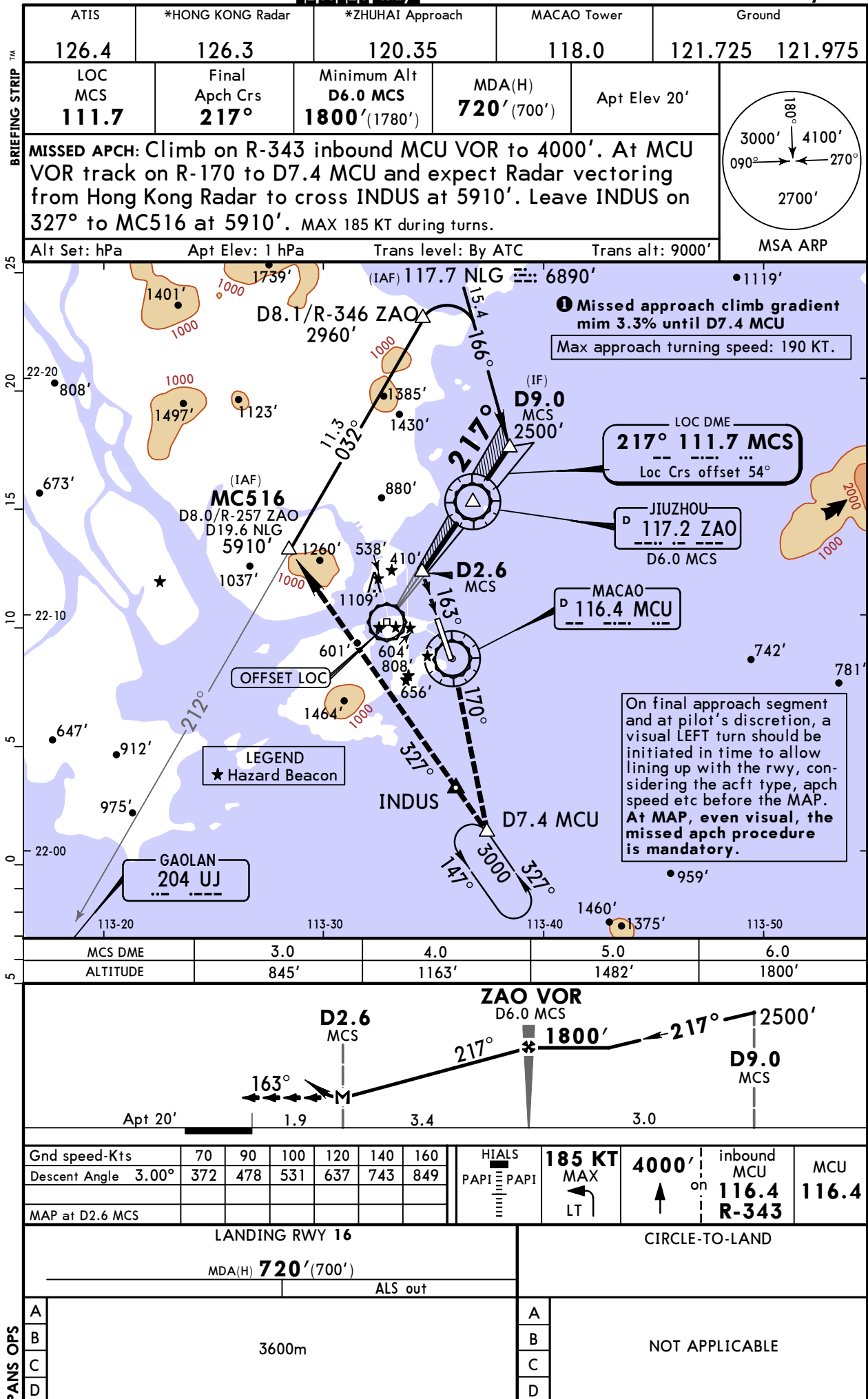
TAKE-OFF RWY 16, 34

LVP must be in Force						
	RL, CL & mult. RVR required	RL & CL	RCLM (DAY only) or RL	RCLM (DAY only) or RL	NIL (DAY only)	
A						
B	175m	200m	250m	400m	500m	
C						
D	200m	250m	300m			

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JEPPESSEN
13 MAY 16
[Eff] [26 May] (11-1)

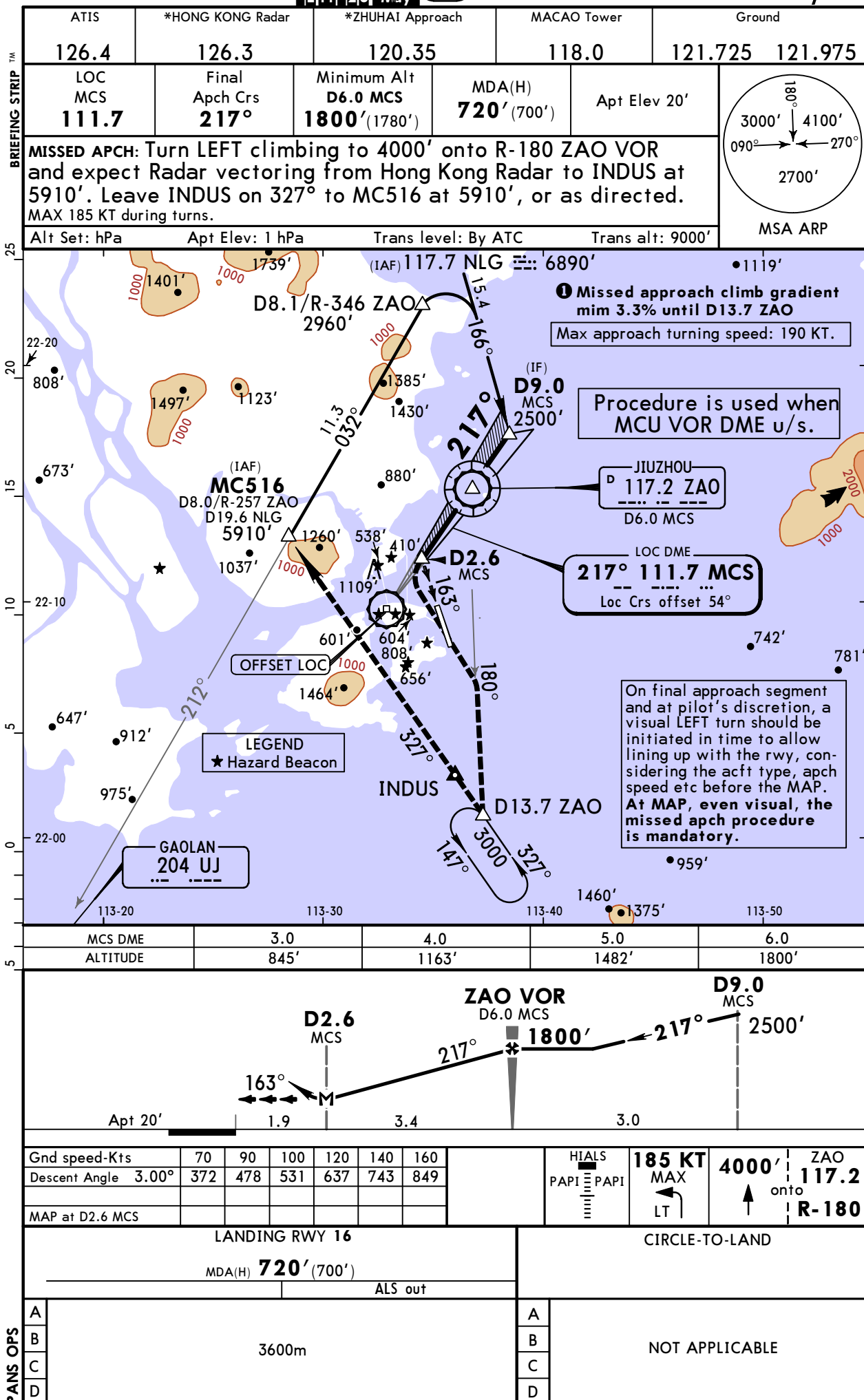
MACAO, PR OF CHINA
LOC DME Z Rwy 16



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JEPPesen
13 MAY 16
[Eff] 26 May 11-2

