



[ **NAPULEVOLA FLIGHT OPERATIONS DEPARTMENT** ]

## **B777 AIR FREIGHTER ROUTE MANUAL**

***"The south-east passage"***

***[edition 1.1]***

### **1. INTRODUCTION**

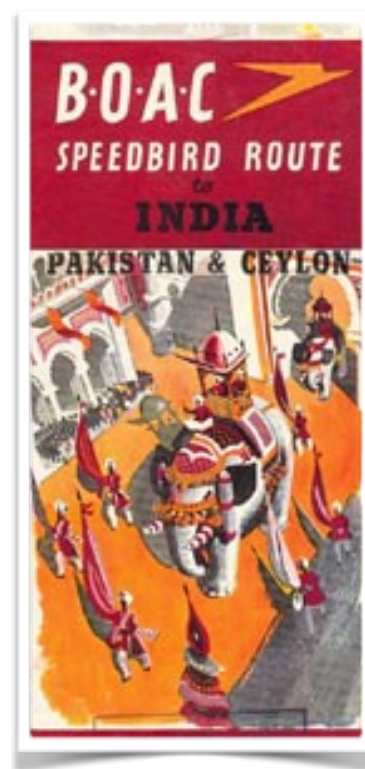
Asia is an important part of the destinations network of any major European airline.

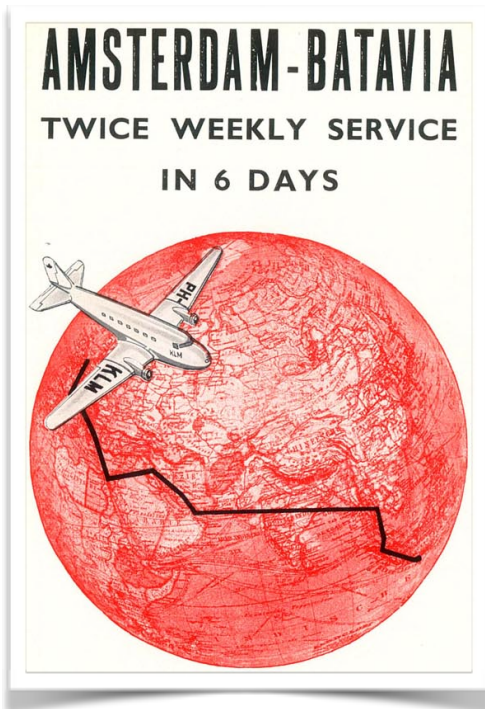
With the delivery of the Boeing 777 Freighter I-NVMP "*Marco Polo*", NapuleVola starts flying to different Asian destinations, writing a new chapter in the history of our Company.

### **2. A BRIEF HISTORY**

The need of connecting Europe and Asia with a fast and reliable air service was evident since the first years of air travel. Moreover in the 20th century some European countries had colonies in the East Indies to look after. Passengers, mail and goods had to travel fast enough to cope with the increasing commercial demands of the modern era.

However after the I and II World Wars the aircrafts range, speed and capabilities were still poor compared to present days. A full trip from Europe to the Far East would have required almost a week, with different technical stops to allow for refueling, maintenance and pilots rest.

