PART 2 — EN ROUTE (ENR)

ENR 0

ENR 0.1 PREFACE — See AIP Part 1
ENR 0.2 RECORD OF AIP AMENDMENTS — See AIP Part 1
ENR 0.3 RECORD OF AIP SUPPLEMENTS — See AIP Part 1
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ENR 0.6 TABLE OF CONTENTS TO PART 2

ENR 1 GENERAL RULES AND PROCEDURES

ENR 1.1 GENERAL RULES

1. General rules and procedures

The air traffic rules and procedures applicable to air traffic within the Macau ATZ conform to Annexes 2 and 11 to the Convention on International Civil Aviation; those portions of the Procedures for Air Navigation Services - Rules of the Air and Air Traffic Services; and Air Navigation Regulation of Macao applicable to aircraft and of the Regional Supplementary Procedures applicable to the South East Asia Region, except for the differences listed in GEN 1.7.

2 Separation standards

2.1 Vertical separation

2.1.1 The vertical separation minimum is 1000 ft (300 m).

2.2 Longitudinal separation

2.2.1 Aircraft departing from Macau International Airport shall follow the approval departure time instructed by Macau Tower in accordance with ATC clearance.

3 Communication

3.1 Aircraft outbound from Macau are to remain on Macau Tower frequency until instructed to change to approach frequency.

3.2 To ensure correct receipt of information, the flight crew shall read back to the air traffic controller safety related parts of ATC clearance and instructions which are transmitted by voice . The following items shall always be read back:

a) ATC route clearance

b) Clearances and instructions to enter , land on , take off from , hold short of , cross and backtrack on any runway ; and

c) Runway-in-use , altimeter settings , SSR codes , level instructions , heading and speed instructions ; and

d) Other clearances or instructions, including conditional clearances, unless acknowledgement is given in a manner to clearly indicate that they have been understood and will be complied with.

4 Deviation from flight plans, ATC clearance, instrument approach and departure procedures

4.1 Legislation

4.1.1 The rules for flight under Instrument Flight Rules and Visual Flight Rules are contained in the Air Navigation Regulation of Macao.

4.2 Flight plans

4.2.1 Aircraft may not deviate from current flight plans without the prior approval of ATC, except in an emergency which necessitates immediate action. Aircraft that have deviated from their flight plan in such emergencies are to inform ATC as soon as possible, to enable ATC to resolve any traffic conflictions resulting from the action.

4.3 Deviation from instrument approach and departure procedures

4.3.1 Except in an emergency as in 4.2.1 above aircraft may not deviate from standard instrument approach or departure procedures without the prior approval of ATC.

4.3.2 If visual reference is established before the completion of an instrument approach procedure, the entire procedure must be flown, until clearance to change the flight path has been requested by the pilot and granted by ATC.

4.4 Deviation from air traffic control clearance

4.4.1 ATC Clearance and instructions may not be deviated except in an emergency as in paragraph 4.2.1 above.

5 Radio failure procedure

5.1 Communication failure procedure

5.1.1 SSR equipped aircraft experiencing radio communication failures will operate the transponder on Mode A, code 7600. SSR may be used for acknowledging receipt of any instructions, to verify the aircraft receiver.

5.1.2 If the aircraft radio is completely unserviceable, the pilot should carry out the procedures of radio failure in accordance with ICAO provisions.

ENR 1. 2 VISUAL FLIGHT RULES (VFR)

1. Within Macau ATZ

1.1. Aircraft shall remain at least 1.5 km horizontally and 1000 ft vertically clear of cloud and in a flight visibility of at least 5 km.

1.2. Aircraft flying at speed above of 140 kt may operate under Visual Flight Rules with a flight visibility of at least 5 km. In this case, the aircraft shall remain clear of cloud and in sight of ground or water.

1.3. Helicopter may operate with a flight visibility below 1.5 km if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any obstructions in time to avoid collision.

2. Helicopter flight VFR operations

2.1. Flight plans

2.1.1. Operators shall submit to Macau International Airport ARO a Flight Plan according ICAO SARPS (Annex 2) at least one hour before departure. Submission must be made in one of the following ways: directly by the operator, or its representative, at the Flight Information Unit, or via AFTN to VMMCZPZX or via Fax (++/853/28861145).

2.1.2. Operators shall keep available, at any time, individual Supplementary Flight Plan data (SPL) to be provided, on request, to Macau International Airport ARO.

NOTE: For all off shore oil support helicopters, the procedures will be according to existing letters of agreement (L.O.A.).

2.2. Departure

2.2.1. For Helicopter departing Macau International Airport, ATC clearance shall be requested to Macau GND (freq. 121.725) at least 5 minutes prior to estimated time of departure (ETD).

2.2.2. For Helicopter departing Macau Heliport or Coloane Helicopter Maintenance Base, ATC clearance shall be requested to Macau TWR (freq. 118.0) at least 5 minutes prior to estimated time of departure (ETD).

2.2.3. ATC clearance will be issued when flight reports ready for departure.

2.3. Arrival

2.3.1. Arriving flights shall contact Macau TWR prior to enter the ATZ for traffic information and route clearance. Direct routings will be issued, as long as traffic permits.

2.3.2. Helicopter flights may be requested, for traffic reasons, to remain outside ATZ. Visual Holding instructions and expected approach time will be assigned by the appropriate ATC Unit to individual flight.

2.3.3. When, during flight, IMC becomes in force, helicopter flights may request IFR clearance to perform an ILS approach for landing RWY 34, if certified for IFR.

NOTE: *Macau heliport is closed whenever ceiling and visibility conditions decrease below minima prescribed by appropriate ATS authority*

2.4. Restrictions

2.4.1. Helicopter flights entering or leaving Macau ATZ will only be authorised through VFR entry EAST SECTOR defined by MCU DVOR/DME between radials 031° and 121°.

ENR 1.3 Instruments flight rules (IFR)

1. Instrument Flight Rules (IFR)

1.1. All flights within Macau ATZ, notified for the purposes of Rule 20 of the Rules of the Air Traffic Control, Schedule 11 to the Air Navigation Regulation of Macao, are subject to Instrument Flight Rules in all weather conditions.

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ENR 1.4 ATS AIRSPACE CLASSIFICAITION

1 Division of airspace

The Macau Aerodrome Traffic Zone (ATZ) lies at the southeast edge of the Guangzhou Flight Information Region abutting the Hong Kong Flight Information Region.

The Macau ATZ is regulated airspace, from the surface up to 3000 ft (900 m) included, extending in a circle of 5 NM radius from the aerodrome reference point except to the west where the boundary is a straight line parallel to the runway at a distance of 3 NM. There is a 5 NM wide stub, out to 10 NM on the approach to Runway 34 and a 2 NM wide stub out to 6.27 NM (Jiuzhou DVOR) on the 215° (true bearing) inbound track to the Runway 16 LLZ.

1.1 Classification of Airspace

The Macau Aerodrome Traffic Zone (ATZ) is equivalent to CTR class C which has been adopted by Macau and recommended by ICAO, and the minimum service to be provided is as follows:

- Air traffic control service ;
- Flight information service ;
- Alerting service.

1.2 CLASS C - controlled airspace

1.2.1 The provisions of Class C Airspace are shown below:

	IFR	**VFR**
Separation Provided	IFR from IFR IFR from VFR	VFR from IFR
Service Provided	Air Traffic Control Service	Air Traffic Control Service for separation from IFR. VFR/VFR Traffic Information (and traffic avoidance advice on request)
VMC Minima	Not applicable	5 km below 10 000 ft (3050 m) AMSL 1500 m horizontal, 1000 ft (300 m) vertical distance from clouds.
Speed limitation	Not applicable	Not applicable
Radio communication	Continuous two-way	Continuous two way.
ATC	Required	Required

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ENR 1.5 HOLDING, APPROACH AND DEPARTURE

1 General

1.1 The holding patterns are established within the Zhuhai Airspace and Hong Kong Airspace for the air traffic into Macau International Airport. Detail procedures are published in AIP China and AIP Hong Kong respectively.

1.2 Aircraft unable to comply with the minimum climb gradient as mentioned in procedure must inform Macau ground control at first contact to allow special coordination.

1.3 Speed control

Maximum Approach turning speed:	190 kt IAS
Maximum Missed Approach turning speed:	185 kt IAS
Maximum Departure turning speed:	205 kt IAS

1.4 Standard Arrival Routes (STARS) to MIA Transiting Hong Kong Airspace

1.4.1 Speed control

Speed control shall be in force unless other wise advised.