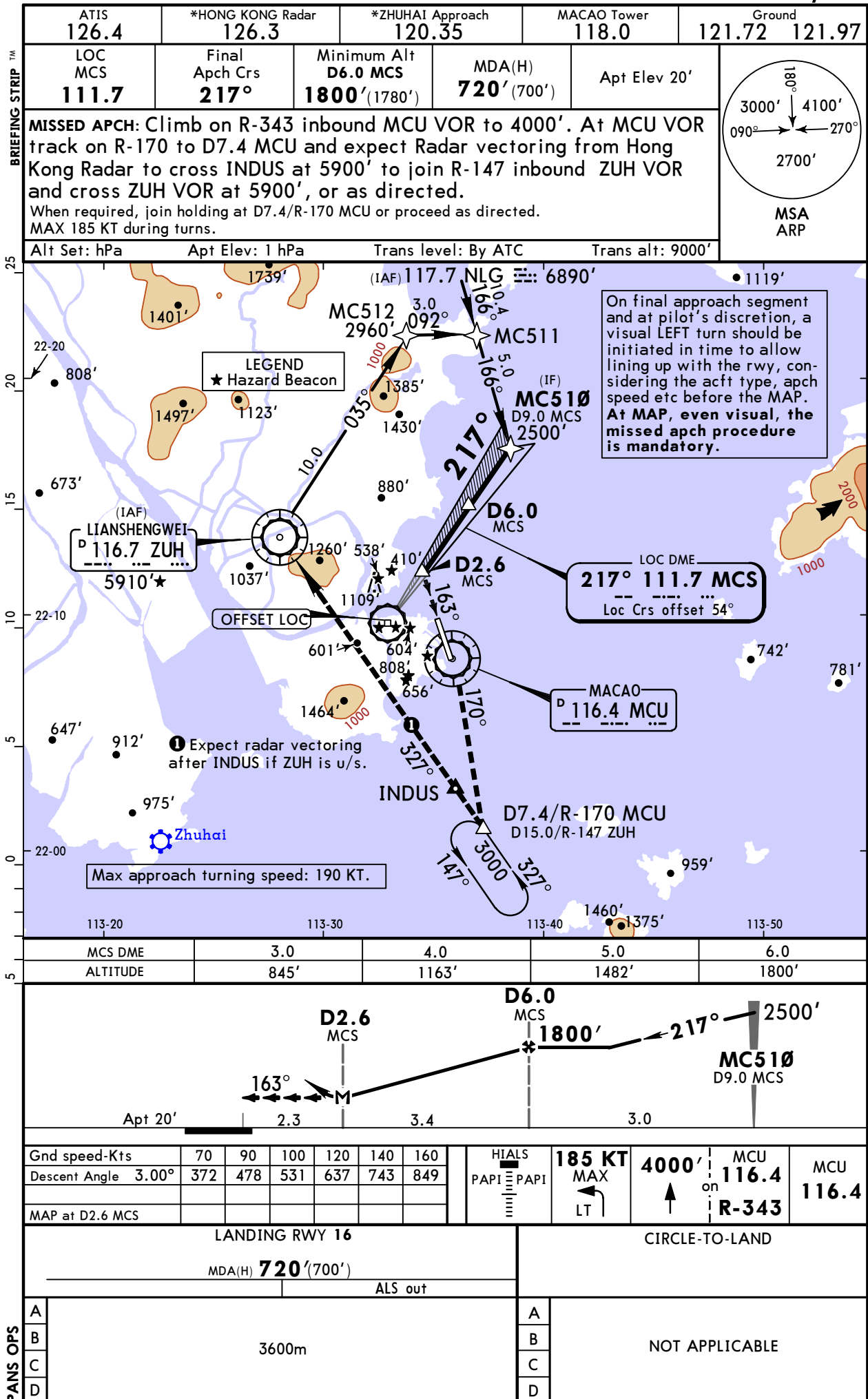
MACAO, PR OF CHINA
LOC DME Y Rwy 16



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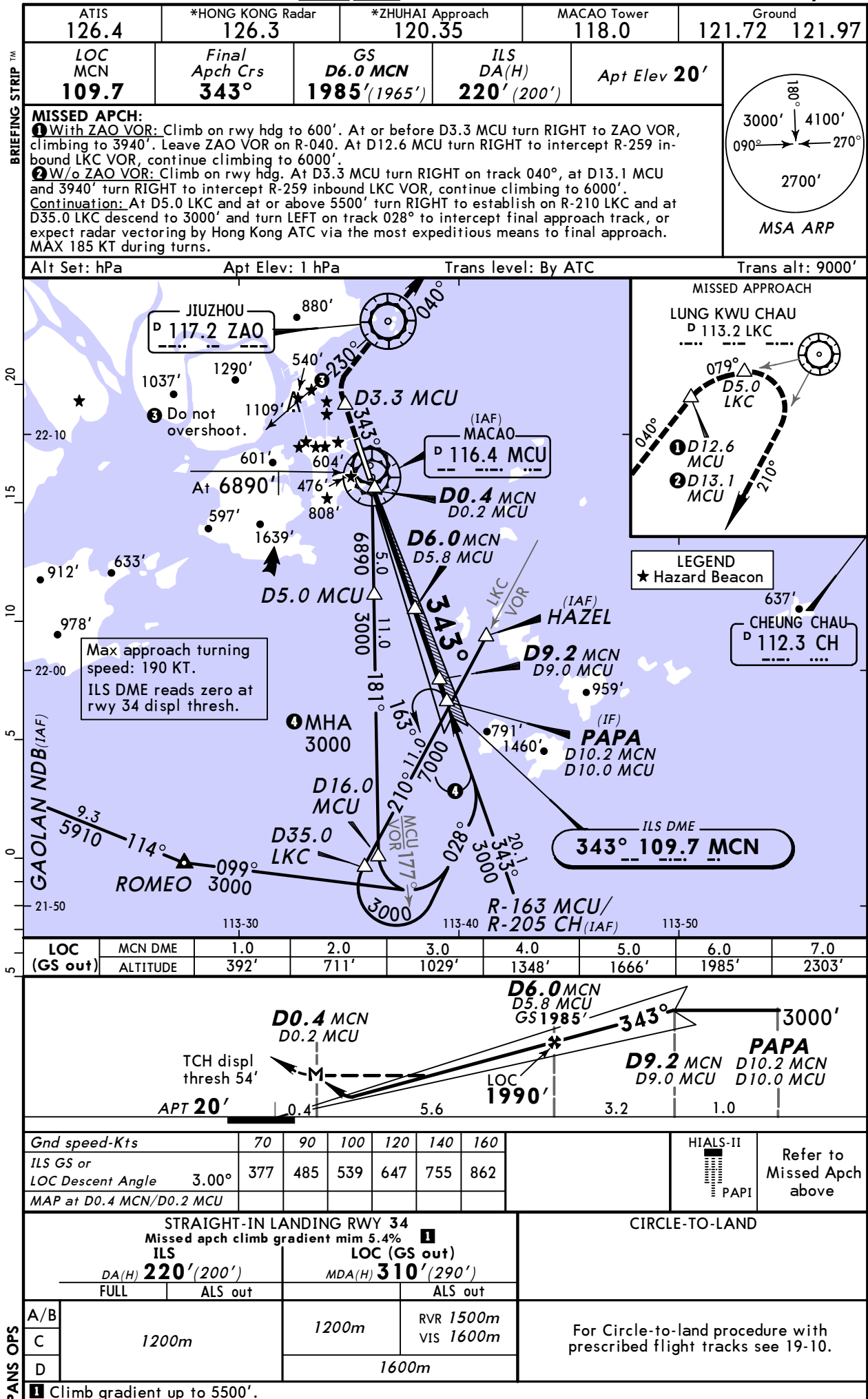
JEPPesen
1 JUL 16 (11-3)

MACAO, PR OF CHINA
RNAV LOC DME X Rwy 16



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MACAO INTL

JEPPesen **MACAO, PR OF CHINA**
24 JAN 14 **(11-4)** **MISSED APCH CLIMB**
Eff 6 Feb **GRADIENT MIM 5.4%** **ILS Z Rwy 34**