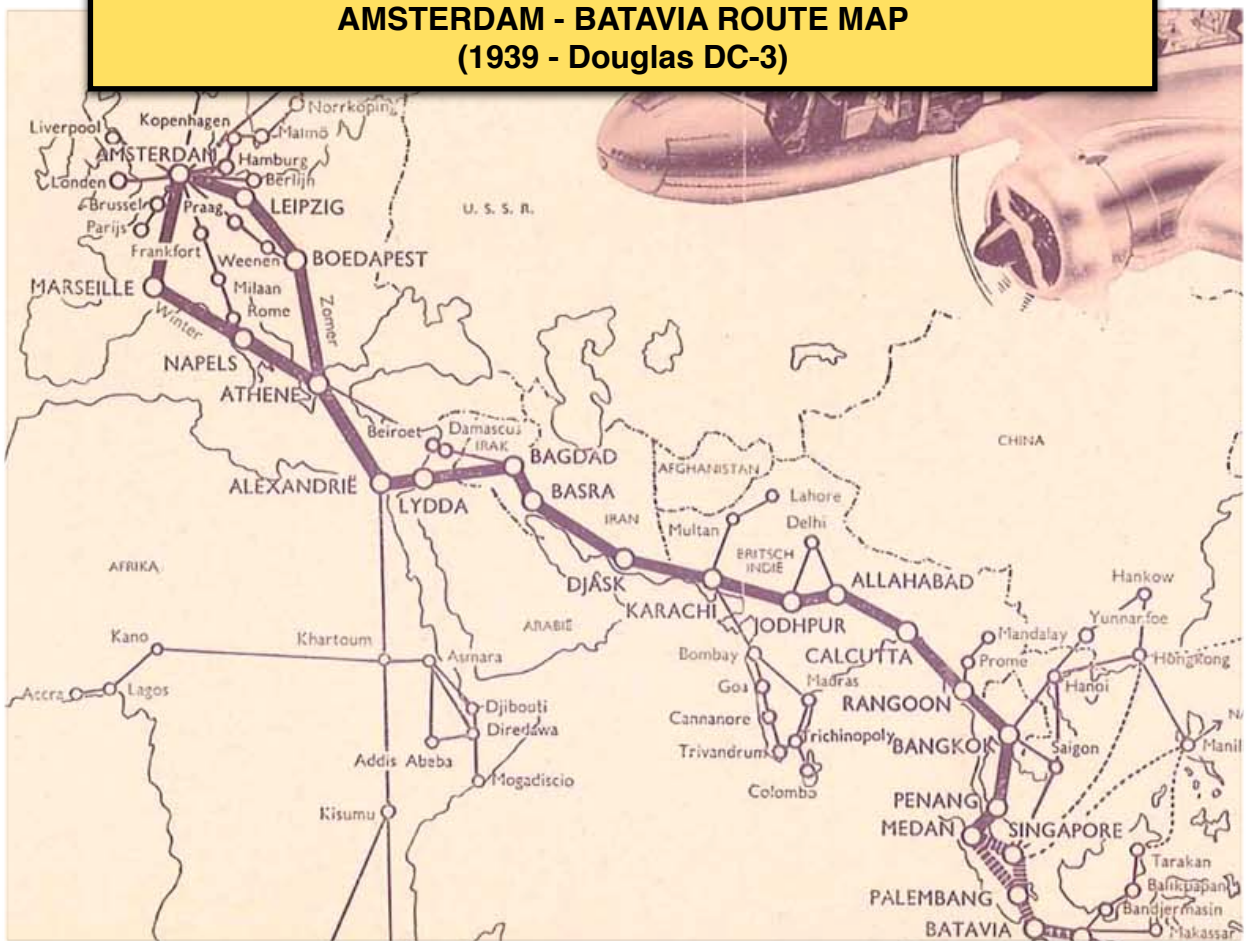




Some of these stopping points were just small towns, isolated aerodromes or short air strips in the middle of a desert. Suddenly, perviously unknown locations became important reference points for air travelers. Luxury hotels and resorts were built to accomodate the passengers in transit from one continent to another.

Years later, with the arrival of the modern Jet aircrafts, this exotic places disappeared from the airlines route maps.

