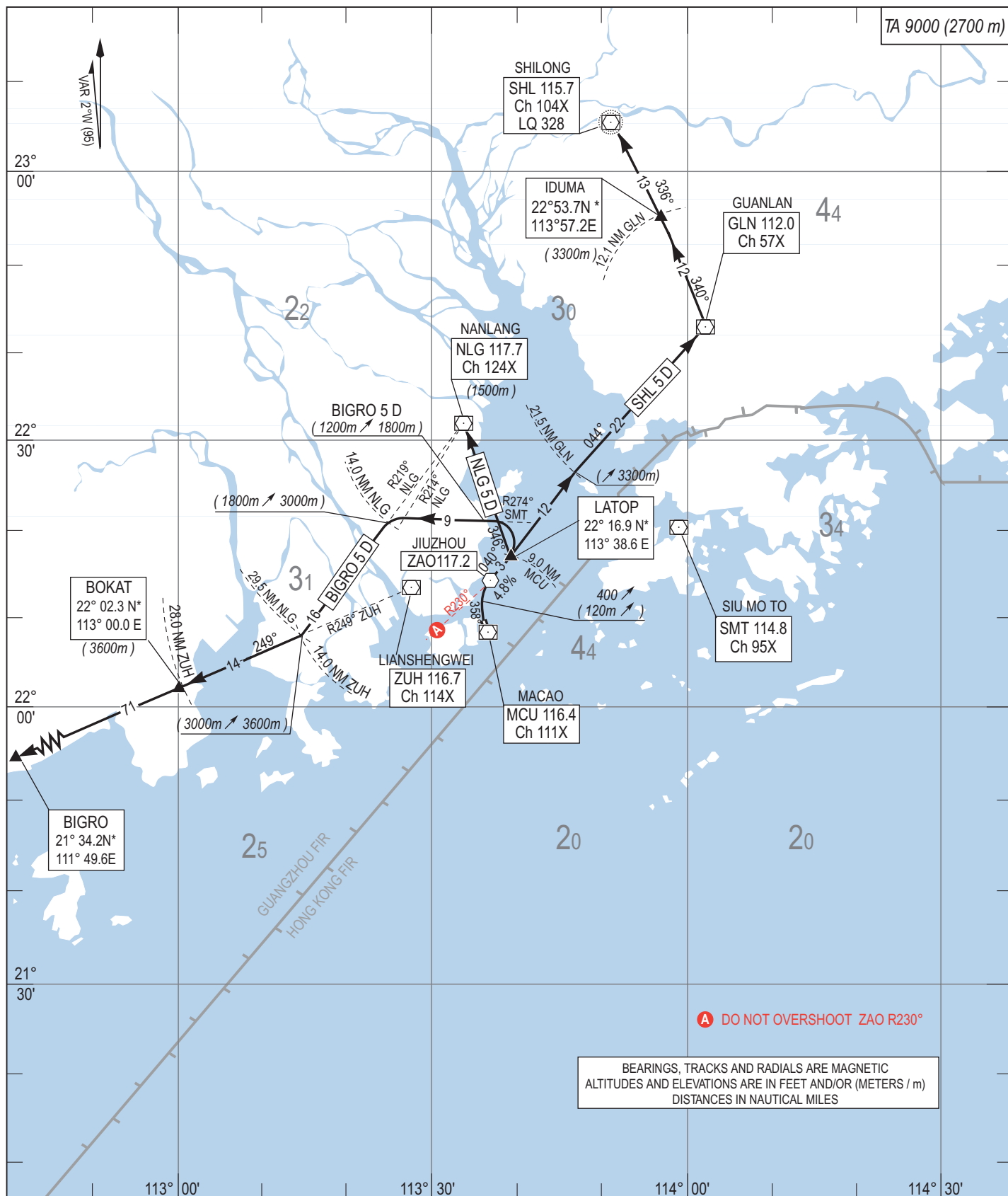


SID MACAO RWY 34

(BIGRO 5 D, NLG 5 D, SHL 5 D)

TWR : MACAO Tower 118.0
APP : Zhuhai Approach 120.35 (124.25) (1)
APP : HONG KONG Radar 126.3 / 119.1 (2)
ATIS : MACAO 126.4

MAX DEP TURNING SPEED : 205 kt IAS



RADIO FAILURE PROCEDURE : Squawk A / 7600

Note: * The Co-ordinates are as published in AIP China and are not in WGS 84 datum.

BIGRO 5 D (*minimum climb gradient of 4.8% required until leaving 1800 m*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040°. Turn left at LATOP to intercept SMT R274° at 1200 m. Then continue climbing, at NLG R214° turn left to intercept NLG R219° at 1800 m. Continue climbing to 3000 m. Turn right at ZUH R249° DME 14.0 / NLG R219° DME 29.5 to intercept ZUH R249° to BIGRO, pass BOKAT at 3600 m.

NLG 5 D (*minimum climb gradient of 4.8% required until reaching 1500 m*)