Aircraft on STAR clearance shall fly at not more than 250 kt IAS whilst they are below FL 110.

1.4.2 Loss of communication

In the event of loss of communication, aircraft shall comply with the specified STAR procedure and Join the ILS feed-in procedure for the notified runway.

1.5 Standard Instrument Departure Procedures (SIDs) transiting Hong Kong Airspace

1.5.1 Speed control

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

1.5.2 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/Transition procedure, then climb to the flight planned cruising level and follow the SID/Transition track to the Hong Kong TMA exit point.

2 Approach and departure procedures

Procedures are described in AD sections.

3. Transfer of Control Points

Flight Procedures	Transfer of control				
	Transferring ATCU	Accepting ATCU	Point/Position	Altitude	
RWY 34 Arrival	Zhuhai	Hong Kong	ROMEO	6000 ft	
	Zhuhai	Hong Kong	'MCU' VOR	7000 ft	For traffic from the direction of 'NLG' VOR
	Hong Kong	Macao	As soon as aircraft established on 'MCN' ILS	Appropriate profile altitude	
RWY 34 Departure or Missed Approach	Macao	Zhuhai	Initial right turn after DEP/MAP	900 m or below	
	Zhuhai	Hong Kong	'LKC' VOR	6 000 ft	Reach 6 000 ft by 'LKC' VOR.
RWY 16 Arrival	Hong Kong	Zhuhai	INDUS	2 700 m	For traffic from Hong Kong FIR to Macao via Zhuhai airspace.
	Zhuhai	Macao	As soon as aircraft established on 'MCS' LLZ	3 000 ft or below	For all arrivals
RWY 16 Departure	Macao	Hong Kong	As soon as practicable after departure and before enter Hong Kong FIR, climbing to assigned SID altitude	3 000 ft or below	For SIDs transiting HK FIR via PAPA, HK ATC shall not climb aircraft above 4000 ft until PAPA, unless otherwise co-ordinated and agreed with Zhuhai Approach.
	Hong Kong	Zhuhai	Common FIR boundary between Hong Kong and Zhuhai	1 800 m or below	Climbing to1800 m for aircraft on SHL/ NLG SIDs, climbing to 1500 m for aircraft on BIGRO SID, unless otherwise co-ordinated and agreed with Zhuhai Approach.
RWY 16 Missed Approach	Macao	Hong Kong	Crossing 'MCU' VOR climbing to 4 000 ft	3 000 ft or below	
	Zhuhai	Hong Kong	Crossing 'MCU' VOR climbing to 4 000 ft	4 000 ft or below	For missed approach traffic under control of Zhuhai APP
	Hong Kong	Zhuhai	INDUS	1 800 m	

4. Departure and Arrival Separation

4.1 The minimum spacing between departing flights proceeding from Macao to Zhuhai or Hong Kong airspace shall be 5 minutes with the exception of the following:

(a) when a departure slot time is issued by Zhuhai APP or Hong Kong ACC;

(b) when additional flow control restriction is issued by Zhuhai APP or Hong Kong ACC;

(c) the flow control restriction is 3 minutes between 1401 – 0100 UTC.

4.2 The minimum spacing in para 4.1 above may be reduced if prior approval is obtained from Zhuhai APP or Hong Kong ACC.

4.3 The minimum longitudinal separation between two arriving aircraft at the same speed and on the same routes shall be 20 NM, provided both aircraft are under radar control in Hong Kong or Zhuhai airspace, for the following traffic:

(a) proceeding from Hong Kong FIR for Macao RWY 16, irrespective of altitude; or

(b) proceeding from "MCU" VOR for Macao RWY 34; or

(c) proceeding via "ROMEO" for Macao RWY 34.

4.4 The minimum longitudinal separation between arriving traffic handed over from Zhuhai APP or Hong Kong ACC to Macao Tower shall be 10 NM.

4.5 When low visibility operations (RWY 34 ILS Cat II) are declared or specifically co-ordinated by Macao Tower, the minimum longitudinal separation between arriving traffic for Macao shall be 15 NM.

4.6 The minimum longitudinal separation between RWY 16 missed approach aircraft and other Runway 16 departures transiting Hong Kong for Zhuhai airspace shall be 20 NM.

5 Runway 16 circling approach procedure

5.1 The procedure is applicable for traffic approaching Macau International Airport from the South (Hong Kong FIR).

5.2 The weather minima of 1500 ft cloud base and 6 km visibility shall be met.

5.3 On receipt of a request to carry out the circling procedure for landing RWY 16, Hong Kong Approach will, after assessing the feasibility based on known traffic and prevailing conditions, inform Macau Tower, who shall liaise with Zhuhai Approach and revert to Hong Kong Approach to confirm whether all criteria can be met. In approving such a request, all three units shall adopt a window time of ETA ± 20 mins during which there will be no other IFR movements. The circling approach will only be approved subject to the agreements of the three ATC units.

5.4 Procedure is described in the AD section.

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ENR 1.6 RADAR SERVICES AND PROCEDURES

1 Primary Radar and Secondary Surveillance Radar

Secondary radars existing not to be used for radar control. Used for supplementary gathering of information on traffic when thought useful and in emergency case.

2 Secondary Surveillance Radar (SSR)

2.1 Carriage of Secondary Surveillance Radar transponders

2.1.1 All aircraft flying within the Macau ATZ are required to carry Mode 3/A (4096 code) and Mode C transponders which comply with the specifications of ICAO Annex 10 Part 1.

2.1.2 The control of aircraft will be procedural aided by radar watching as for the reference purpose.

2.2 Operating procedures

2.2.1 For departing aircraft, a SSR code will be assigned by the Macau ATC Tower in accordance with the ATC clearances received from the appropriate ATC unit; for arriving aircraft a SSR code will be assigned by the appropriate ATC unit.

2.2.2 Aircraft immediately prior to the take-off run shall switch the transponder from “standby” to “on”.

2.2.3 Aircraft, immediately after landing, shall switch-off the transponder.

2.2.4 Aircraft without prior instruction may set the transponder on Mode A, code:

- 7500 in case of unlawful interference;
- 7600 in case of radio communications failure;
- 7700 in case of emergencies.

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ENR 1.7 ALTIMETER SETTING PROCEDURES

1 The terms used in these procedures are as defined in ICAO Document 8168

2 Transition altitude is 9000 ft or 2700 m

3 In Zhuhai Terminal Control Area:

the transition altitude: 2700 m

the transition level is according to the following QNH value:

a) 980 hPa or above: 3300 m

b) 979 hPa or below: 3600 m

In Hong Kong Approach Control Area:

the transition altitude: 9000 ft

the transition level is according to the following QNH value:

a) 980 hPa or above: FL 110

b) 979 hPa or below: FL 120

4 Procedures

4.1 Aircraft operating within Zhuhai airspace, follow the RAC 2, AIP China ;

Aircraft operating within Hong Kong airspace, follow the ENR 1.7 of AIP Hong Kong.

5 Change of Settings

5.1 Arriving aircraft at Macau International Airport from Zhuhai airspace, will change from an altimeter setting of Zhuhai local QNH to the Macau local QNH setting, which will be instructed by Zhuhai APP.

From Hong Kong airspace, aircraft will change an altimeter setting of Hong Kong local QNH to Macau local QNH setting which will be instructed by Hong Kong ACC.

5.2 Departing aircraft from Macau International Airport into Zhuhai airspace, will change from the Macau local QNH setting to an altimeter setting of Zhuhai local QNH. Departure to Hong Kong airspace, aircraft will change from Macau local QNH to Hong Kong local QNH.

6 Barometric Pressure Information

6.1 Current QNH reports are continuously available on the Automatic Terminal Information Service, frequency 126.4 MHz 24 hours.

6.2 QNH and QFE settings are rounded down to the nearest whole hectopascal. QFE settings are available on request.

6.3 All altimeter setting values are given in hectopascals. All operators and agencies must provide their own facilities for conversion to other units.

ENR 1.8 REGIONAL SUPPLEMENTARY PROCEDURES

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ENR 1.9 AIR TRAFFIC FLOW MANAGEMENT

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ENR 1.10 FLIGHT PLANNING

1 Procedures for the submission of flight plan

1.1 All flight plan and related ATS messages for traffic inbound Macau International Airport shall be addressed to VMMCZTZX, ZBBBZFPM, ZSSSZFPM, ZGZUZQZX, ZGJDZAZX and VHHKZQZX additionally to the ICAO standard addressing (as per Doc 4444). Operators are strongly recommended to adhere strictly to this procedure in order to avoid inflight delays due to lack of Flight Plan on the above mentioned ATC Units.