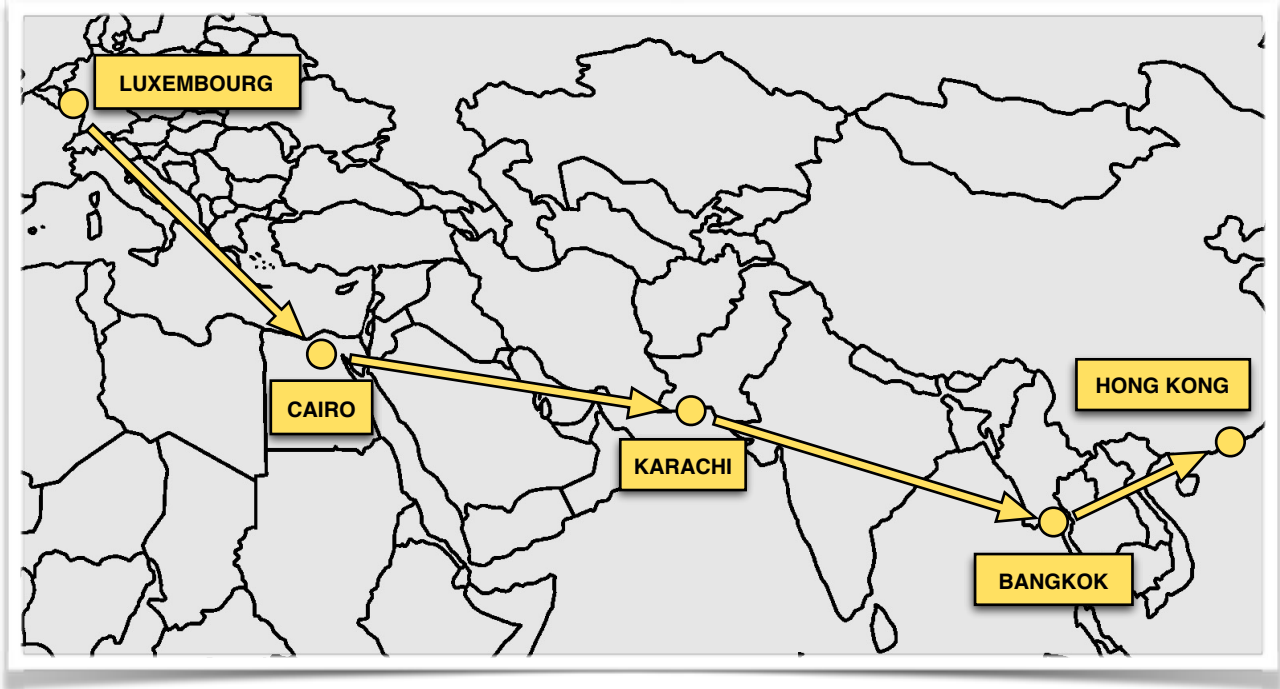
**KLM - ROYAL DUTCH AIRLINES  
AMSTERDAM - BATAVIA ROUTE MAP  
(1939 - Douglas DC-3)**



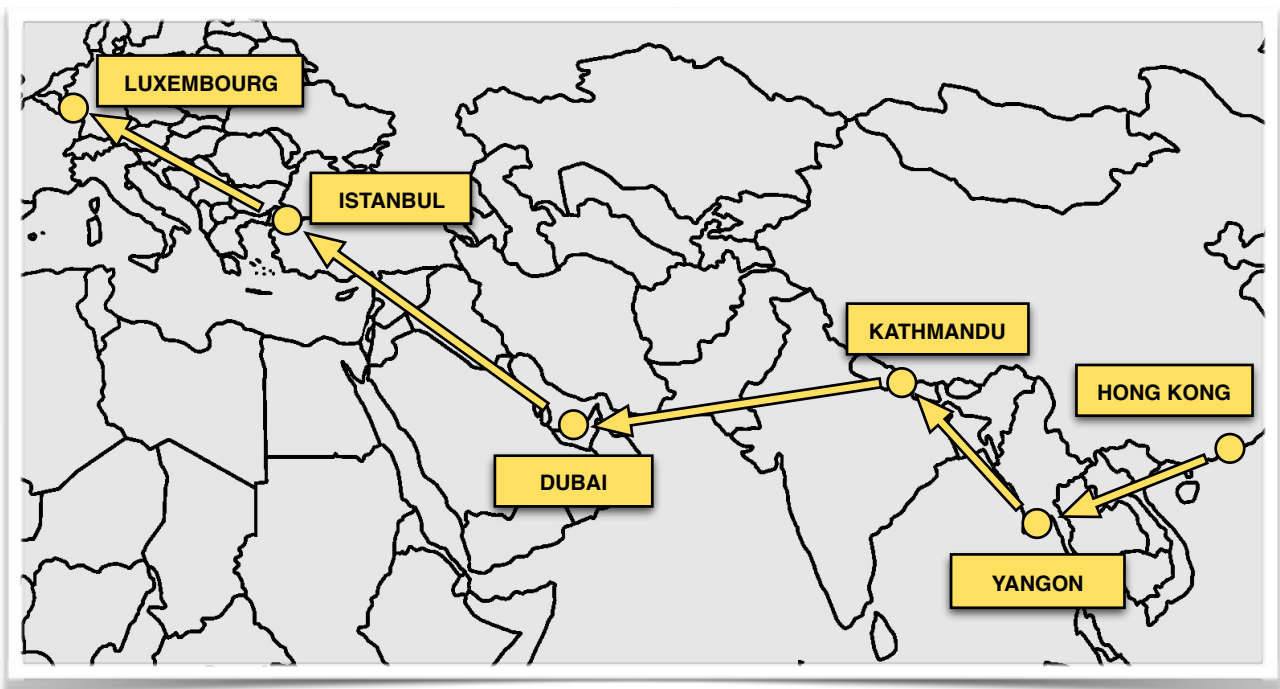
### 3. NAPULEVOLA FAR EAST CARGO NETWORK