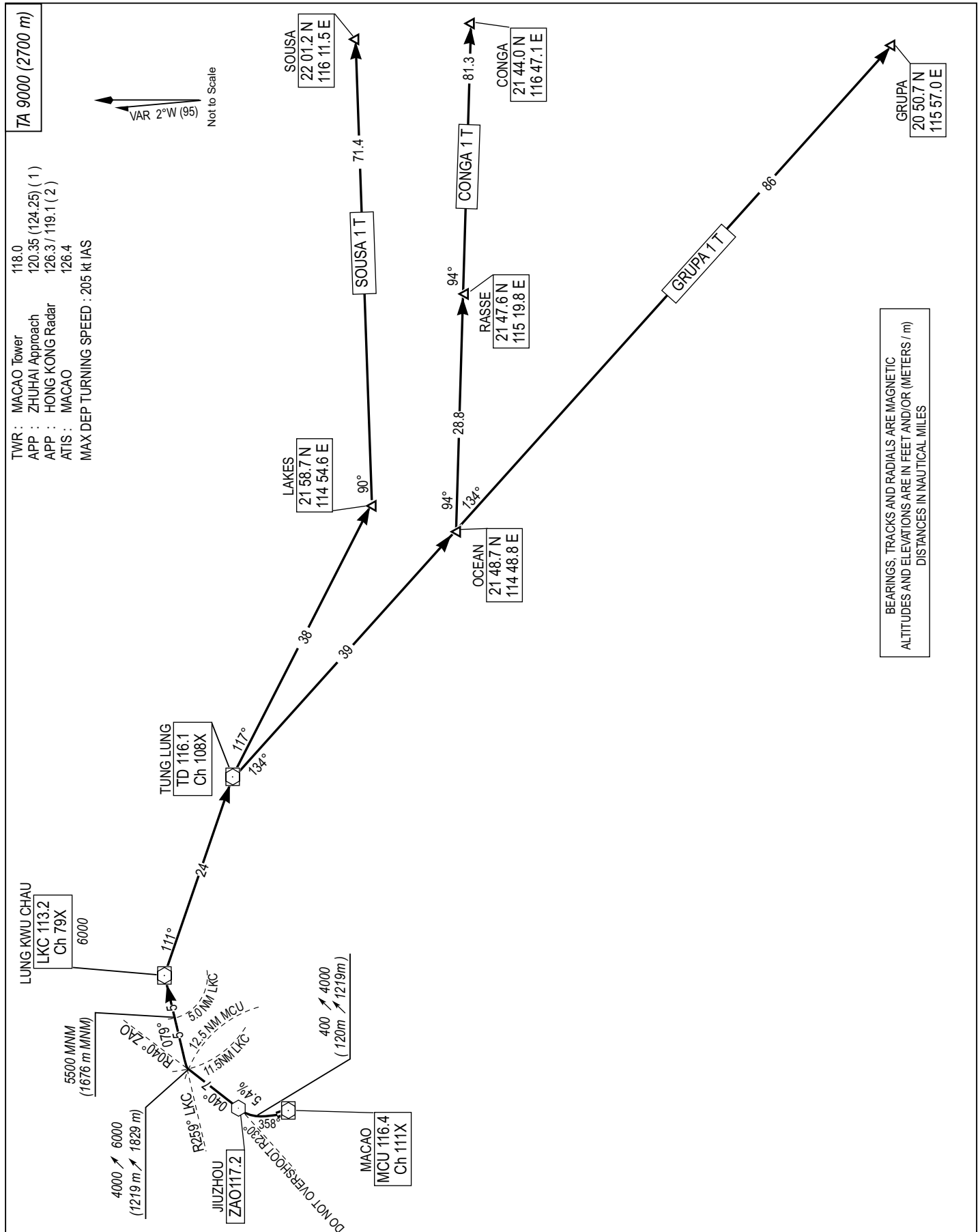
Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040°. At MCU DME 9.0 turn left to established on NLG R166° and reach 1500m by NLG.

SHL 5 D (*minimum climb gradient of 4.8% required until leaving 3300m*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040°, continue climbing to 3300 m and maintain, at GLN DME 21.5 proceed on GLN R224° to GLN. Leave GLN on R340° to IDUMA at 3300 m. Turn left at IDUMA and proceed to SHL via SHL R156°.

REMARK :

- (1) Aircraft are NOT TO OVERSHOOT JIUZHOU DVOR (ZAO 117.2 MHz) R230° which defines the northern limit for flights taking off RWY 34 due to NOISE ABATEMENT for Zhuhai City.
- (2) Aircraft unable to comply with the minimum climb gradient must inform Macao ground control at first contact to allow special coordinations.
- (3) Maximum departure truning speed: 205 kt IAS.



RADIO FAILURE PROCEDURE : Squawk A / 7600

CONGA 1 T (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at LKC DME11.5 (MCU DME 12.5) turn right to establish on LKC R259°, continue climbing to pass 5500 ft by LKC DME 5.0 and reach 6000 ft by LKC DVOR. Further climb when instructed by ATC. From LKC DVOR track direct to TD DVOR. From TD DVOR track direct to OCEAN then turn left direct to RASSE and CONGA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If LKC DVOR is not available, CONGA 1 T is not permitted, request CONGA 1 V SID.

If TD DVOR is not available, expect radar vectors to CONGA.

GRUPA 1 T (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at LKC DME11.5 (MCU DME 12.5) turn right to establish on LKC R259°, continue climbing to pass 5500 ft by LKC DME 5.0 and reach 6000 ft by LKC DVOR. Further climb when instructed by ATC. From LKC DVOR track direct to TD DVOR. From TD DVOR track direct to OCEAN then GRUPA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If LKC DVOR is not available, GRUPA 1 T is not permitted, request GRUPA 1 V SID.

If TD DVOR is not available, expect radar vectors to GRUPA.

SOUSA 1 T (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at LKC DME11.5 (MCU DME 12.5) turn right to establish on LKC R259°, continue climbing to pass 5500 ft by LKC DME 5.0 and reach 6000 ft by LKC DVOR. Further climb when instructed by ATC. From LKC DVOR track direct to TD DVOR. From TD DVOR track direct to LAKES and then turn left direct to SOUSA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If LKC DVOR is not available, SOUSA 1 T is not permitted, request SOUSA 1 V SID.

If TD DVOR is not available, expect radar vectors to SOUSA.