VMMC/MFM
MACAO INTL

24 JAN 14
Eff 6 Feb

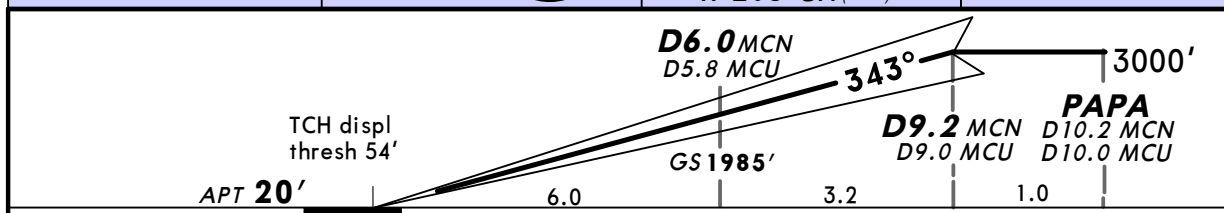
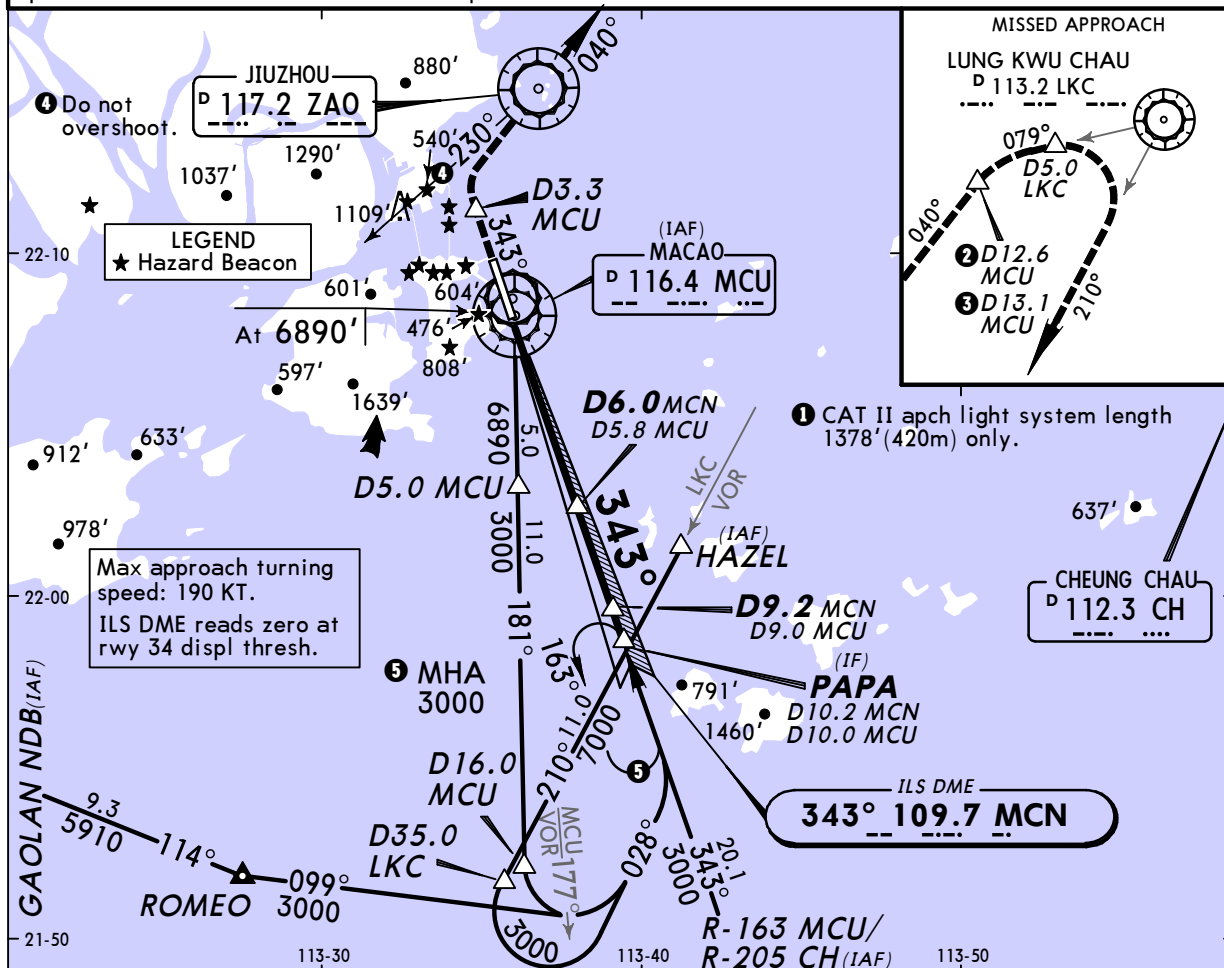
11-4A

MISSED APCH CLIMB
GRADIENT MIM 5.4%

MACAO, PR OF CHINA
CAT II ILS Z Rwy 34

BRIEFING STRIP

ATIS 126.4	*HONG KONG Radar 126.3	*ZHUHAI Approach 120.35	MACAO Tower 118.0	Ground 121.72 121.97
LOC MCN 109.7	Final Apch Crs 343°	GS D6.0 MCN 1985' (1965')	CAT II ILS RA 100' DA(H) 120' (100')	Apt Elev 20'
MISSED APCH: ② With ZAO VOR: Climb on rwy hdg to 600'. At or before D3.3 MCU turn RIGHT to ZAO VOR, climbing to 3940'. Leave ZAO VOR on R-040. At D12.6 MCU turn RIGHT to intercept R-259 inbound LKC VOR, continue climbing to 6000'. ③ W/o ZAO VOR: Climb on rwy hdg. At D3.3 MCU turn RIGHT on track 040°, at D13.1 MCU and 3940' turn RIGHT to intercept R-259 inbound LKC VOR, continue climbing to 6000'. Continuation: At D5.0 LKC and at or above 5500' turn RIGHT to establish on R-210 LKC and at D35.0 LKC descend to 3000' and turn LEFT on track 028° to intercept final approach track, or expect radar vectoring by Hong Kong ATC via the most expeditious means to final approach. MAX 185 KT during turns.				
<p>MSA ARP</p>				
Alt Set: hPa Apt Elev: 1 hPa Trans level: By ATC Trans alt: 9000' Special Aircrew & Acft Certification Required.				



Gnd speed-Kts	70	90	100	120	140	160	HI/LS-II PAPI		Refer to Missed Apch above
GS	3.00°	377	485	539	647	755			

STRAIGHT-IN LANDING RWY 34
Missed apch climb gradient mim 5.4% **①**
CAT II ILS
RA 100'
DA(H) **120' (100')**

RVR 350m
① Climb gradient up to 5500'.