2 Time of submission

2.1 Airline operator can file a FPL up to 5 days (120 hours) prior to the EOBT.

2.2 Except where necessary for operational or technical reasons, any aircraft departing from Macau should submit a flight plan at least 3 hours (and in no case later than 60 minutes) prior to the estimated off-block time (EOBT) except aircraft operating from Macau local flights which are permitted to give flight notification.

2.3 In the event of a delay of 30 minutes in excess of the EOBT for a flight for which a flight plan has been submitted, the flight plan should be amended or a new flight plan submitted and the old flight plan cancelled, whichever is applicable.

3 Place of submission

3.1 Operators shall submit to Macau International Airport ARO a Flight Plan according to ICAO SARPS (Annex 2) in one of the following ways: directly by the operator, or its representative, at the Flight Information Unit, or via AFTN/AMHS to VMMCZPZX. Subject to coordination with Macau International Airport ARO, submission of flight plan and related ATS messages may be sent by email or fax in case the above ways of submission are not available.

3.2 Operators shall keep available, at any time, individual Supplementary Flight Plan data (SPL) to be provided, on request, to Macau International Airport ATS.

4 Contents and Form of flight plan

4.1 As per ICAO Doc 4444 (PANS - ATM)

4.2 All operators are required to strictly comply with the route syntax specified as below:

4.2.1 Departing from Macau International Airport transiting Guangzhou FIR:

	Initial Flight Planned route to be filled in item 15 of the standard ICAO Flight Plan	**Connecting Route**
(1)	MIPAG	W21
(2)	SHL	G471/A461/W22
(3)	BIGRO	R200/G221
(4)	NLG [1]	--

1 For flights landing Shenzhen Bao'an International Airport

4.2.2 Departing from Macau International Airport transiting Hong Kong FIR:

Operators are to refer to Hong Kong AIP ENR 1.10 Flight Planning, Section 7.2 for the initial Flight Planned route.

5 Repetitive flight plan system

5.1 Not available to and from Macau International Airport.

NOTE: For all off shore oil support helicopters, the procedures will be according to existing letters of agreement (L.O.A.).

ENR 1.11 ADDRESSING OF FLIGHT PLAN MESSAGES

1 General

Flight movement messages relating to traffic into Macao ATZ shall be addressed as stated below in order to warrant correct relay and delivery.

(Flight movement messages in this context comprise flight plan messages, delay messages, amendment messages and flight plan cancellation messages. ICAO PANS-ATM DOC 4444, Part VIII 2.1.1.3 refers).

Category of Flight	Route	Message Address
All flights (IFR/VFR)	Inbound to Macao	VMMCZTZX VHHKZQZX ZBBBZFPM ZSSSZFPM ZGZUZQZX ZGJDZAZX
All flights (IFR/VFR)	Outbound from Macao	VMMCZPZX

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ENR 1.12 INTERCEPTION OF CIVIL AIRCRAFT

1. Action by intercepted aircraft

1.1 An aircraft which is intercepted by another aircraft shall immediately:

a) follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in paragraph 3 below;

b) notify, if possible, the appropriate air traffic services unit;

c) attempt to establish radio communication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 121.5 MHz, giving the identity of the intercepted aircraft and the nature of the flight; and if no contact has been established and if practicable, repeating this call on the emergency frequency 243 MHz;

d) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit;

e) If equipped with ADS-B or ADS-C, select the appropriate emergency functionality, if available, unless otherwise instructed by the appropriate air traffic services unit.

1.2 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.

1.3 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the intercepted aircraft shall request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft.

2. Radio communication during interception

2.1 If radio contact is established during interception but communication in a common language is not possible, attempts shall be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in the following table and transmitting each phrase twice:

Phrases for use by INTERCEPTING aircraft			*Phrases for use by INTERCEPTED aircraft*		
Phrase	*Pronunciation*[1]	*Meaning*	*Phrase*	*Pronunciation*[1]	*Meaning*
CALL SIGN	KOL SA-IN	What is your call sign?	CALL SIGN (call sign)[2]	KOL SA-IN (call sign)	My call sign is (call sign)
FOLLOW	FOL-LO	Follow me	WILCO Will comply	VILL-KO	Understood
DESCEND	DEE-SEND	Descend for landing	CAN NOT	KANN NOTT	Unable to comply
YOU LAND	YOU LAAND	Land at this aerodrome	REPEAT	REE-PEET	Repeat your instruction
PROCEED	PRO-SEED	You may proceed	AM LOST	AM LOSST	Position unknown
			MAYDAY	MAYDAY	I am in distress
			HIJACK[3]	HI-JACK	I have been hijacked
			LAND (place name)	LAAND (place name)	I request to land at (place name)
			DESCEND	DEE-SEND	I require descent

1. *In the second column, syllables to be emphasized are underlined.*
2. *The call sign required to be given is that used in radiotelephony communications with air traffic services units and corresponding to the aircraft identification in the flight plan.*
3. *Circumstances may not always permit, nor make desirable, the use of the phrase "HIJACK".*

3. Signal for use in the event of interception

3.1 Signals initiated by intercepting aircraft and responses by intercepted aircraft

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
1	DAY or NIGHT — Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right if the intercepted aircraft is a helicopter) and, after acknowledgement, a slow level turn, normally to the left (or to the right in the case of a helicopter) on the desired heading. *Note 1.— Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.* *Note 2.— If the intercepted aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of racetrack patterns and to rock the aircraft each time it passes the intercepted aircraft.*	You have been intercepted. Follow me.	DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following. *Note.— Additional action required to be taken by intercepted aircraft is prescribed in rule 15.*	Understood, will comply.
2	DAY or NIGHT — An abrupt breakaway manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.	You may proceed.	DAY or NIGHT — Rocking the aircraft.	Understood, will comply.
3	DAY or NIGHT — Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near to the landing area.	Land at this aerodrome.	DAY or NIGHT — Lowering landing gear, (if fitted), showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use or helicopter landing area, landing is considered safe, proceeding to land.	Understood, will comply.

3.2 Signals initiated by intercepted aircraft and responses by intercepting aircraft

Series	INTERCEPTED Aircraft Signals	Meaning	INTERCEPTING Aircraft Responds	Meaning
4	DAY or NIGHT — Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300 m (1 000 ft) but not exceeding 600 m (2 000 ft) (in the case of a helicopter, at a height exceeding 50 m (170 ft) but not exceeding 100 m (330 ft)) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	DAY or NIGHT — If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft. If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.	Understood, follow me. Understood, you may proceed.
5	DAY or NIGHT — Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	Understood.
6	DAY or NIGHT — Irregular flashing of all available lights.	In distress.	DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	Understood.

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ENR 1.13 UNLAWFUL INTERFERENCE

1. An aircraft which is being subjected to unlawful interference shall endeavour to notify the appropriated ATS unit of this fact, any significant circumstances associated therewith and any deviation from the current flight plan necessitated by the circumstances, in order to enable the ATS unit to give priority to the aircraft and to minimize conflict with other aircraft.

2. If an aircraft is subjected to unlawful interference, the pilot-in-command shall attempt to land as soon as practicable at the nearest suitable aerodrome or at a dedicated aerodrome assigned by the appropriate authority unless considerations aboard the aircraft dictate otherwise.

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ENR 1.14 AIR TRAFFIC INCIDENTS

1 General

1.1 In case of proximity of two aircraft, by which one or both pilots involved feel endangered (AIRPROX) or in case of other serious problems which may endanger the flight (erroneous procedures and/or non-observance of procedures or failure of ground stations), the pilot (or both pilots) in radio contact with an ATC unit shall transmit a corresponding air traffic incident report to this unit.

1.2 The report should contain as detailed information as possible on the other aircraft and also on the course of the occurrence. A useful aid for this purpose is the form "Air traffic Incident Report". It is recommended to carry some of these forms on board. Nevertheless, supplementary data may be obtained from ATC units.

1.3 After landing, the report transmitted via radio should be confirmed in writing, as quick as possible thus helping to increase the chance to identify the aircraft involved by reporting additional, important or corrective details, and also contributing to a more objective finding of the causes.

Written post-flight confirmation is also necessary because only in these cases is the AACM able to inform pilots of the result of the investigations.