REMARK :

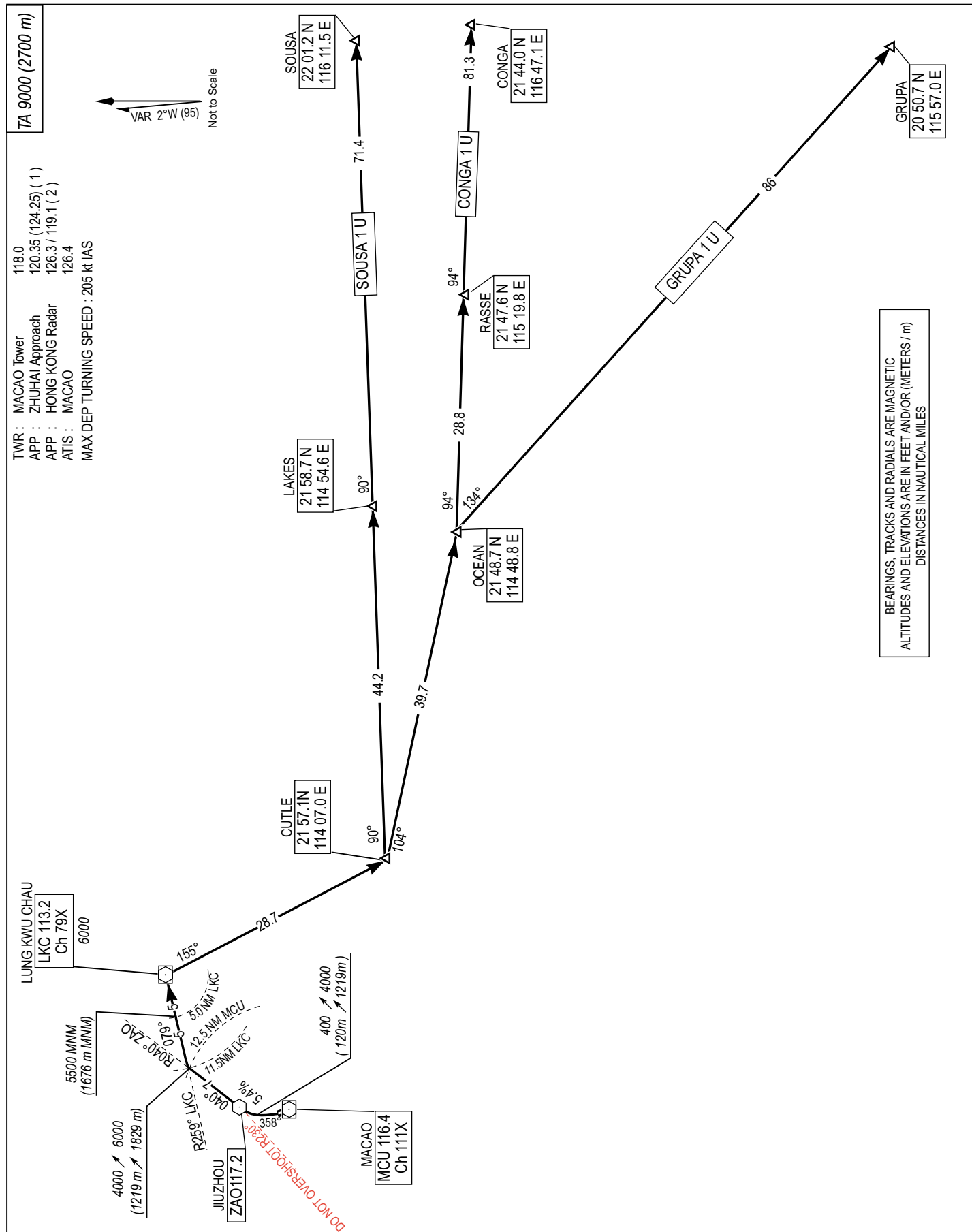
- (1) Aircraft are NOT TO OVERSHOOT JIUZHOU DVOR (ZAO 117.2 MHz) R230° which defines the northern limit for flights taking off RWY 34 due to NOISE ABATEMENT for Zhuhai City.
- (2) Procedure Design Gradient based only on airspace restriction.
- (3) Aircraft unable to comply with the minimum climb gradient must inform MACAO ground control at first contact to allow special coordinations.
- (4) Maximum departure turning speed: 205 kt IAS.
- (5) Standard Instrument Departure Procedures (SIDs) transiting Hong Kong Airspace

Speed Restriction

Aircraft shall fly at 250 kt or less below FL 110.

Loss of communication

In the event of loss of communication, aircraft shall comply with the last acknowledged clearance up to the next reporting point in the SID, then climb to the flight planned cruising level and follow the flight planned route to join the appropriate airway.



RADIO FAILURE PROCEDURE : Squawk A / 7600

CONGA 1 U (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at LKC DME 11.5 (MCU DME 12.5) turn right to establish on LKC R259°, continue climbing to pass 5500 ft by LKC DME 5.0 and reach 6000 ft by LKC DVOR. Further climb when instructed by ATC. Expect to cross CUTLE FL 140 or above. From LKC DVOR track direct to CUTLE. From CUTLE turn left direct to OCEAN then turn left direct to RASSE and CONGA. Continue on Terminal Transition Routes published on Hong Kong AIP.

If LKC DVOR is not available, CONGA 1 U is not permitted, request CONGA 1 W SID.

GRUPA 1 U (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at LKC DME 11.5 (MCU DME 12.5) turn right to establish on LKC R259°, continue climbing to pass 5500 ft by LKC DME 5.0 and reach 6000 ft by LKC DVOR. Further climb when instructed by ATC. Expect to cross CUTLE FL 140 or above. From LKC DVOR track direct to CUTLE. From CUTLE turn left direct to OCEAN then turn right direct to GRUPA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If LKC DVOR is not available, GRUPA 1 U is not permitted, request GRUPA 1 W SID.

SOUSA 1 U (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at LKC DME 11.5 (MCU DME 12.5) turn right to establish on LKC R259°, continue climbing to pass 5500 ft by LKC DME 5.0 and reach 6000 ft by LKC DVOR. Further climb when instructed by ATC. Expect to cross CUTLE FL 140 or above. From LKC DVOR track direct to CUTLE then turn left direct to LAKES and SOUSA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If LKC DVOR is not available, SOUSA 1 U is not permitted, request SOUSA 1 W SID.