PANS OPS

VMMC/MFM
MACAO INTL

24 JAN 14
Eff 6 Feb

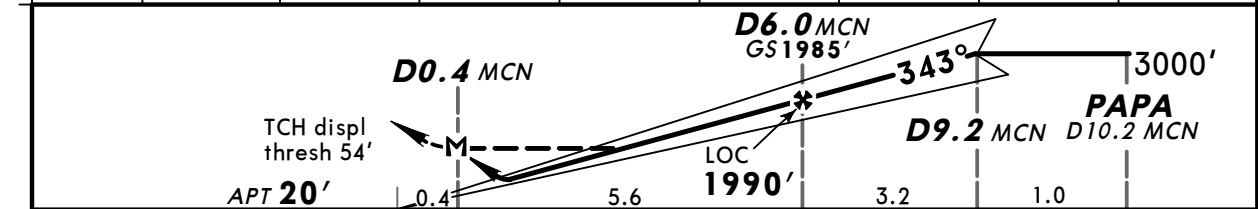
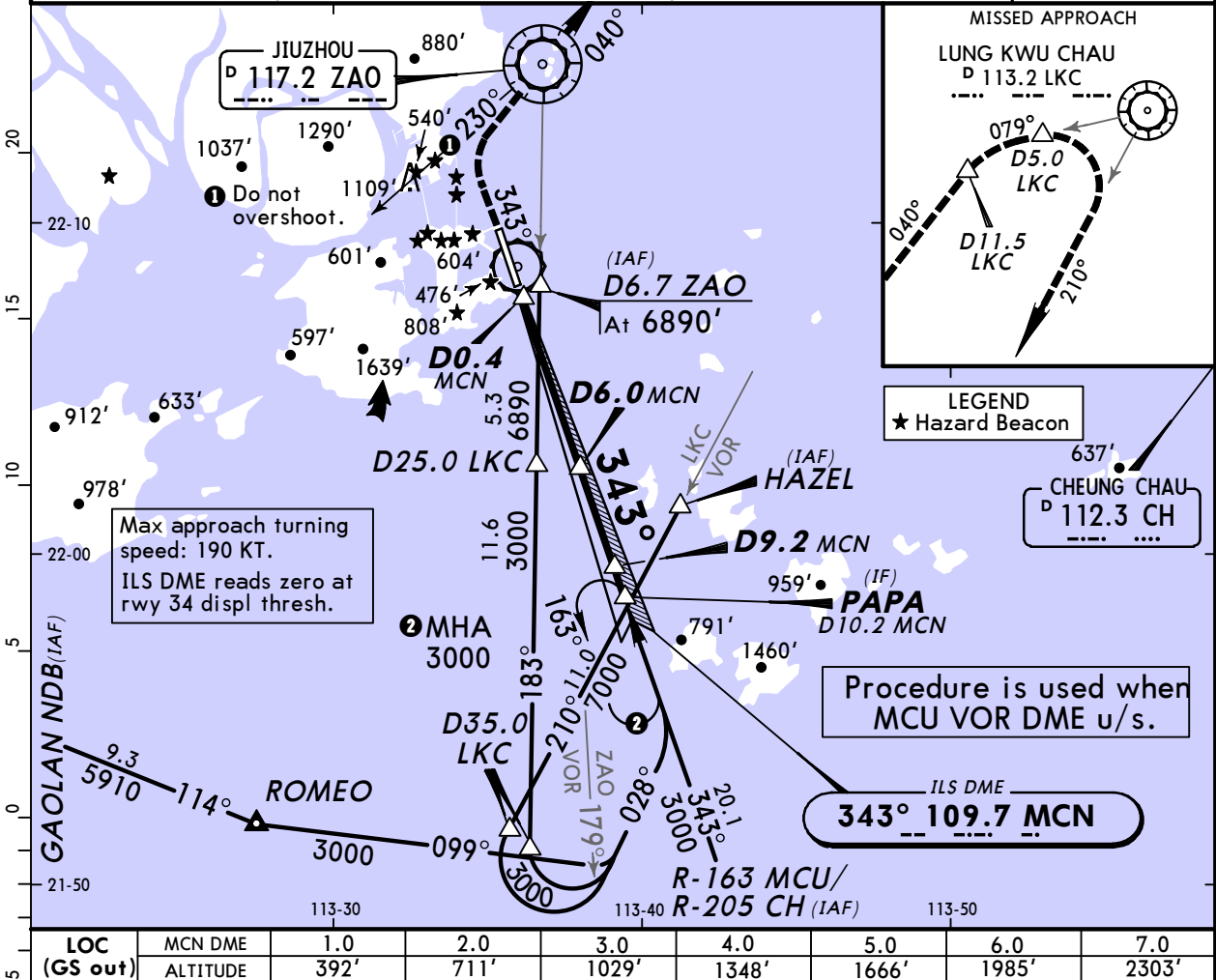
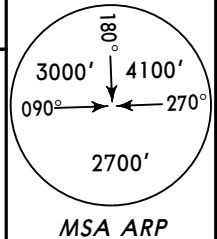
(11-5)

MISSED APCH CLIMB
GRADIENT MIM 5.4%

MACAO, PR OF CHINA
ILS Y Rwy 34

BRIEFING STRIP™

ATIS 126.4	*HONG KONG Radar 126.3	*ZHUHAI Approach 120.35	MACAO Tower 118.0	Ground 121.72 121.97
LOC MCN 109.7	Final Apch Crs 343°	GS D6.0 MCN 1985' (1965')	ILS DA(H) 220' (200')	Apt Elev 20'
MISSED APCH: Climb on rwy hdg to 600', turn RIGHT to ZAO VOR climbing to 3940'. Leave ZAO VOR on R-040, at D11.5 LKC turn RIGHT to intercept R-259 inbound LKC VOR, continue climbing to 6000'. At D5.0 LKC and at or above 5500' turn RIGHT to establish on R-210 LKC and at D35.0 LKC descend to 3000' and turn LEFT on track 028° to intercept final approach track, or expect radar vectoring by Hong Kong ATC via the most expeditious means to final approach. MAX 185 KT during turns.				
Alt Set: hPa	Apt Elev: 1 hPa	Trans level: By ATC	Trans alt: 9000'	



Gnd speed-Kts	70	90	100	120	140	160	HIALS-II	600'	3940'	185 KT	ZAO
ILS GS or LOC Desc Angle 3.00°	377	485	539	647	755	862	PAPI	↑	RT	MAX	117.2
MAP at D0.4 MCN											

STRAIGHT-IN LANDING RWY 34 Missed apch climb gradient mim 5.4% I ILS DA(H) 220' (200') FULL				LOC (GS out) MDA(H) 310' (290') ALS out				CIRCLE-TO-LAND			
A/B		1200m		1200m		RVR 1500m VIS 1600m		For Circle-to-land procedure with prescribed flight tracks see 19-10.			
C											
D				1600m							

1 Climb gradient up to 5500'.

CHANGES: Procedure title. MSA. ZAO DME added.

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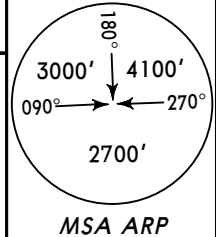
24 JAN 14
Eff 6 Feb

11-5A

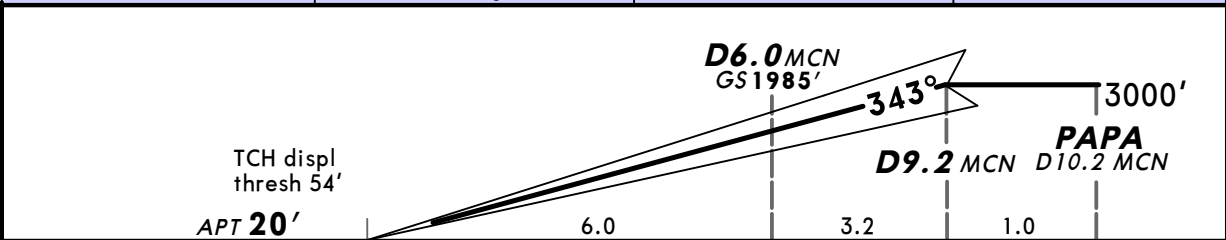
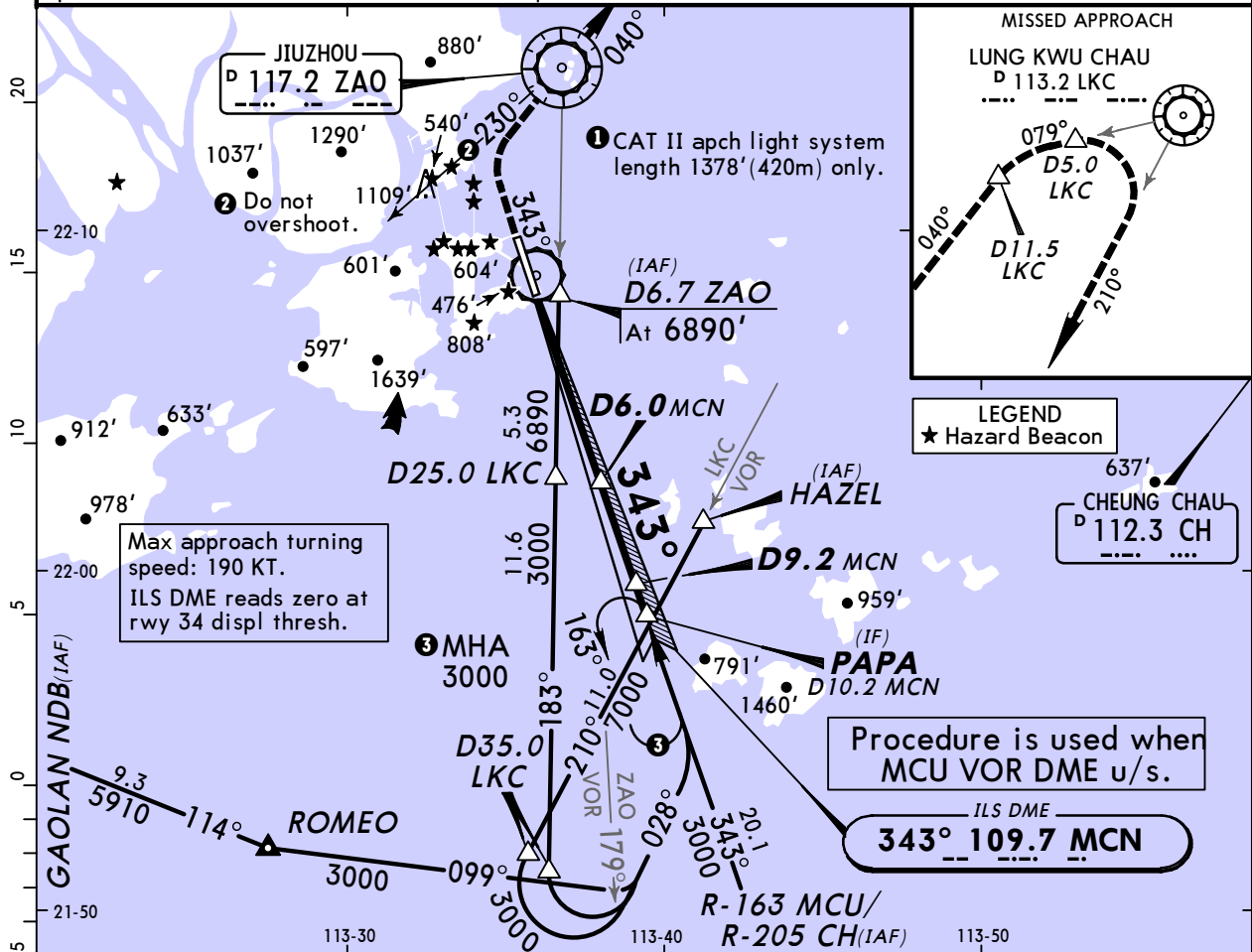
MISSED APCH CLIMB
GRADIENT MIM 5.4%