The Boeing 777 Freighter is capable of loading more than 100,000 Kg of cargo. Our major destinations in the Middle East and Asia are: **Cairo, Karachi, Bangkok, Hong Kong, Yangon, Kathmandu, Dubai** and **Istanbul**.

Eastbound route:



Westbound route:



### 3. LUXEMBOURG AIRPORT DATA

#### AERODROME DATA

LUXEMBOURG (ELLX/LUX)	
RUNWAYS:	06/24
LANDING DISTANCE:	4000 M
RUNWAY WIDTH:	60 M
APPROACH TYPE:	ILS/ILS
NOISE ABATEMENT:	Strictly follow SID. Climb with maximum gradient until 4000 FT.

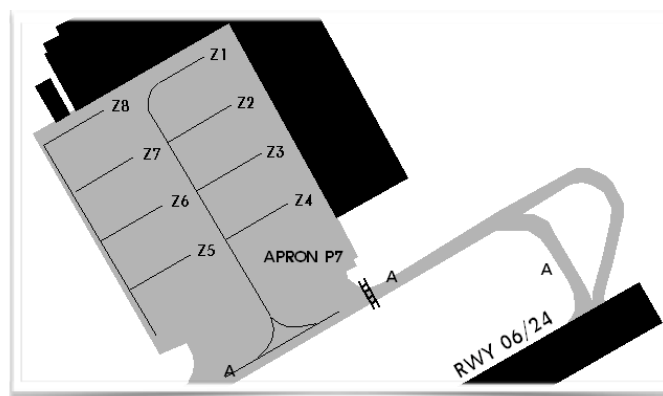
#### WARNING, CAUTIONS AND NOTES

- Maximum landing category CAT IIIB (NO DH / RVR 75M)
- Circle to land not authorized.

#### WEATHER

- WINTER: Low ceiling/visibility due fog. Low clouds and snowfalls.
- SUMMER: Possible thunderstorms.

#### GROUND MANEUVERING



- Cargo operations are conducted from Apron P7.
- Initial portion of runway 06 has a 1.6% upslope.
- Exercise caution when taxiing on TWY A between TWY C and Apron P7 due wingtip clearance to the service road.

## DEPARTURE PROCEDURE

- NIL

## ARRIVAL PROCEDURE

- NIL

## ENGINE-OUT SID

- **RWY 06:** [SPECIAL EOSID] At 7 DME LUX 112.25 LEFT to DIK 114.4 (holding over DIK: 123 INBOUD, RIGHT TURNS).
- **RWY 24:** [EOSID] RIGHT to DIK 114.4 (holding over DIK: 123 INBOUD, RIGHT TURNS).

## DESTINATIONS ALTERNATES

When flying to Luxembourg you may use the following destinations alternate:

- **Frankfurt Main (EDDF/FRA)** [Company preferred alternate]
- **Brussels (EBBR/BRU)**
- **Liege (EBLG/LGG)**

## EXPORTED COMMODITIES

NapuleVola will transport the following goods out of Luxembourg: wheat, wine, beer, chemicals and medicines.