REMARK :

- (1) Aircraft are NOT TO OVERSHOOT JIUZHOU DVOR (ZAO 117.2 MHz) R230° which defines the northern limit for flights taking off RWY 34 due to NOISE ABATEMENT for Zhuhai City.
- (2) Procedure Design Gradient based only on airspace restriction.
- (3) Aircraft unable to comply with the minimum climb gradient must inform MACAO ground control at first contact to allow special coordinations.
- (4) Maximum departure turning speed: 205 kt IAS.
- (5) Standard Instrument Departure Procedures (SIDs) transiting Hong Kong Airspace

Speed Restriction

Aircraft shall fly at 250 kt or less below FL 110.

Loss of communication

In the event of loss of communication, aircraft shall comply with the last acknowledged clearance up to the next reporting point in the SID, then climb to the flight planned cruising level and follow the flight planned route to join the appropriate airway.

CONGA 1 V (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at SMT DME 16.1 (MCU DME 12.5) turn right to establish on SMT R274°, continue climbing to pass 5500 ft by SMT DME 11.0 and reach 6000 ft by SMT DME 6.0. Further climb when instructed by ATC. From SMT DVOR track direct to TD DVOR. From TD DVOR track direct to OCEAN and then turn left direct to RASSE and CONGA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If SMT DVOR is not available, CONGA 1 V is not permitted.

If TD DVOR is not available, expect radar vectors to CONGA.

GRUPA 1 V (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at SMT DME 16.1 (MCU DME 12.5) turn right to establish on SMT R274°, continue climbing to pass 5500 ft by SMT DME 11.0 and reach 6000 ft by SMT DME 6.0. Further climb when instructed by ATC. From SMT DVOR track direct to TD DVOR. From TD DVOR track direct to OCEAN and then GRUPA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If SMT DVOR is not available, GRUPA 1 V is not permitted

If TD DVOR is not available, expect radar vectors to GRUPA.

SOUSA 1 V (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at SMT DME 16.1 (MCU DME 12.5) turn right to establish on SMT R274°, continue climbing to pass 5500 ft by SMT DME 11.0 and reach 6000 ft by SMT DME 6.0. Further climb when instructed by ATC. From SMT DVOR track direct to TD DVOR. From TD DVOR track direct to LAKES then turn left direct to SOUSA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If SMT DVOR is not available, SOUSA 1 V is not permitted.

If TD DVOR is not available, expect radar vectors to SOUSA.

REMARK :

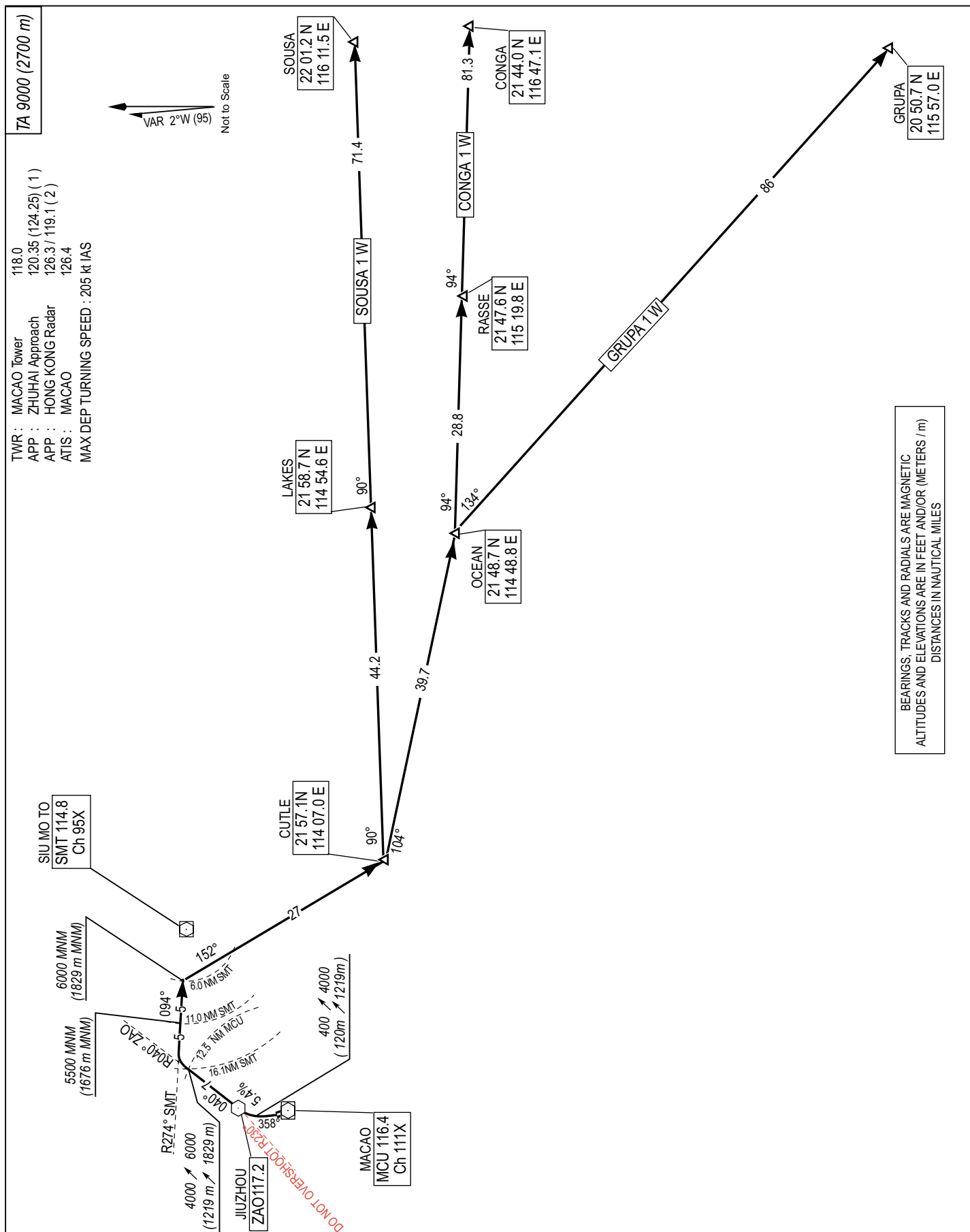
- (1) Aircraft are NOT TO OVERSHOOT JIUZHOU DVOR (ZAO 117.2 MHz) R230° which defines the northern limit for flights taking off RWY 34 due to NOISE ABATEMENT for Zhuhai City.
- (2) Procedure Design Gradient based only on airspace restriction.
- (3) Aircraft unable to comply with the minimum climb gradient must inform MACAO ground control at first contact to allow special coordinations.
- (4) Maximum departure turning speed: 205 kt IAS.
- (5) Standard Instrument Departure Procedures (SIDs) transiting Hong Kong Airspace