The written communication shall be directed to:

President of Civil Aviation Authority

Alameda Dr. Carlos D'Assumpção, 336-342

Centro Comercial Cheng Feng, 18º andar

Macau

1.4 Receipt of written report will be acknowledged by the President of Civil Aviation Authority.

1.5 When the investigation is complete, originators of reports will be informed by writing of the findings.

1.6 The forms are available at the ARO at Airport.

2. Definition of "AIR TRAFFIC INCIDENTS"

2.1 "Air traffic incident" is used to mean a serious occurrence related to the provision of air traffic services, such as:

a) aircraft proximity (AIRPROX)

b) serious difficulty resulting in a hazard to aircraft caused, for example, by

1) faulty procedures

2) non-compliance with procedures, or

3) failure of ground facilities.

2.1.1 Definitions

AIRCRAFT PROXIMITY:

A situation in which, in the opinion of the pilot or of the air traffic services personnel, the distance between aircraft, as well as their relative positions and speed, has been such that the safety of the aircraft involved may have been compromised. Aircraft proximity is classified as follows:

Risk of collision:
the risk classification of aircraft proximity in which serious risk of collision has existed.

Safety not assured:
the risk classification of aircraft proximity in which the safety of the aircraft may have been compromised.

No risk of collision:
the risk classification of aircraft proximity in which no risk of collision has existed.

Risk not determined:
the risk classification of aircraft proximity in which insufficient information was available to determine the risk involved, or inconclusive or conflicting evidence precluded such determination.

AIRPROX.
The code word used in an air traffic incident report to designate aircraft proximity.

2.2 Air traffic incidents are designated and identified in reports as follows:

TYPE	DESIGNATION
Air traffic incident	Incident
as 2.1 a)	AIRPROX (aircraft proximity)
as 2.1 b) 1) and 2)	Procedure
as 2.1 b) 3)	Facility

3 Use of the air traffic incident report form

The Air Traffic Incident Report Form is intended for use:

a) by a pilot for filling a report on an air traffic incident after arrival or for confirming a report made initially by radio during flight;

b) by an ATS unit for recording an air traffic incident report received by radio, telephone or teleprinter;

c) by an ATS unit for filing a report on an air traffic incident.

Remark: Mod. ATIRF (Air Traffic Incident Report Form) can be transmitted by FAX if in accordance with the Incident Report format.

4 Pilot reporting procedures

The following are the procedures to be followed by a pilot who is or has been involved in an incident:

a) during flight use the appropriate air/ground frequency for reporting an incident of major significance, particularly if it involves other aircraft, so as to permit the facts to be ascertained immediately;

Remark: an initial report made by radio shall contain the shaded items of the form.

b) as promptly as possible after landing, submit a completed Air Traffic Incident Report Form

1) for confirming a report of an incident made initially as in 2.1 a), or for making the initial report on such an incident if it had not been possible to report it by radio;

2) for reporting an incident which did not require immediate notification at the time of occurrence.

c) The confirmatory report must be either submitted to the ATS reporting office (ARO) of the aerodrome of first landing (or to the nearest ATS unit if ARO is not available at the landing aerodrome) using the appropriate format, or sent immediately to AACM.

d) In order to allow the storage of recordings, initial and confirmatory reports forwarded by pilots must reach AACM within 10 days from the occurrence of the incident.

Remark: if the confirmation of the initial report made in flight is missing, AACM will not be able to accomplish the inquiry procedure.

5 ATS Unit reporting procedure

a) As stated in Para 3 subpara b) and c) the Air Traffic Incident Report Form shall be used by an ATS unit in order to:

1) record an air traffic incident report received by radio, telephone or teleprinter;

2) submit an air traffic incident report for incidents specifically related to the provisions of air traffic services or other serious difficulty resulting in a hazard to aircraft, caused by, e.g.: faulty procedures, non-compliance with procedures, or failure of ground facilities.

Remark 1: if the air traffic incident concerns a pilot, the controller should, when possible, inform the pilot on the appropriate frequency.

Remark 2: for the compilation of the report in the cases stated in 2) above, the ATS unit shall fill item F of the ATIRF and any other item deemed necessary, following the pertinent instructions.

b) ATIRF filed by ATS units will be sent by the quickest means available, to:

- the pilot in command of the aircraft
- AACM
- Air operator

c) The pilot in command receiving the report should send his own report by the quickest means available both to the ATS unit sender and to AACM.

6 Purpose of reporting and handling of the form

6.1 The purpose of the reporting of aircraft proximity incidents and their investigation is to promote the safety of aircraft. The degree of risk involved in an aircraft proximity incident will be determined in the incident investigation and classified as “risk of collision”, “safety not assured”, “no risk of collision” or “risk not determined”.

6 .2 The purpose of the form is to provide investigation authorities with as complete information on an air traffic incident as possible and to enable them to report back, with the least possible delay to the pilot or operator concerned, the result of the investigation of the incident and, if appropriate, the remedial action taken.

7 Investigation

When the investigation is complete and a review has been made by the appropriate assessing agency, the pilots, controllers and their respective operating bodies involved in the AIRPROX will be advised of the findings.

8 AIRPROX in foreign airspace

Whilst AACM has no authority to investigate any AIRPROX in foreign airspace, it is concerned about them particularly when Macau public transport aircraft are involved. Accordingly, for these aircraft, copies of confirmatory reports made to foreign authorities and details of any response received from them are to be sent to AACM. The AACM expects commanders / operators of the aircraft to initiate, confirm and follow through AIRPROX reports directly with the foreign authorities themselves in accordance with the appropriate national procedures. The Authority will, however, assist reporters where they have difficulty in following national procedures or in obtaining a response. AACM may also take action of its own accord with a foreign authority on receipt of a report or follow-up where, for instance, if from its knowledge of previous occurrences, considers this necessary.

9 Fault report on Communication and Navigation Facilities

In order to enable the Authority to closely monitor the performance of its communication facilities, visual and non-visual aids and to undertake remedial action immediately on any faults occurring, pilots operating within the Macau ATZ are kindly requested to bring to notice of the Authority immediately any faults that are detected by them. For this purpose, pilots are request to fill a report, to be delivered to ARO stating the following:

Aircraft operator

Call sign

Aircraft position

Day, time

Type of facility

Type of disturbance on malfunction

Weather conditions present

Remark (in case of interference, tentative description if it is weak, strong ..., interference duration (continuous, with peaks....))

10 Coordination / Investigation Authority

10.1 Coordination/ Investigation Authority responsible for the Coordination/Investigation of AIRPROX, Infringements, ATC Complaints, Fault Reporting and Post-Flight Information Service:

COORDINATION /INVESTIGATION AUTHORITY	AREA OF RESPONSIBILITY
President of Civil Aviation Authority Alameda Dr. Carlos D'Assumpção, 336-342 Centro Comercial Cheng Feng, 18º andar Macau Tel: (853) 2851 1213 Fax: (853) 2833 8089 AFTN: VMMCYAYA	Within Macau ATZ

10.2 The confirmation report shall be sent to the address mentioned in 10.1 by fax or mail.

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AIR TRAFFIC INCIDENT REPORT FORM

For use when submitting and receiving reports on air traffic incidents. In an initial report by radio, shaded items should be included.