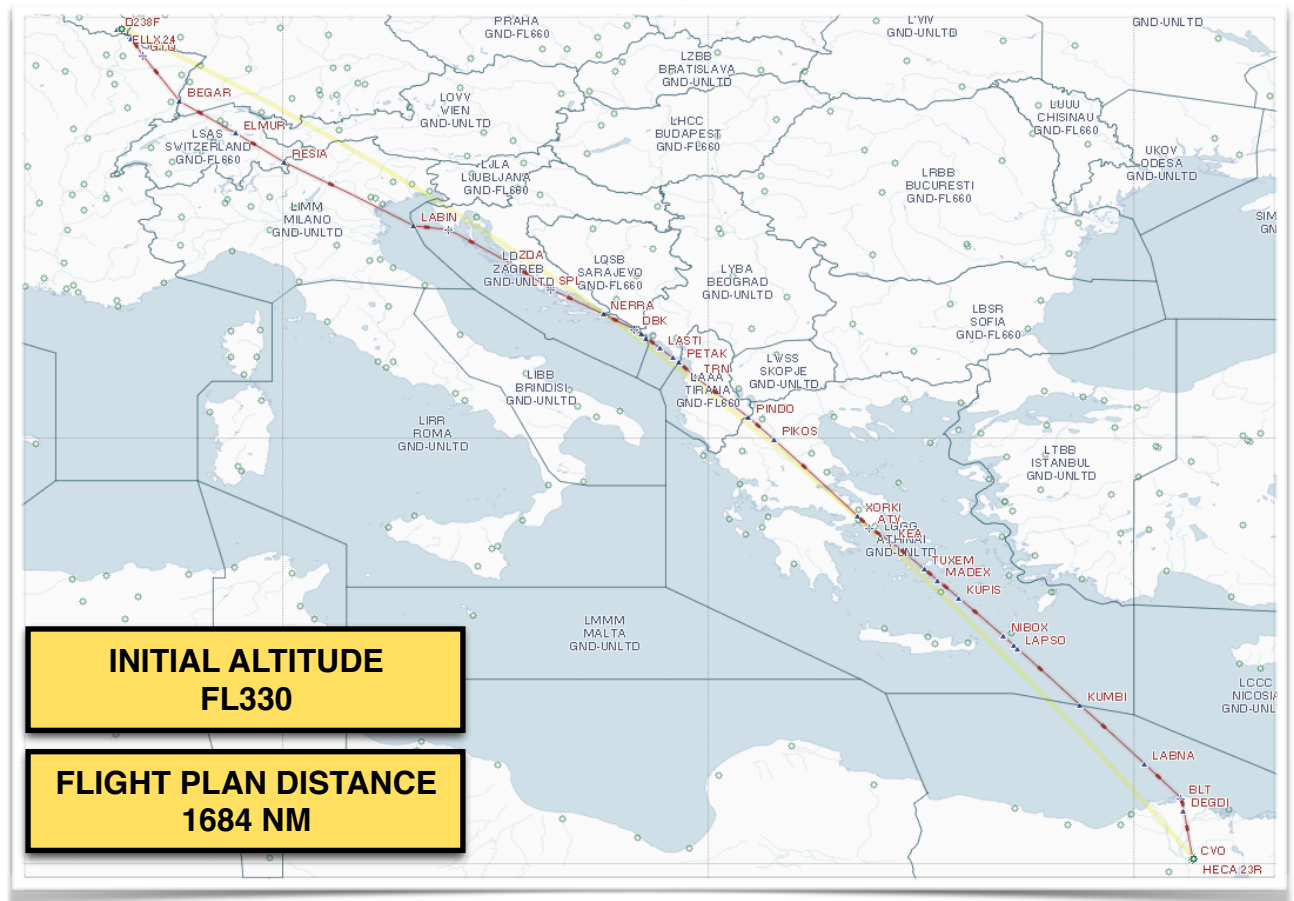


#### 4. FROM LUXEMBOURG TO CAIRO

Note: all the flight plans data are calculated using [flightsimsoft.com](http://flightsimsoft.com) PFPX planning software.

### SUGGESTED ROUTE

GTQ UQ343 BEGAR UQ341 LABIN UL614 PUL UN606 ZDA UL614  
KEA UN132 KUMBI L612 BLT A16 CVO



### TOTAL FUEL REQUIRED (INCLUDING RESERVE) (ISA +10C)

ZFW (KG)	WIND CALM	HEADWIND 45 KT	TAILWIND 45 KT
232,000	38,400 KG	41,800 KG	35,700 KG

**TOTAL FUEL ADJUSTMENTS:**

**ΔZFW:** add/subtract **150 KG** of fuel for each 1000 KG of ZFW increase/decrease.

**ΔFL:** add **800 KG** of fuel for each 2000 FT of initial altitude decrease.

<b>ALTERNATE PLANNING/DIVERSION (WIND CALM - ISA +10C)</b>		
<b>ALTERNATE</b>	<b>MINIMUM DIVERSION FUEL (RESERVE)</b>	<b>ROUTE TO ALTERNATE</b>
HEBA	7200 KG	CVO A1 NOZ
HEGN	8900 KG	CVO L315 HGD
HELX	10,400 KG	CVO A727 LXR L604 ASRAB
<b>FINAL RESERVE FUEL:</b>		<b>3600 KG</b>