MACAO, PR OF CHINA
CAT II ILS Y Rwy 34

ATIS 126.4	*HONG KONG Radar 126.3	*ZHUHAI Approach 120.35	MACAO Tower 118.0	Ground 121.72 121.97
LOC MCN 109.7	Final Apch Crs 343°	GS D6.0 MCN 1985' (1965')	CAT II ILS RA 100' DA(H) 120' (100')	Apt Elev 20'
MISSED APCH: Climb on rwy hdg to 600', turn RIGHT to ZAO VOR climbing to 3940'. Leave ZAO VOR on R-040, at D11.5 LKC turn RIGHT to intercept R-259 inbound LKC VOR, continue climbing to 6000'. At D5.0 LKC and at or above 5500' turn RIGHT to establish on R-210 LKC and at D35.0 LKC descend to 3000' and turn LEFT on track 028° to intercept final approach track, or expect radar vectoring by Hong Kong ATC via the most expeditious means to final approach. MAX 185 KT during turns.				



Alt Set: hPa Apt Elev: 1 hPa Trans level: By ATC Trans alt: 9000'
Special Aircrew & Aircraft Certification Required.



Gnd speed-Kts	70	90	100	120	140	160	HIALS-II	600'	3940'	185 KT	ZAO
ILS GS	3.00°	377	485	539	647	755	PAPI	↑	RT	MAX	117.2

STRAIGHT-IN LANDING RWY 34
Missed apch climb gradient mim 5.4% **I**
CAT II ILS
RA 100'
DA(H) **120' (100')**

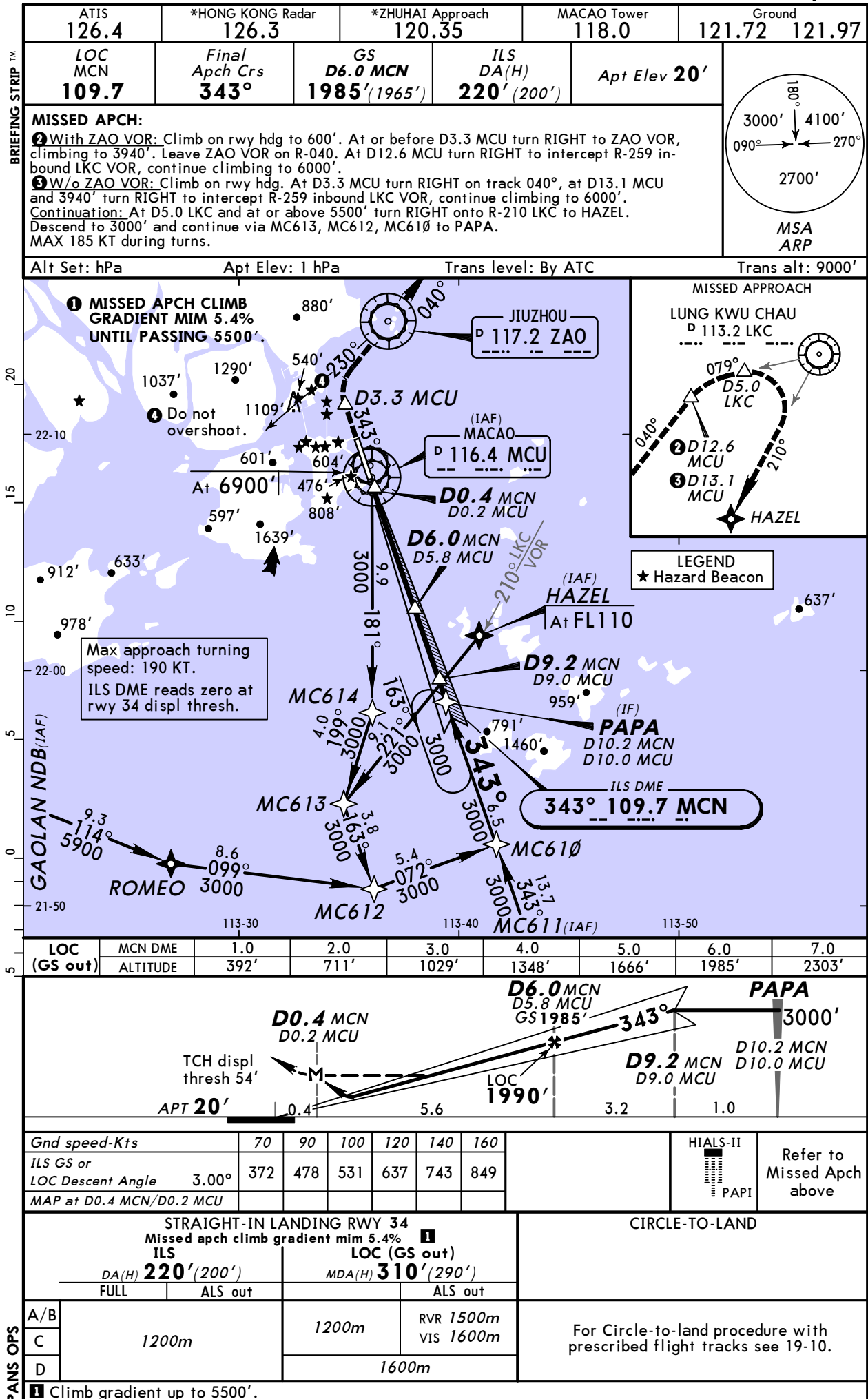
RVR 350m
I Climb gradient up to 5500'.