A — AIRCRAFT IDENTIFICATION	**B — TYPE OF INCIDENT**
	AIRPROX / PROCEDURE / FACILITY*

C — THE INCIDENT

1. General

a) Date / time of incident _____ UTC

b) Position _____

2. Own aircraft

a) Heading and route _____

b) True airspeed _____ measured in ( ) kt _____ ( ) km/h _____

c) Level and altimeter setting _____

d) Aircraft climbing or descending

( ) Level flight ( ) Climbing ( ) Descending

e) Aircraft bank angle

( ) Wings level ( ) Slight bank ( ) Moderate bank

( ) Steep bank ( ) Inverted ( ) Unknown

f) Aircraft direction of bank

( ) Left ( ) Right ( ) Unknown

g) Restrictions to visibility (select as many as required)

( ) Sun glare ( ) Windscreen pillar ( ) Dirty windscreen

( ) Other cockpit structure ( ) None

h) Use of aircraft lighting (select as many as required)

( ) Navigation lights ( ) Strobe lights ( ) Cabin lights

( ) Red anti-collision lights ( ) Landing / taxi lights ( ) Logo (tail fin) lights

( ) Other ( ) None

i) Traffic avoidance advice issued by ATS

( ) Yes, based on ATS surveillance system ( ) Yes, based on visual sighting ( ) Yes, based on other information

( ) No

j) Traffic information issued

( ) Yes, based on ATS surveillance system ( ) Yes, based on visual sighting ( ) Yes, based on other information

( ) No

* Delete as appropriate.

k) Airborne collision avoidance system — ACAS

( ) Not carried ( ) Type ( ) Traffic advisory issued

( ) Resolution advisory issued ( ) Traffic advisory or resolution advisory not issued

l) Identification

( ) No ATS surveillance system available ( ) Identification ( ) No identification

m) Other aircraft sighted

( ) Yes ( ) No ( ) Wrong aircraft sighted

n) Avoiding action taken

( ) Yes ( ) No

o) Type of flight plan IFR / VFR / none*

3. Other aircraft

a) Type and call sign / registration (if known) _____

b) If a) above not known, describe below

( ) High wing ( ) Mid wing ( ) Low wing

( ) Rotorcraft

( ) 1 engine ( ) 2 engines ( ) 3 engines

( ) 4 engines ( ) More than 4 engines

Marking, colour or other available details

_____

_____

_____

_____

c) Aircraft climbing or descending

( ) Level flight ( ) Climbing ( ) Descending

( ) Unknown

d) Aircraft bank angle

( ) Wings level ( ) Slight bank ( ) Moderate bank

( ) Steep bank ( ) Inverted ( ) Unknown

e) Aircraft direction of bank

( ) Left ( ) Right ( ) Unknown

f) Lights displayed

( ) Navigation lights ( ) Strobe lights ( ) Cabin lights

( ) Red anti-collision lights ( ) Landing / taxi lights ( ) Logo (tail fin) lights

( ) Other ( ) None ( ) Unknown

* Delete as appropriate.

( ) Yes, based on ATS surveillance system ( ) Yes, based on visual sighting ( ) Yes, based on other information

( ) No ( ) Unknown

h) Traffic information issued

( ) Yes, based on ATS surveillance system ( ) Yes, based on visual sighting ( ) Yes, based on other information

( ) No ( ) Unknown

i) Avoiding action taken

( ) Yes ( ) No ( ) Unknown

4. Distance

a) Closest horizontal distance _____

b) Closest vertical distance _____

5. Flight meteorological conditions

a) IMC / VMC*

b) Above / below* clouds / fog / haze or between layers*

c) Distance vertically from cloud _____ m / ft* below _____ m / ft* above

d) In cloud / rain / snow / sleet / fog / haze*

e) Flying into / out of* sun

f) Flight visibility _____ m / km*

6. Any other information considered important by the pilot-in-command

_____

_____

_____

_____

_____

D — MISCELLANEOUS

1. Information regarding reporting aircraft

a) Aircraft registration _____

b) Aircraft type _____

c) Operator _____

d) Aerodrome of departure _____

e) Aerodrome of first landing _____ Destination _____

f) Reported by radio or other means to _____ (name of ATS unit) at date/time _____ UTC

g) Date / time / place of completion of form _____

* Delete as appropriate.

2. Function, address and signature of person submitting report

a) Function _____

b) Address _____

c) Signature _____

d) Telephone number _____

3. Function and signature of person receiving report

a) Function _____ b) Signature _____

E — SUPPLEMENTARY INFORMATION BY ATS UNIT CONCERNED

1. Receipt of report

a) Report received via AFTN / radio / telephone / other (specify)* _____

b) Report received by _____ (name of ATS unit)

2. Details of ATS action

Clearance, incident seen (ATS surveillance system/visually, warning given, result of local enquiry, etc.)

_____

_____

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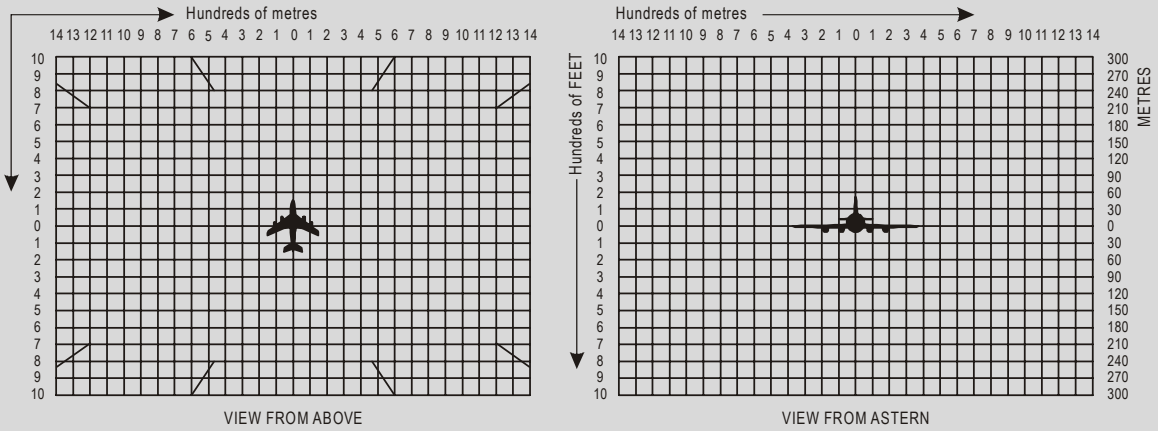
DIAGRAMS OF AIRPROX

Mark passage of other aircraft relative to you, in plan on the left and in elevation on the right, assuming YOU are at the centre of each diagram. Include first sighting and passing distance.



* Delete as appropriate.

Instructions for the completion of the air traffic incident report form

Item

A Aircraft identification of the aircraft filing the report.

B An AIRPROX report should be filed immediately by radio.

C1 Date/time UTC and position in bearing and distance from a navigation aid or in LAT/LONG.

C2 Information regarding aircraft filing the report, tick as necessary.

C2 c) E.g. FL 350/1 013 hPa or 2 500 ft/QNH 1 007 hPa or 1 200 ft/QFE 998 hPa.

C3 Information regarding the other aircraft involved.

C4 Passing distance — state units used.

C6 Attach additional papers as required. The diagrams may be used to show the aircraft's positions.

D1 f) State name of ATS unit and date/time in UTC.

D1 g) Date and time in UTC and place of completion of form.

E2 Include details of ATS unit such as service provided, radiotelephony frequency, SSR codes assigned and altimeter setting. Use diagram to show the aircraft's position and attach additional papers as required.

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ENR 2 AIR TRAFFIC SERVICES AIRSPACE

ENR 2.1 FIR, UIR, TMA

NAME AND LATERAL LIMITS	UPPER LIMIT LOWER LIMIT	UNIT PROVIDING SERVICE	RADIO CALL SIGN (LANGUAGES)	REMARKS
1	2	3	4	5
GUANGZHOU FIR	16000 M SFC	GUANGZHOU ACC	GUANGZHOU Control (Chinese-English)	For each boundary of Chinese FIR and CTA: see AIP China
HONG KONG FIR	UNL SFC	HONG KONG ACC	HONG KONG Control (English)	See AIP Hong Kong
Zhuhai Terminal Control Area		ZHUHAI APP	ZHUHAI Approach (Chinese - English)	ZHUHAI APP are responsible for provision of air traffic control service, flight information service and alerting service to the air traffic into and out of Macau International Airport.
HONG KONG CTA		HONG KONG TWR/ZNC/APP	HONG KONG Tower HONG KONG Zone HONG KONG Approach (English)	HONG KONG APP are responsible for provision of air traffic control service, flight information service and alerting service to the air traffic into and out of Macau International Airport.

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ENR 2.2 OTHER REGULATED AIRSPACE

NIL.