**NOTES**

- NIL

## 5. CAIRO AIRPORT DATA

### AERODROME DATA

CAIRO INTL. (HECA/CAI)			
RUNWAYS:	05L/23R	05C/23C	05R/23L
LANDING DISTANCE:	3301	3999	4000
RUNWAY WIDTH:	60	60	60
APPROACH TYPE:	ILS/ILS	ILS/ILS	ILS/ILS
NOISE ABATEMENT:	REDUCTION ALTITUDE: 1800FT ACCELERATION ALTITUDE: 3300FT		

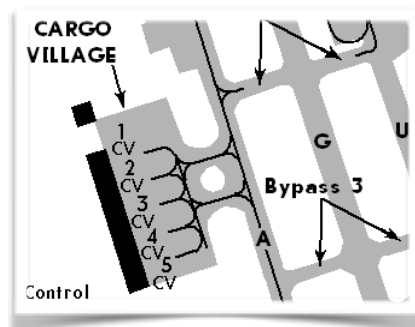
### WARNING, CAUTIONS AND NOTES

- Maximum landing category CAT II (100FT / RVR 350M).
- Autoland not authorized on RWYs 23L, 23R and 05L.
- Visual approach not authorized for RWY 05L.
- RWY 05C/23C and RWY 05R/23L are on elevated ground resulting in taxiways with significant up-slope/down-slope. When landing on these runways use full reverse and plan to vacate using minimum braking.

### WEATHER

- SUMMER: Hot southerly wind known as the "Khamsin" may blow causing rising dust and poor visibility.

### GROUND MANEUVERING



- Cargo operations are conducted from Cargo Village stands 1CV to 5CV



## DEPARTURE PROCEDURE

- No departure SIDs available, expect radar vectors to first enroute waypoint. Do not arm LNAV for takeoff.

## ARRIVAL PROCEDURE

- No arrival STARs available, expect radar vectors.

## ENGINE-OUT SID

- **RWY 05L:** [EOSID] RIGHT to CAI 112.5 (227 INBOUD, LEFT).
- **RWY 05C:** [EOSID] RIGHT to CVO 115.2 (227 INBOUD, LEFT).
- **RWY 05R/23L:** [SPECIAL EOSID] At 25 DME CVO 115.2 enter holding (226 INBOUND, LEFT).
- **RWY 23C:** [SPECIAL EOSID] At 25 DME R-227 CVO 115.2 enter holding (047 INBOUND, RIGHT).
- **RWY 23R:** [SPECIAL EOSID] At 25 DME R-227 CAI 112.5 enter holding (047 INBOUND, LEFT).

## DESTINATIONS ALTERNATES

When flying to Cairo you may use the following destinations alternate:

- **Alexandria (HEBA/HBE)** [Company preferred alternate]
- **Hurghada (HEGN/HRG)**
- **Luxor (HELX/LXR)**