Speed Restriction

Aircraft shall fly at 250 kt or less below FL 110.

Loss of communication

In the event of loss of communication, aircraft shall comply with the last acknowledged clearance up to the next reporting point in the SID, then climb to the flight planned cruising level and follow the flight planned route to join the appropriate airway.



RADIO FAILURE PROCEDURE : Squawk A / 7600

CONGA 1 W (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at SMT DME 16.1 (MCU DME 12.5) turn right to establish on SMT R274°, continue climbing to pass 5500 ft by SMT DME 11.0 and reach 6000 ft by SMT DME 6.0. Further climb when instructed by ATC. Expect to cross CUTLE FL140 or above. At SMT DME 6.0 turn right direct to CUTLE. From CUTLE turn left direct to OCEAN then turn left direct to RASSE and CONGA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If SMT DVOR is not available, CONGA 1 W is not permitted.

GRUPA 1 W (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at SMT DME 16.1 (MCU DME 12.5) turn right to establish on SMT R274°, continue climbing to pass 5500 ft by SMT DME 11.0 and reach 6000 ft by SMT DME 6.0. Further climb when instructed by ATC. Expect to cross CUTLE FL140 or above. At SMT DME 6.0 turn right direct to CUTLE. From CUTLE turn left direct to OCEAN then turn right direct to GRUPA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If SMT DVOR is not available, GRUPA 1 W is not permitted.

SOUSA 1 W (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at SMT DME 16.1 (MCU DME 12.5) turn right to establish on SMT R274°, continue climbing to pass 5500 ft by SMT DME 11.0 and reach 6000 ft by SMT DME 6.0. Further climb when instructed by ATC. Expect to cross CUTLE FL140 or above. At SMT DME 6.0 turn right direct to CUTLE. From CUTLE turn left direct to LAKES and SOUSA. Continue on Terminal Transition Routes published in Hong Kong AIP.

If SMT DVOR is not available, SOUSA 1 W is not permitted.

REMARK :

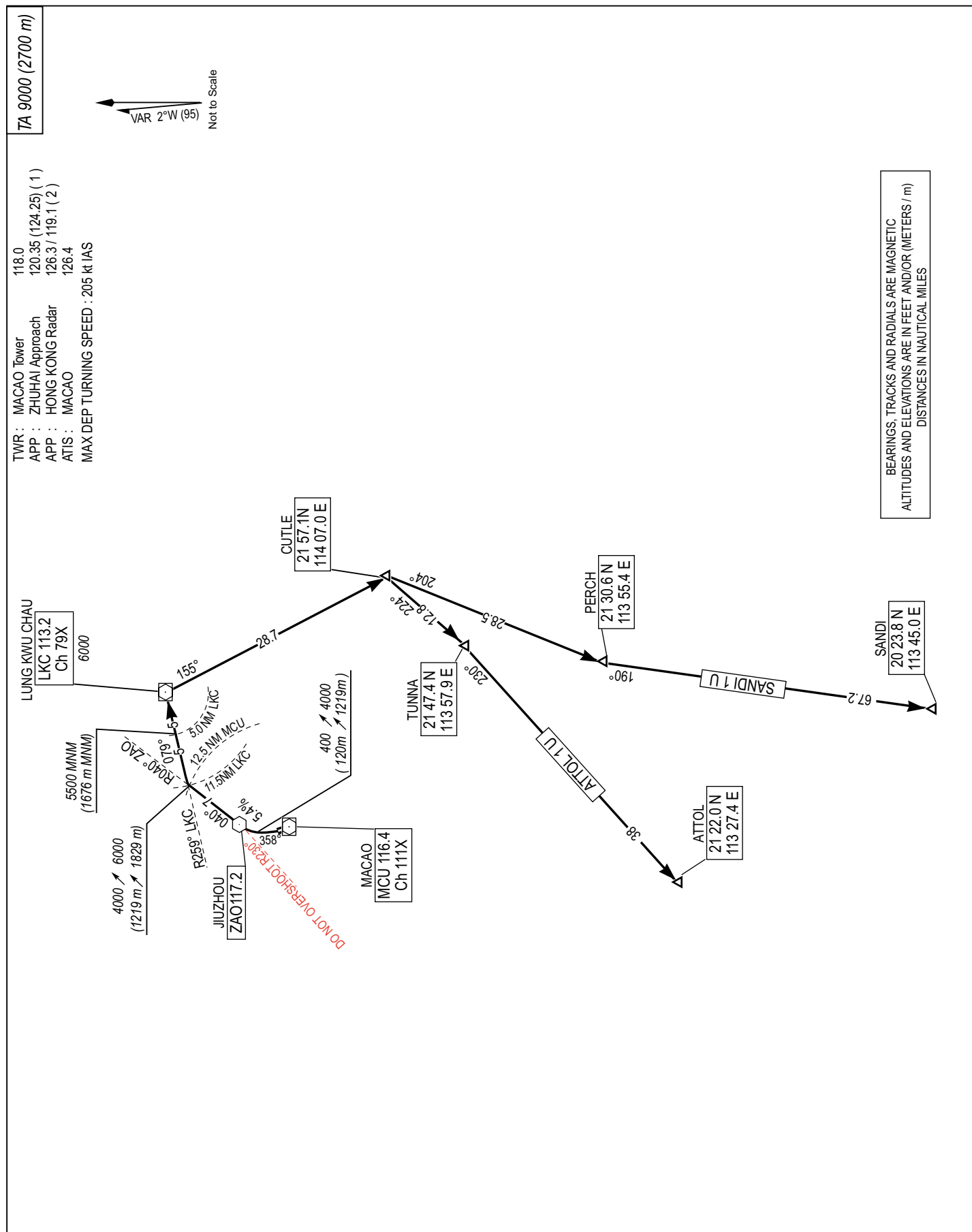
- (1) Aircraft are NOT TO OVERSHOOT JIUZHOU DVOR (ZAO 117.2 MHz) R230° which defines the northern limit for flights taking off RWY 34 due to NOISE ABATEMENT for Zhuhai City.
- (2) Procedure Design Gradient based only on airspace restriction.
- (3) Aircraft unable to comply with the minimum climb gradient must inform MACAO ground control at first contact to allow special coordinations.
- (4) Maximum departure turning speed: 205 kt IAS.
- (5) Standard Instrument Departure Procedures (SIDs) transiting Hong Kong Airspace