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ENR 3 ATS ROUTES

ENR 3.1 LOWER ATS ROUTES

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ENR 3.2 UPPER ATS ROUTES

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ENR 3.3 AREA NAVIGATION ROUTES

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ENR 3.4 HELICOPTER ROUTES

1. Macao - Hong Kong VFR Routes

1.1 Reporting Point for Route A, Route A2, Route B1 and Route C1

Reporting Point	Co-ordinates	
Macao Heliport	22 11 48 N	113 33 33 E
Sky Shuttle Heliport	22 17 19.7 N	114 09 08.4 E
Cheung Chau Buoy	22 12 24 N	114 00 12 E
Cheng Chau South	22 09 00 N	114 01 48 E
CHAKO	22 10 20.5 N	113 56 16.3 E
FAN LAU	22 11 24 N	113 51 00 E
FATUT	22 11 32.4 N	113 48 03.6 E
FOVOG	22 11 33.2 N	113 40 58.3 E
GOGRE	22 11 33.2 N	113 34 30.4 E
Green Island	22 17 20 N	114 06 20 E
HASAN	22 10 18.6 N	113 53 20.9 E
HOROT	22 16 40.0 N	114 05 56.8 E
HVB01	22 10 32 N	113 43 27 E
HVB02	22 09 35 N	113 48 34 E
HVB03	22 09 34 N	113 51 43 E
HVB04	22 09 00 N	113 54 08 E
HVC02	22 04 48 N	113 41 52 E
HVC03	22 04 46 N	113 44 08 E
LEVKE	22 14 58.2 N	114 04 42.7 E
Lighthouse	22 04 42 N	113 48 12 E
QUBEC	22 06 01.7 N	113 40 45.3 E
TANGO	22 11 24 N	113 40 12 E
UNIFORM	22 09 00 N	113 40 42 E
WAVOS	22 12 01.5 N	114 04 02.3 E
Waypoint 2	22 05 00 N	113 53 12 E
ZEXEK	22 10 23.1 N	114 00 34.9 E

1.2 Routes

Name	Route	Availability
Route A	Sky Shuttle Heliport - Green island - Cheung Chau Buoy - Fan Lau - Tango - Macao Heliport	VFR /SVFR Standard Westbound Route
Route B1	Macao Heliport - UNIFORM - HVB01 - HVB02 - HVB03 - HVB04 - Cheung Chau South - Green Island - Sky Shuttle Heliport	VFR only Standard Eastbound Route
Route C1	Macao Heliport - QUBEC - HVC02 - HVC03 -Lighthouse - Waypoint 2 - Cheung Chau South - Green Island - Sky Shuttle Heliport	VFR / SVFR Standard Eastbound Route
Route A2	Sky Shuttle Heliport – HOROT – LEVKE – WAVOS – ZEXEK – CHAKO – HASAN – FATUT – FOVOG – GOGRE – Macao Heliport	SVFR only Standard Westbound Route

1.3 Vertical Limits

Route	Hong Kong RWY in Use	Operating Conditions	Maximum Altitude
Route A	RWY 07	VFR / SVFR	500 ft AMSL
	RWY 25	VFR / SVFR	900 ft AMSL
Route B1	RWY 07	VFR	500 ft AMSL
	RWY 25	VFR	1200 ft AMSL
Route C1	RWY 07	VFR	500 ft AMSL
		SVFR	1000 ft AMSL
	RWY 25	VFR / SVFR	1200 ft AMSL
Route A2	RWY 07	SVFR	500 ft AMSL
	RWY 25	SVFR	900 ft AMSL

2. Macao - Hong Kong IFR Routes

2.1 General

2.1.1 The helicopter IFR routes (J & L) are available to authorized operators only as they are specifically surveyed and flight tested routes with minimum operating altitudes below the general MSA and MVA.

2.1.2 Only one helicopter at time shall use the helicopter IFR routes J & L.

2.1.3 Helicopters using the IFR procedure shall carry a serviceable SSR transponder.

2.1.4 Notification (telephone / fax) shall be submitted to relevant ATC units prior to initiation of IFR procedures.

2.1.5 It is the operator's responsibility to adhere strictly to the standard track and altitude profile for the direction of flight. No deviation from the published track, holding pattern or missed approach procedure is permitted unless the helicopter has been cleared to and reached the appropriated MVA or MSA.

2.1.6 Helicopter departing Macao shall report to Macao Tower 5 minutes before ready for lift-off.

2.1.7 VFR/Special VFR flights (as appropriate) on Routes B1 and C1 shall not be permitted while IFR Routes J or L are in use except with prior coordination.

2.1.8 IFR routes J and L shall not normally be used during peak periods of Macao Airport scheduled arrivals.

2.2 Reporting Point for Route J and L

Reporting Point	Co-ordinates		Cross reference from Navaid
Macao Heliport	22 11 48 N	113 33 33 E	
Sky Shuttle Heliport	22 17 19.7 N	114 09 08.4 E	
PEARL	22 03 04.7 N	113 47 35.7 E	MCU R116° / DME 12.0
QUBEC	22 06 01.7 N	113 40 45.3 E	MCU R116° / DME 5.0
WALIN	22 05 40.10 N	113 58 43.20 E	
KEMTE	22 05 44.56 N	114 06 50.54 E	