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MACAO INTL

24 JAN 14
Eff 5 Feb

(11-6)

MACAO, PR OF CHINA
• RNAV ILS X Rwy 34

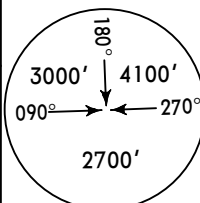


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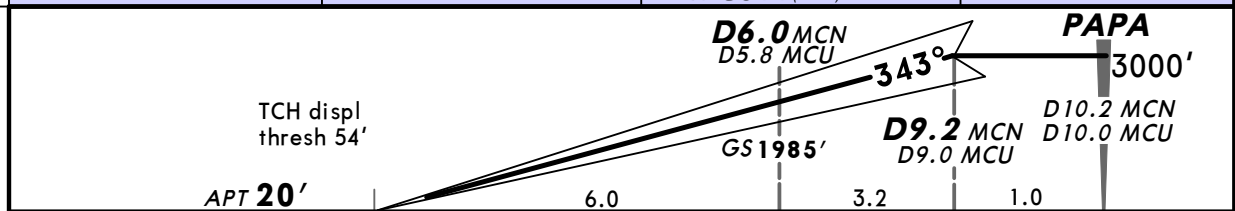
24 JAN 14
Eff 6 Feb

JEPPESSEN MACAO, PR OF CHINA
11-6A CAT II RNAV ILS X Rwy 34

BRIEFING STRIP™

ATIS 126.4	*HONG KONG Radar 126.3	*ZHUHAI Approach 120.35	MACAO Tower 118.0	Ground 121.72 121.97
LOC MCN 109.7	Final Apch Crs 343°	GS D6.0 MCN 1985' (1965')	CAT II ILS RA 100' DA(H) 120' (100')	Apt Elev 20'
MISSED APCH: ② With ZAO VOR: Climb on rwy hdg to 600'. At or before D3.3 MCU turn RIGHT to ZAO VOR, climbing to 3940'. Leave ZAO VOR on R-040. At D12.6 MCU turn RIGHT to intercept R-259 inbound LKC VOR, continue climbing to 6000'. ③ W/o ZAO VOR: Climb on rwy hdg. At D3.3 MCU turn RIGHT on track 040°, at D13.1 MCU and 3940' turn RIGHT to intercept R-259 inbound LKC VOR, continue climbing to 6000'. Continuation: At D5.0 LKC and at or above 5500' turn RIGHT onto R-210 LKC to HAZEL. Descend to 3000' and continue via MC613, MC612, MC610 to PAPA. MAX 185 KT during turns.				
				

Alt Set: hPa Apt Elev: 1 hPa Trans level: By ATC Trans alt: 9000'
 1. Special Aircrew & Aircraft Certification Required. 2. CAT II apch light system length 1378' (420m) only.



Gnd speed-Kts	70	90	100	120	140	160		HIALS-II	
GS	3.00°	372	478	531	637	743	849		Refer to Missed Apch above

STRAIGHT-IN LANDING RWY 34
 Missed apch climb gradient min 5.4% **①**
CAT II ILS
RA 100'
 DA(H) **120' (100')**

PANS OPS

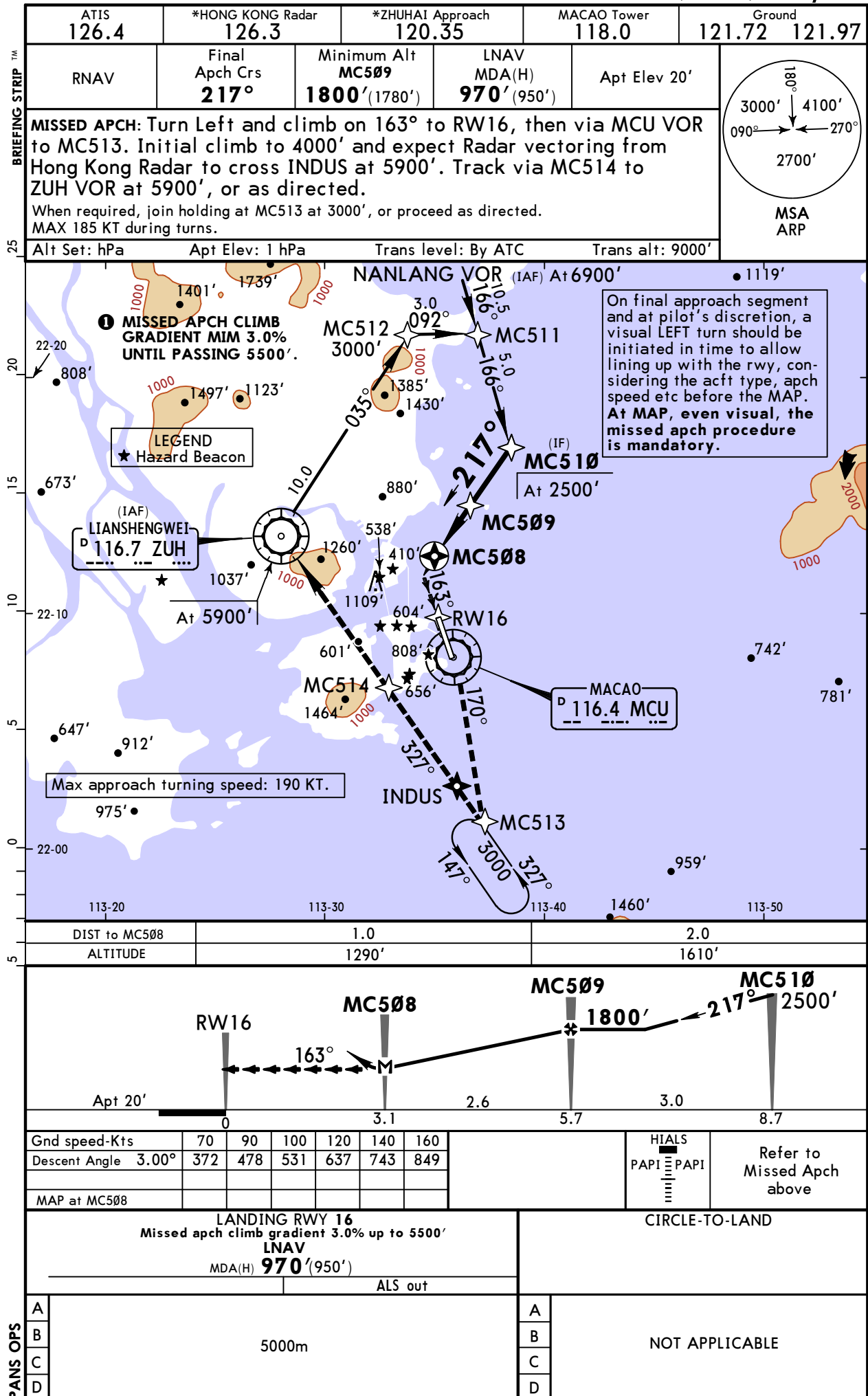
RVR 350m

① Climb gradient up to 5500'.

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JEPPesen
19 FEB 16 (12-1)