Speed Restriction

Aircraft shall fly at 250 kt or less below FL 110.

Loss of communication

In the event of loss of communication, aircraft shall comply with the last acknowledged clearance up to the next reporting point in the SID, then climb to the flight planned cruising level and follow the flight planned route to join the appropriate airway.



RADIO FAILURE PROCEDURE : Squawk A / 7600

ATTOL 1 U (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at LKC DME 11.5 (MCU DME 12.5) turn right to establish on LKC R259°, continue climbing to pass 5500 ft by LKC DME 5.0 and reach 6000 ft by LKC DVOR. Further climb when instructed by ATC. From LKC DVOR track direct to CUTLE. From CUTLE turn right direct to TUNNA and ATTOL Continue on Terminal Transition Routes published in Hong Kong AIP.

If LKC DVOR is not available, ATTOL 1 U is not permitted, request ATTOL 1 W SID.

SANDI 1 U (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at LKC DME 11.5 (MCU DME 12.5) turn right to establish on LKC R259°, continue climbing to pass 5500 ft by LKC DME 5.0 and reach 6000 ft by LKC DVOR. Further climb when instructed by ATC. From LKC DVOR track direct to CUTLE. From CUTLE turn right direct to PERCH and SANDI. Continue on Terminal Transition Routes published in Hong Kong AIP.

If LKC DVOR is not available, SANDI 1 U is not permitted, request SANDI 1 W SID.

REMARK :

- (1) Aircraft are NOT TO OVERSHOOT JIUZHOU DVOR (ZAO 117.2 MHz) R230° which defines the northern limit for flights taking off RWY 34 due to NOISE ABATEMENT for Zhuhai City.
- (2) Procedure Design Gradient based only on airspace restriction.
- (3) Aircraft unable to comply with the minimum climb gradient must inform MACAO ground control at first contact to allow special coordinations.
- (4) Maximum departure turning speed: 205 kt IAS.
- (5) Standard Instrument Departure Procedures (SIDs) transiting Hong Kong Airspace

Speed Restriction

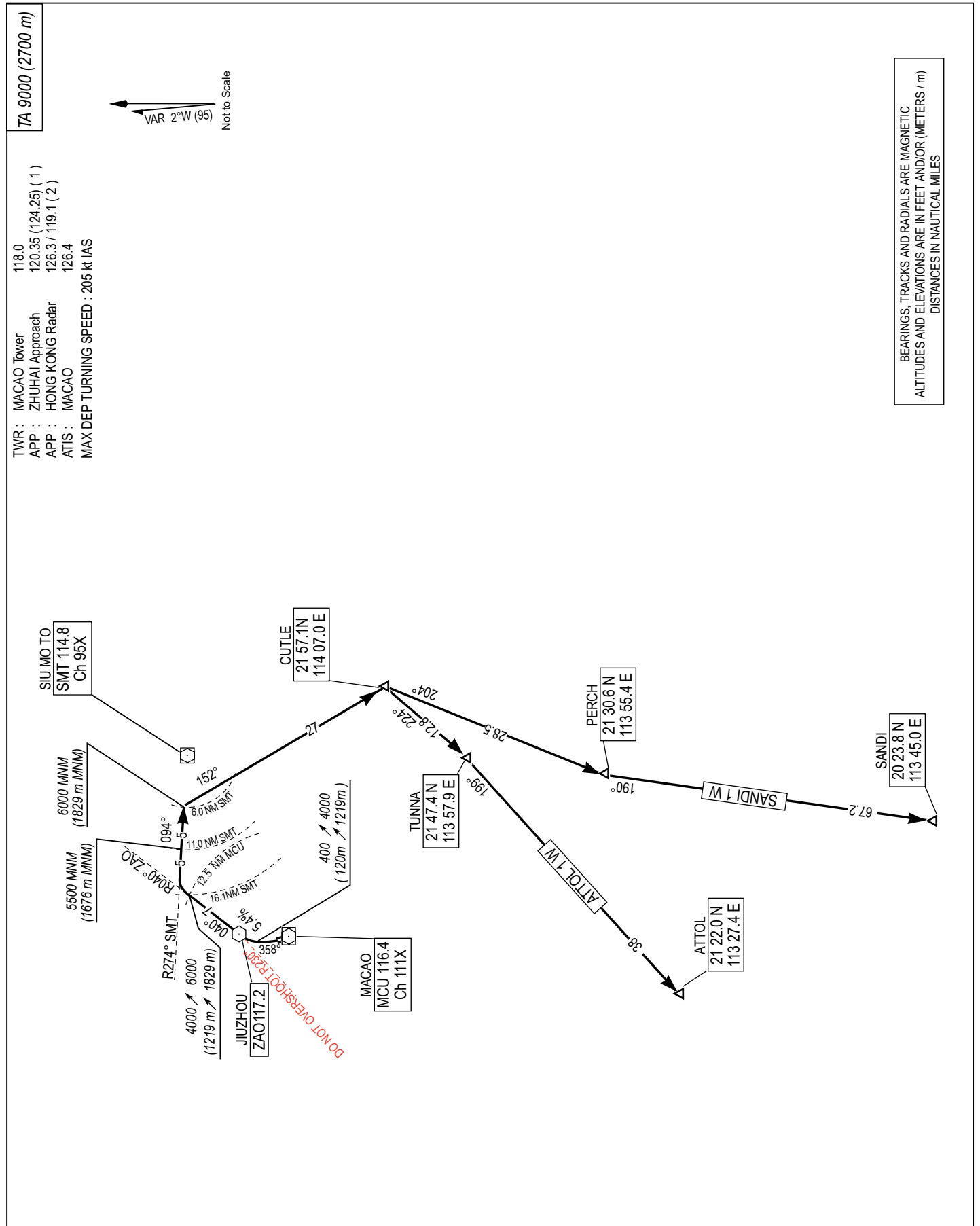
Aircraft shall fly at 250 kt or less below FL 110.