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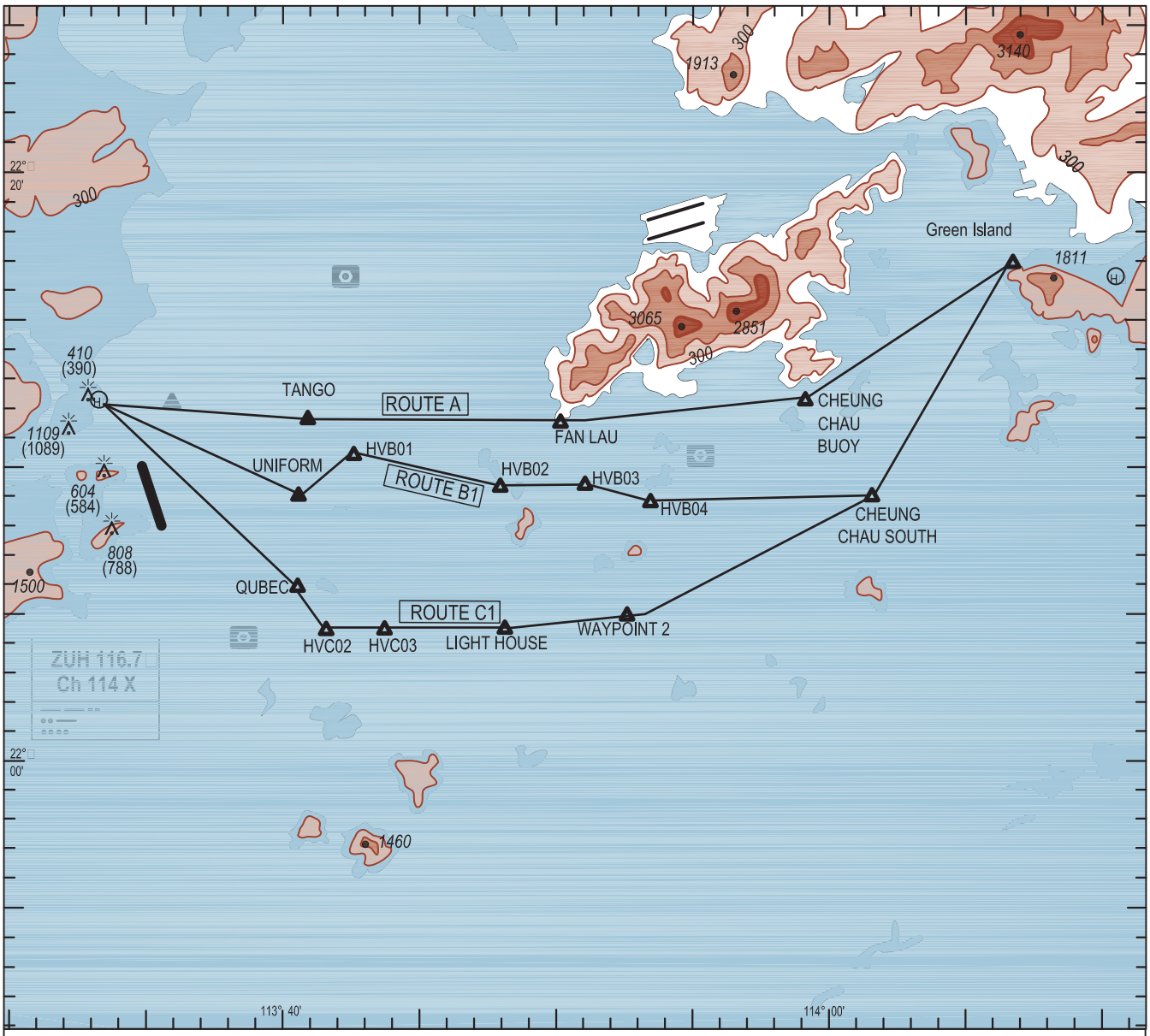
22° 20'
300
1913
300
3140
300
Green Island
1811
3065
2851
300
410
(390)
TANGO
ROUTE A
FAN LAU
CHEUNG
CHAU
BUOY
1109
(1089)
UNIFORM
HVB01
ROUTE B1
HVB02
HVB03
HVB04
604
(584)
CHEUNG
CHAU SOUTH
808
(788)
1500
QUBEC
ROUTE C1
HVC02
HVC03
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113° 40'
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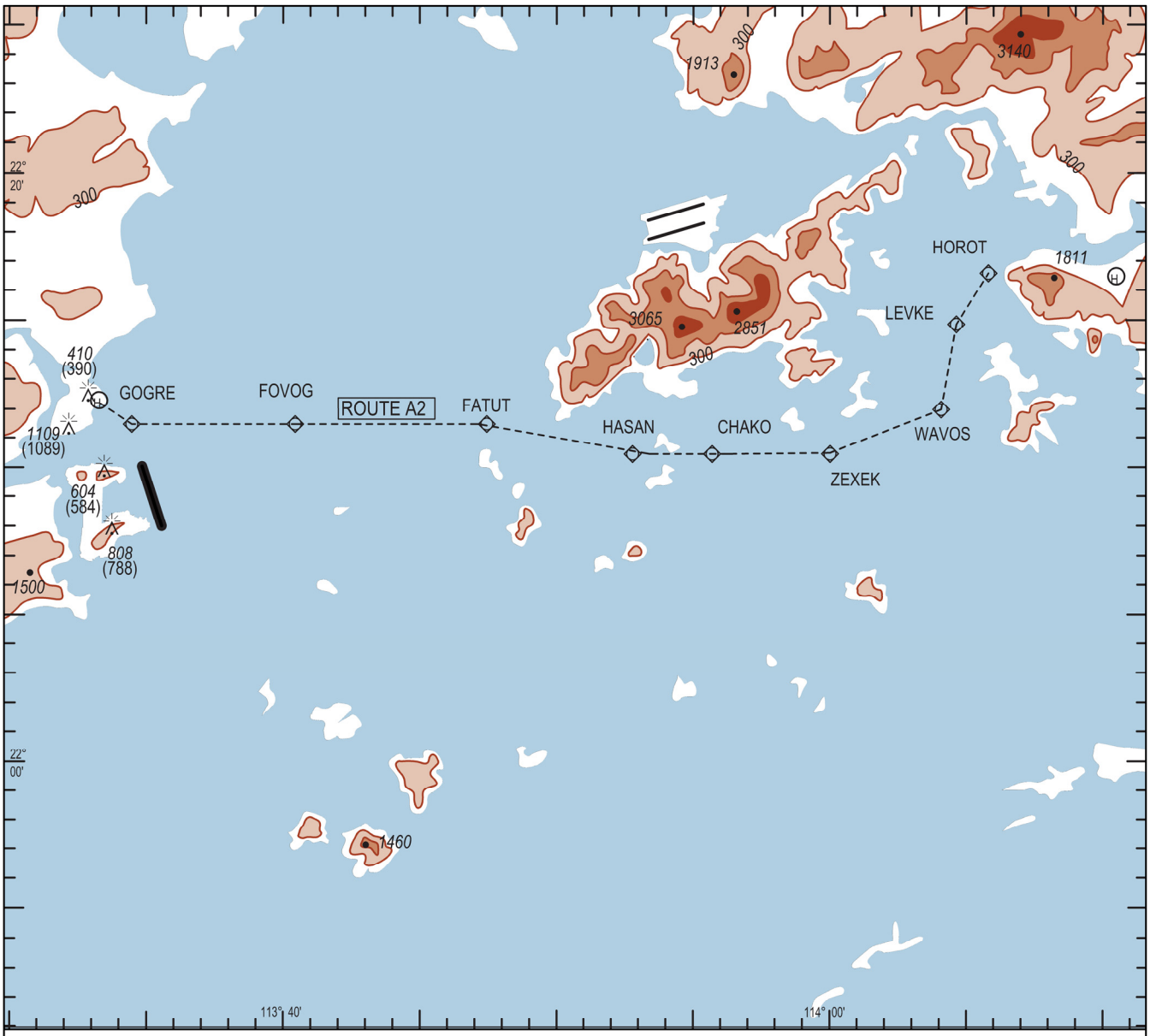
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ROUTE J 22 FEB 2024

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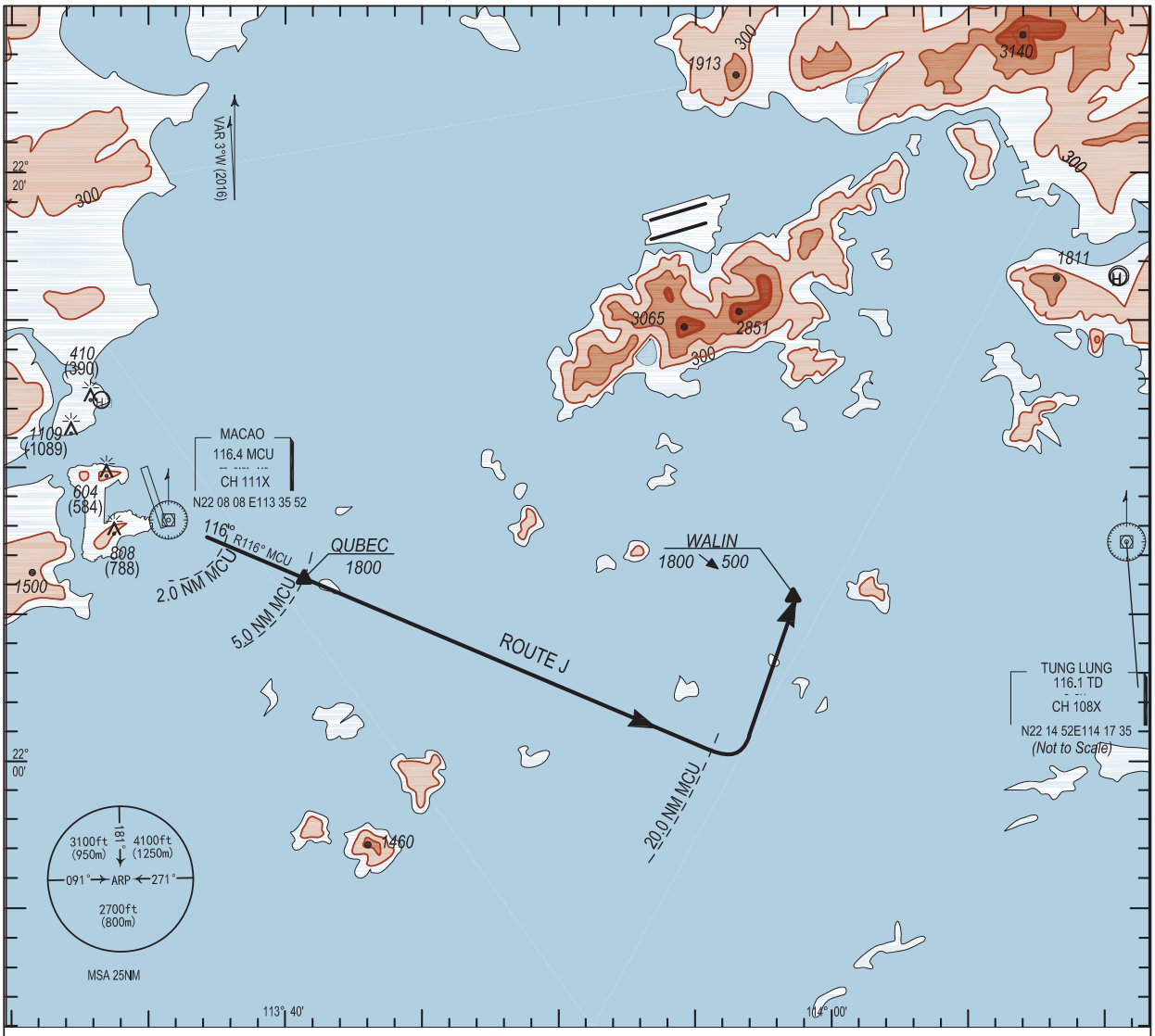
ATIS: MACAU 126.4



Route J:

Depart Macau Heliport VMC, track at 500 ft to MCU. Turn left to intercept R116° MCU outbound, once established and not later than MCU DME 2.0, climb to 1800 ft. At MCU DME 20.0 turn left to WALIN then continue in accordance with the procedure as per HK AIP.