MACAO, PR OF CHINA
• RNAV (GNSS) Rwy 16



VMMC/MFM
MACAO INTL

19 FEB 16 (12-2)

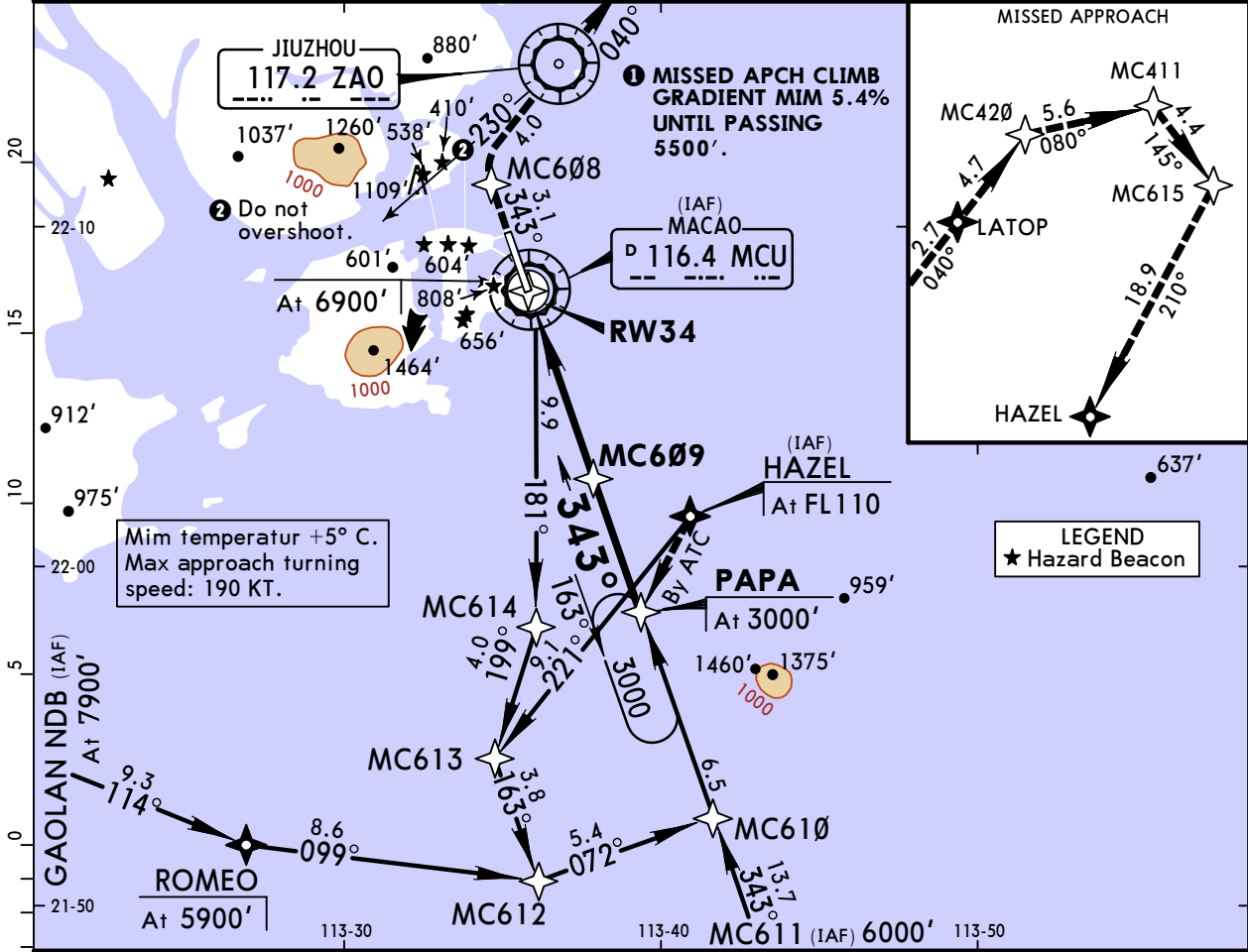
JEPPesen

MACAO, PR OF CHINA
• RNAV (GNSS) Rwy 34

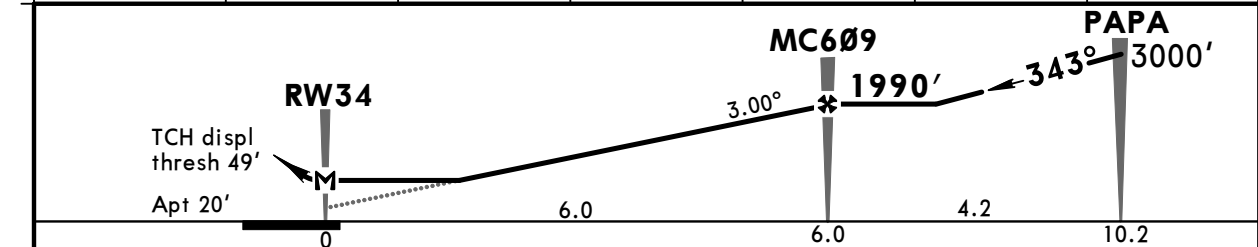
BRIEFING STRIP™

ATIS 126.4	*HONG KONG Radar 126.3	*ZHUHAI Approach 120.35	MACAO Tower 118.0	Ground 121.72 121.97
RNAV	Final Apch Crs 343°	Minimum Alt MC609 1990' (1970')	LNAV/VNAV DA(H) 540' (520')	Apt Elev 20'
MISSED APCH: Climb to MC608 at 600' or above, then climbing turn RIGHT to ZAO VOR, LATOP, MC420 at 3900' or above. Track to MC411 at or above 5500' and continue climb to 6000', or as directed. Fly via MC615 onto 210° to HAZEL, PAPA, MC613 and MC612, or as directed. When requested, join holding at PAPA at 3000' or above, or as directed. MAX 185 KT during turns.				

Alt Set: hPa Apt Elev: 1 hPa Trans level: By ATC Trans alt: 9000'



DIST to RW34	1.0	2.0	3.0	4.0	5.0	6.0
ALTITUDE	390'	710'	1030'	1350'	1670'	1990'



Gnd speed-Kts	70	90	100	120	140	160
Descent Angle 3.00°	372	478	531	637	743	849
MAP at RW34						

STRAIGHT-IN LANDING RWY 34 Missed apch climb gradient mim 5.4% until passing 5500' VNAV/LNAV DA(H) 540' (520') ALS out		CIRCLE-TO-LAND LNAV MDA(H) 570' (550') ALS out	
A/B			
C	2700m	2900m	For Circle-to-land procedure with prescribed flight tracks see 19-10.
D			

PANS OPS

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JEPPESSEN

7 MAR 14

13-1

**MISSED APCH CLIMB
GRADIENT MIN 5.4%**

MACAO, PR OF CHINA

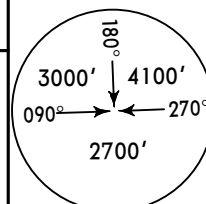
VOR DME Rwy 34

ATIS 126.4	*HONG KONG Radar 126.3	*ZHUHAI Approach 120.35	MACAO Tower 118.0	Ground 121.72 121.97
VOR MCU 116.4	<i>Final</i> <i>Apch Crs</i> 343°	<i>Minimum Alt</i> D5.8 MCU 1990' (1970')	<i>MDA(H)</i> 550' (530')	<i>Apt Elev</i> 20'

MISSED APCH:

① With ZAO VOR: Climb on rwy hdg to 600'. At or before D3.3 MCU turn RIGHT to ZAO VOR, climbing to 3940'. Leave ZAO VOR on R-040. At D12.6 MCU turn RIGHT to intercept R-259 inbound LKC VOR, continue climbing to 6000'.

2W/o ZAO VOR: Climb on rwy hdg. At D3.3 MCU turn RIGHT on track 040°, at D13.1 MCU and 3940' turn RIGHT to intercept R-259 inbound LKC VOR, continue climbing to 6000'.
Continuation: At D5.0 LKC and at or above 5500' turn RIGHT to establish on R-210 LKC and at D35.0 LKC descend to 3000' and turn LEFT on track 028° to intercept final approach track, or expect radar vectoring by Hong Kong ATC via the most expeditious means to final approach.
 MAX 185 KT during turns.