Loss of communication

In the event of loss of communication, aircraft shall comply with the last acknowledged clearance up to the next reporting point in the SID, then climb to the flight planned cruising level and follow the flight planned route to join the appropriate airway.

25 JUL 2002

SID MACAO RWY 34
(ATTOL 1 W, SANDI 1 W)



RADIO FAILURE PROCEDURE : Squawk A / 7600

ATTOL 1 W (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at SMT DME 16.1 (MCU DME 12.5) turn right to establish on SMT R274°, continue climbing to pass 5500 ft by SMT DME 11.0 and reach 6000 ft by SMT DME 6.0. Further climb when instructed by ATC. At SMT DME 6.0 turn right direct to CUTLE. From CUTLE turn right direct to TUNNA and ATTOL. Continue on Terminal Transition Routes published in Hong Kong AIP.

If SMT DVOR is not available, ATTOL 1 W is not permitted.

SANDI 1 W (*minimum climb gradient of 5.4% required until leaving 5500 ft*)

Depart on track 358°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R040° climbing to 4000 ft, at SMT DME 16.1 (MCU DME 12.5) turn right to establish on SMT R274°, continue climbing to pass 5500 ft by SMT DME 11.0 and reach 6000 ft by SMT DME 6.0. Further climb when instructed by ATC. At SMT DME 6.0 turn right direct to CUTLE. From CUTLE turn right direct to PERCH and SANDI. Continue on Terminal Transition Routes published in Hong Kong AIP.

If SMT DVOR is not available, SANDI 1 W is not permitted.

REMARK :

- (1) Aircraft are NOT TO OVERSHOOT JIUZHOU DVOR (ZAO 117.2 MHz) R230° which defines the northern limit for flights taking off RWY 34 due to NOISE ABATEMENT for Zhuhai City.
- (2) Procedure Design Gradient based only on airspace restriction.
- (3) Aircraft unable to comply with the minimum climb gradient must inform MACAO ground control at first contact to allow special coordinations.
- (4) Maximum departure turning speed: 205 kt IAS.
- (5) Standard Instrument Departure Procedures (SIDs) transiting Hong Kong Airspace

Speed Restriction

Aircraft shall fly at 250 kt or less below FL 110.

Loss of communication

In the event of loss of communication, aircraft shall comply with the last acknowledged clearance up to the next reporting point in the SID, then climb to the flight planned cruising level and follow the flight planned route to join the appropriate airway.

BIGRO 9 D (*minimum climb gradient of 3.8% required until leaving 1500 m*)

Climb straight ahead to cross MCU DME 8.5 at 2000 ft (610 m) or above, then turn right on track 282°M, continue climbing and pass Sanzao beacon (U 272 kHz) at 1500 m. After Sanzao beacon continue climb on track 282°M and establish on ZUH R249° towards BIGRO, pass BOKAT at 3600 m.

NLG 9 D (*minimum climb gradient of 3.8% required until reaching 2400 m*)

Climb straight ahead to cross MCU DME 8.5 at 2000 ft (610 m) or above, then turn right to MCU via MCU R196° and cross MCU at 1800 m. Leave MCU on R019° and reach 2400 m by LATOP. At LATOP turn left to establish NLG R166° and descend to reach 1500m by NLG.

SHL 9 D (*minimum climb gradient of 3.8% required until leaving 2400 m*)