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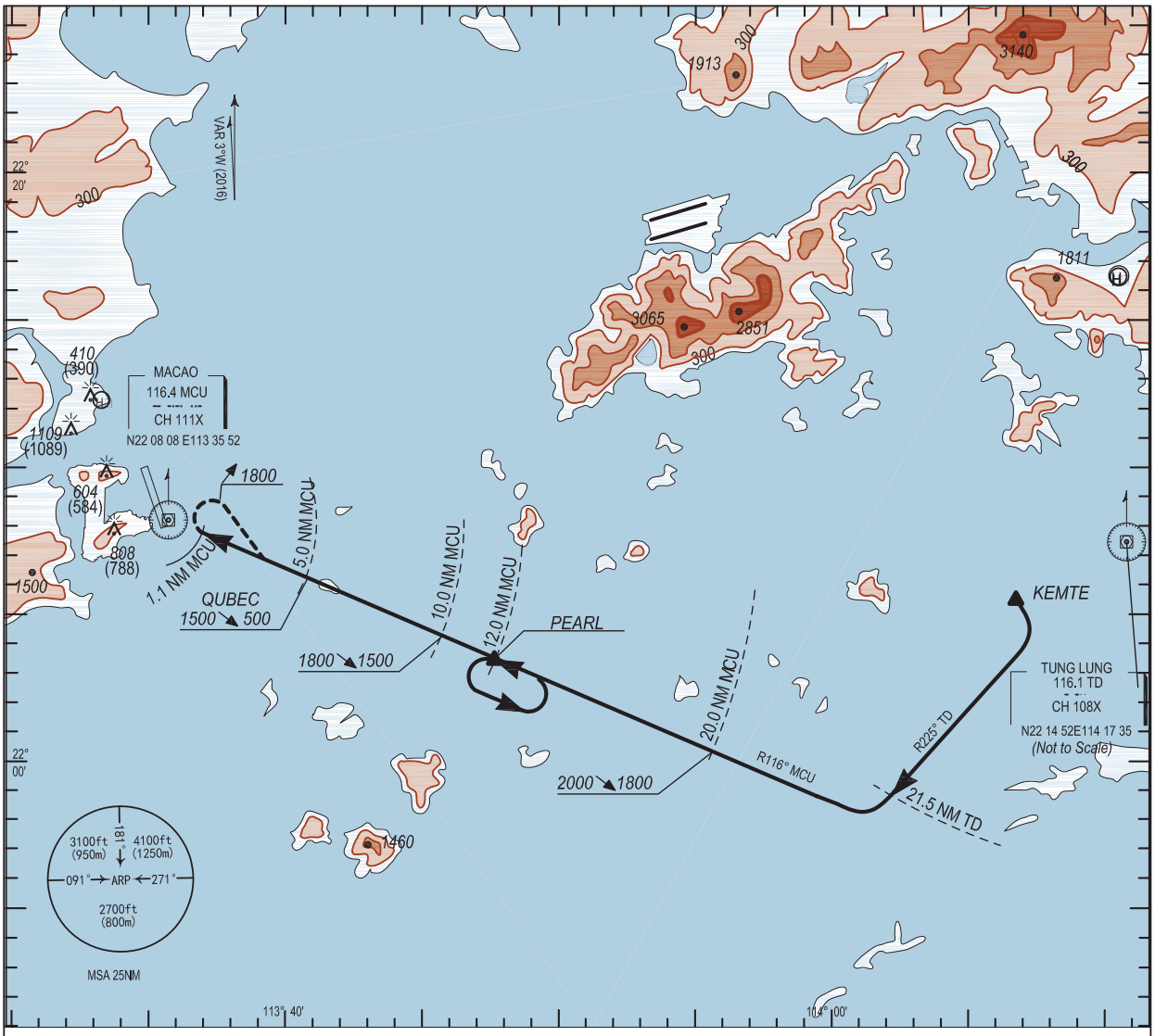
ROUTE L 22 FEB 2024

TWR: Macau Tower 118.0

ATIS: MACAU 126.4



Route L:

Depart Sky Shuttle Heliport in accordance with the procedure as per HK AIP to connect KEMTE, at KEMTE turn right to intercept TD R225° outbound and countinue climb to 2000 ft. At TD DME 21.5, turn right to intercept MCU R116° inbound. At MCU DME 20.0 descend to 1800 ft. At MCU DME 10.0 continue descent to 1500 ft. At MCU DME 5.0 descend to 500 ft and continue visual to Macau Heliport. Exceute missed approach if not visual at MCU DME 1.1.

Missed Approach:

At MCU DME 1.1, turn right heading 146° to intercept MCU R116°, continue climbing to 1800 ft. Continue outbound on MCU R116° to MCU DME 12.0 enter holding pattern and follow ATC instructions.

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ENR 3.5 OTHER ROUTES

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ENR 3.6 EN-ROUTE HOLDING

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ENR 4 RADIO NAVIGATION AIDS / SYSTEMS

ENR 4.1 RADIO NAVIGATION AIDS — EN-ROUTE

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ENR 4.2 SPECIAL NAVIGATION SYSTEMS

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ENR 4.3 NAME-CODE DESIGNATORS FOR SIGNIFICANT POINTS

NIL.

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ENR 4.4 AERONAUTICAL GROUND LIGHTS

Name/Location	Type	Characteristic/ Code	Hours	Candelas	Coordinates	Visibility Sector Clockwise
1	2	3	4	5	6	7
1.Antenna	HBN	fixed red light	H24	-	22°11'53"N 113°33'06"E	Omnidirectional
2.MACAU bridge	HBN	"	H24	40	22°11'23"N 113°33'48"E	"
3.MACAU bridge	HBN	"	H24	40	22°10'51"N 113°33'48"E	"
4.BANK OF CHINA	HBN	"	H24	40	22°11'24"N 113°22'34"E	"
5.Chimney	HBN	"	H24	40	22°09'40"N 113°34'19"E	281° to 101°
6.Antenna	HBN	"	H24	40	22°09'26"N 113°33'56"E	Omnidirectional
7.LLZ 16 antenna	HBN	"	H24	40	22°09'41"N 113°32'52"E	331° to 201°
8.Chimneys	HBN	"	H24	40	22°08'15"N 113°34'43"E	271° to 121°
9.Antenna	HBN	"	H24	40	22°07'25"N 113°33'51"E	Omnidirectional
10.Antenna	HBN	"	H24	40	22°07'14"N 113°33'45"E	"
11.Antenna	HBN	"	H24	40	22°07'17"N 113°33'45"E	"
12 BCM Building	HBN	"	HN	-	22°11'32"N 113°32'29"E	'
13 Nova Taipa Gardens	HBN	"	HN	-	22°09'28"N 113°33'17"E	'
14 Edif. Jardim beira Mar	HBN	"	HN	-	22°09'28"N 113°32'31"E	"

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ENR. 5 NAVIGATION WARNINGS

ENR 5.1 PROHIBITED, RESTRICTED AND DANGER AREAS

1 Circling forbidden west of RWY centre line.

2 All aircraft not allowed to overshoot ZAO R231° which defines the northern limit for flights. Due to noise abatement for Zhuhai City.

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ENR 5.2 MILITARY EXERCISE AND TRAINING AREAS

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ENR 5.3 OTHER ACTIVITIES OF DANGEROUS NATURE

NIL.

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ENR 5.4 AIR NAVIGATION OBSTACLES EN-ROUTE

NIL.

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ENR 5.5 AERIAL SPORTING AND RECREATIONAL ACTIVITIES

NIL.

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ENR 5.6 BIRD MIGRATION AND AREAS WITH SENSITIVE FAUNA

1 Bird concentration on or in the vicinity of the Macau International Airport

1.1 Black-eared kites will be present throughout the year. The greatest numbers will present during the period October to January. Gulls, particularly the black-headed gull will present from early November to early April. Gulls will usually keep below 200 ft.

1.2 During the spring (April-May) and autumn (August-October) migrations, shorebirds (snipe, plover, sandpiper etc.,) may be present in variable number. MAX concentrations occur during periods of heavy rain, low clouds and strong winds, both by day and during the hours of darkness. These birds usually keep below 100 ft.

1.3 Pilots are advised, where the design limitations of aircraft installations permit, to operate landing lights at all times during take-off, approach-to-land, climb and descent procedures.

1.4 Dispersal activities will be activated whenever necessary.

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ENR 6 EN-ROUTE CHARTS

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