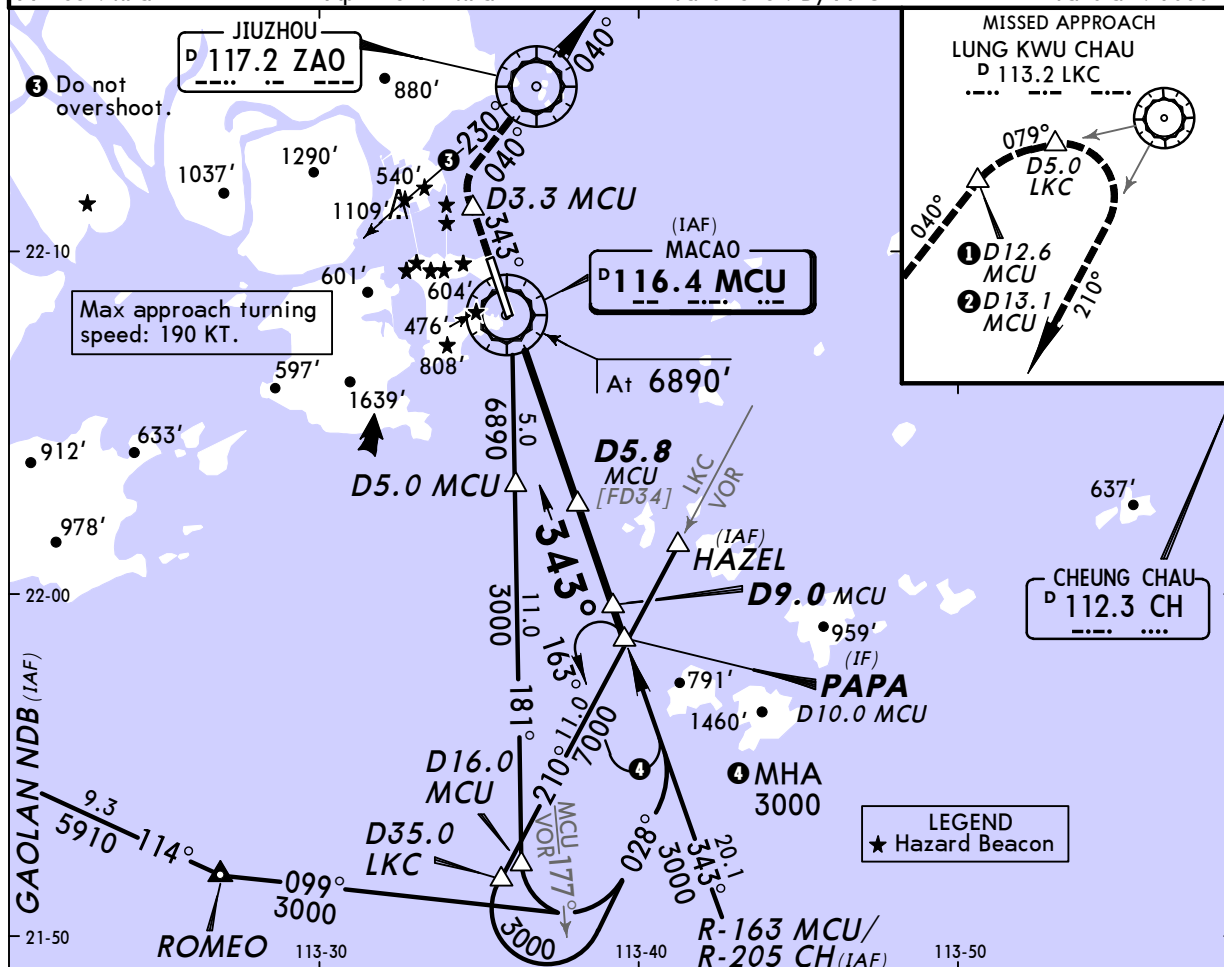
MSA ARP

Alt Set: hPa

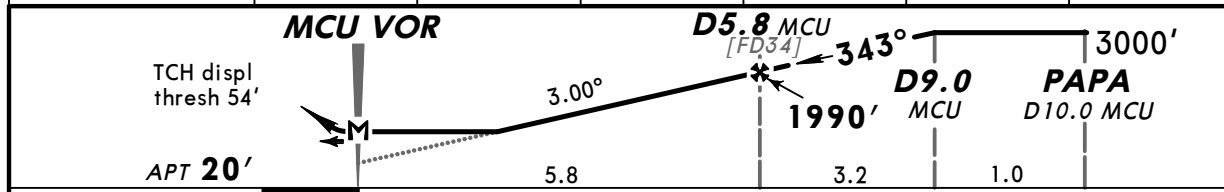
Apt Elev: 1 hPa

Trans level: By ATC

Trans alt: 9000'



MCU DME	2.0	3.0	4.0	5.0	6.0	7.0
ALTITUDE	770'	1088'	1407'	1725'	2044'	2362'



<i>Gnd speed-Kts</i>	70	90	100	120	140	160
<i>Descent Angle</i> 3.00°	372	478	531	637	743	849
<i>MAP at MCU VOR</i>						

HIALS-II

The logo for HIALS-II, featuring a stylized vertical bar with horizontal lines and the text "HIALS-II" above it.

Refer to
Missed Apch
above

STRAIGHT-IN LANDING RWY 34

Missed apch climb gradient min 5.4% up to 5500'

MDA(H) **550'** (530')

ALS out

CIRCLE-TO-LAND

For Circle-to-land procedure with prescribed flight tracks see 19-10.

PANS OPS

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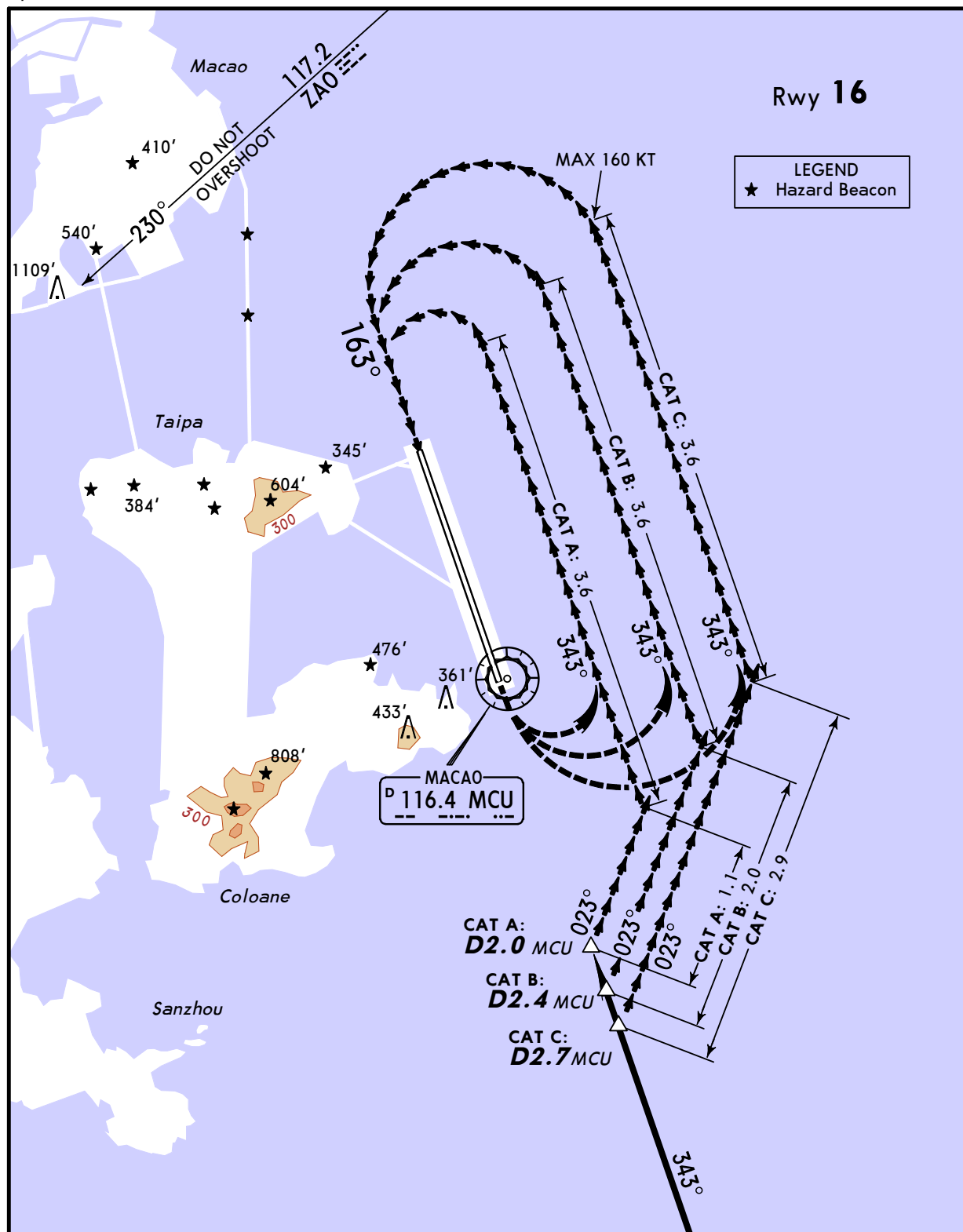
JEPPESEN
7 MAR 14 (19-10)

MACAO, PR OF CHINA

MACAO INTL

Apt Elev **20'**

CIRCLE-TO-LAND
WITH PRESCRIBED FLIGHT TRACKS



C E I L I N G R E Q U I R E

	Max Kts	MDA(H)	CEIL-VIS
A	100	660' (640')	1500' - 6000m
B	135	770' (750')	1500' - 6000m
C	160	870' (850')	1500' - 6000m
D		NOT APPLICABLE	