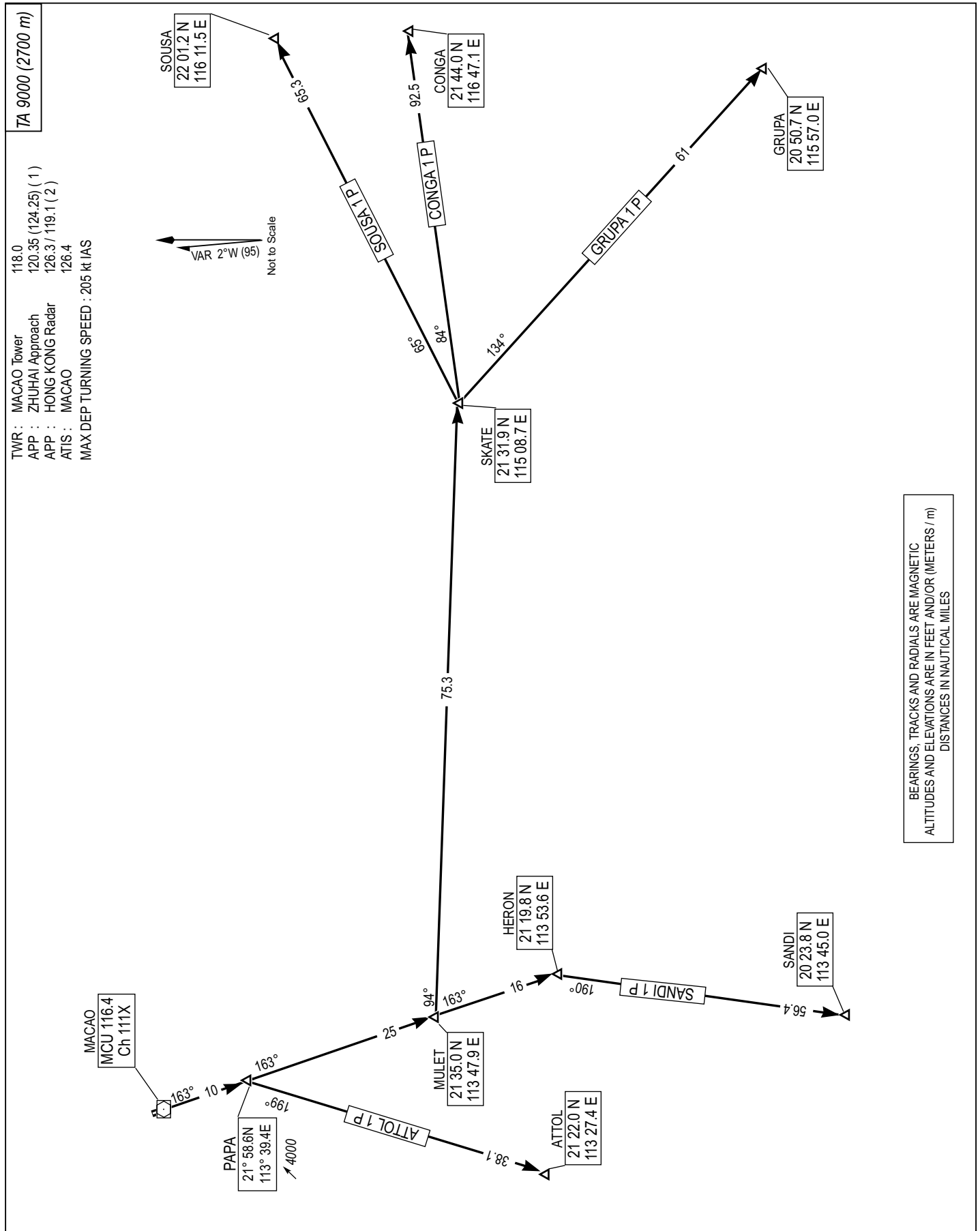
Climb straight ahead to cross MCU DME 8.5 at 2000 ft (610 m) or above, then turn right to MCU via MCU R196° and cross MCU at 1800 m. Leave MCU on R019° and continue climbing to 2400 m, at LATOP turn right to establish on ZAO R040°. Continue climbing on ZAO R040° to 3300 m and maintain. At GLN DME 21.5 proceed on GLN R224° and pass GLN. Leave GLN on R340° to IDUMA at 3300 m. Turn left at IDUMA and proceed to SHL via SHL R156°.

REMARK :

- (1) Aircraft unable to comply with the minimum climb gradient must inform MACAO ground control at first contact to allow special coordinations.
- (2) Maximum departure truning speed: 205 kt IAS.

SID MACAO RWY 16

(ATTOL 1 P, CONGA 1 P, GRUPA 1 P, SANDI 1 P, SOUSA 1 P)



RADIO FAILURE PROCEDURE : Squawk A / 7600

ATTOL 1 P

Proceed on MCU R163° to PAPA, climb to and maintain at 4000 ft. Further climb when instructed by ATC. From PAPA turn right direct to ATTOL. Continue on Terminal Transition Routes published in Hong Kong AIP.

CONGA 1 P

Proceed on MCU R163° to PAPA, climb to and maintain at 4000 ft. Further climb when instructed by ATC. From PAPA continue on MCU R163° to MULET. From MULET turn left direct to SKATE, then turn left direct to CONGA. Continue on Terminal Transition Routes published in Hong Kong AIP.

GRUPA 1 P

Proceed on MCU R163° to PAPA, climb to and maintain at 4000 ft. Further climb when instructed by ATC. From PAPA continue on MCU R163° to MULET. From MULET turn left direct to SKATE, then turn right direct to GRUPA. Continue on Terminal Transition Routes published in Hong Kong AIP.

SANDI 1 P

Proceed on MCU R163° to PAPA, climb to and maintain at 4000 ft. Further climb when instructed by ATC. From PAPA continue on MCU R163° to MULET. From MULET continue on R163° to HERON. From HERON turn right direct to SANDI. Continue on Terminal Transition Routes published in Hong Kong AIP.

SOUSA 1 P

Proceed on MCU R163° to PAPA, climb to and maintain at 4000 ft. Further climb when instructed by ATC. From PAPA continue on MCU R163° to MULET. From MULET turn left direct to SKATE, then turn left direct to SOUSA. Continue on Terminal Transition Routes published in Hong Kong AIP.

REMARK :

- (1) Aircraft are NOT TO OVERSHOOT JIUZHOU DVOR (ZAO 117.2 MHz) R230° which defines the northern limit for flights taking off RWY 34 due to NOISE ABATEMENT for Zhuhai City.
- (2) Aircraft unable to comply with the minimum climb gradient must inform MACAO ground control at first contact to allow special coordinations.
- (3) Maximum departure turning speed: 205 kt IAS.
- (4) Standard Instrument Departure Procedures (SIDs) transiting Hong Kong Airspace

Speed Restriction

Aircraft shall fly at 250 kt or less below FL 110.

Loss of communication

In the event of loss of communication, aircraft shall comply with the last acknowledged clearance up to the next reporting point in the SID, then climb to the flight planned cruising level and follow the flight planned route to join the appropriate airway.