## EXPORTED COMMODITIES

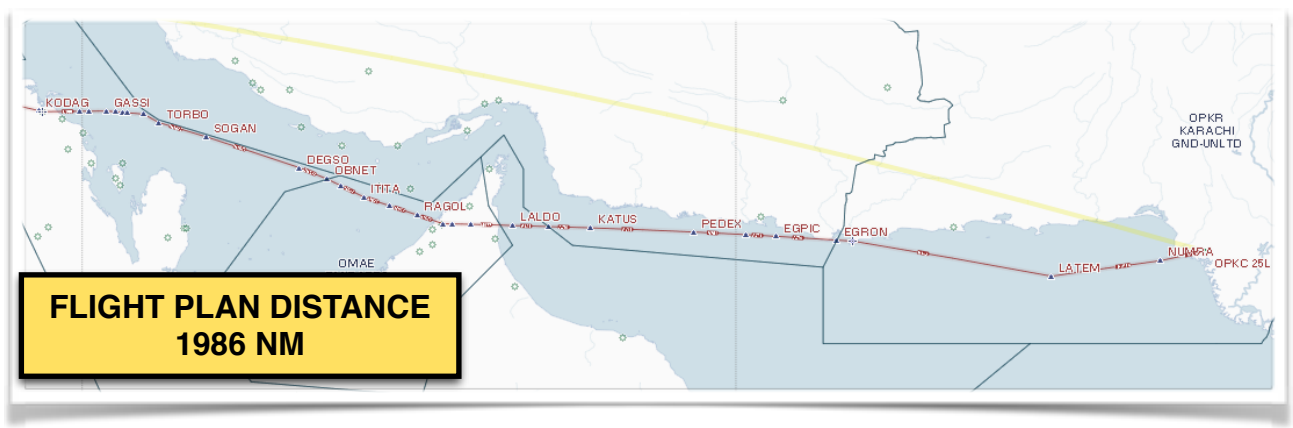
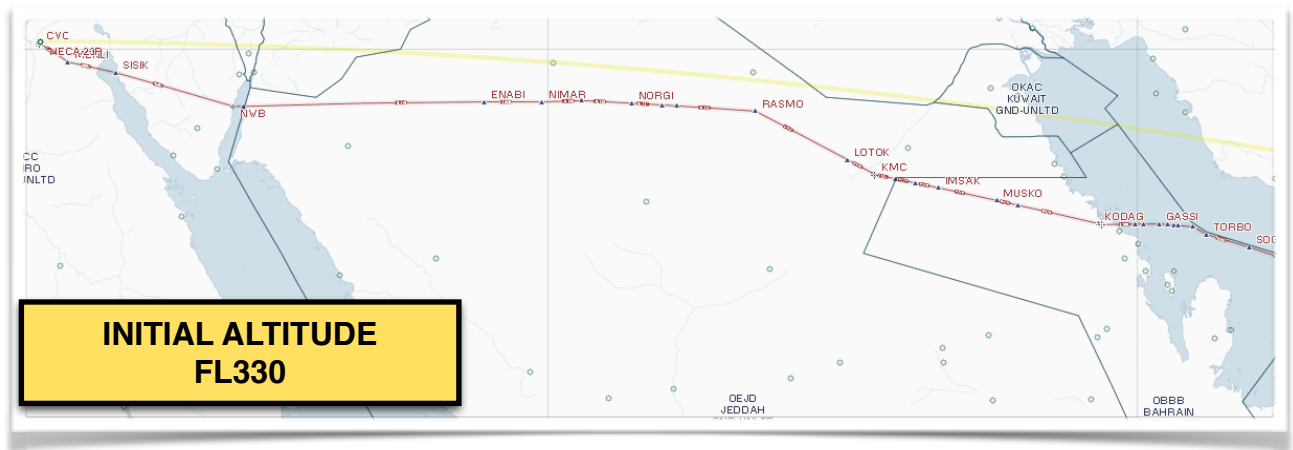
NapuleVola will transport the following goods out of Cairo: fertilizers, ammonia, glazed ceramics, cheese and citrus.



**6. FROM CAIRO TO KARACHI**

**SUGGESTED ROUTE**

CVO L677 MENLI N697 NWB **DCT** KITOT UL550 RASMO P559 JBL L308 DAROR UP559 RAMSI UL443 GASSI UT308 TOSDA UM677 OBNET M677 NADNIM677 LALDO A791 JI R462 LATEM LEMOM



**TOTAL FUEL REQUIRED (INCLUDING RESERVE) (ISA +10C)**

ZFW (KG)	WIND CALM	HEADWIND 45 KT	TAILWIND 45 KT
232,000	42,600	47,400 KG	39,500 KG

TOTAL FUEL ADJUSTMENTS:

**ΔZFW:** add/subtract **170 KG** of fuel for each 1000 KG of ZFW increase/decrease.

**ΔFL:** add **800 KG** of fuel for each 2000 FT of initial altitude decrease.

<b>ALTERNATE PLANNING/DIVERSION (WIND CALM - ISA +10C)</b>		
<b>ALTERNATE</b>	<b>MINIMUM DIVERSION FUEL (RESERVE)</b>	<b>ROUTE TO ALTERNATE</b>
OPNH	6900 KG	BADIL R471 NH
OOMS	14,200 KG	MELOM J215 PUNEL A325 PARET A454 VUSET T500 MCT
OPLA	14,700 KG	BADIL R471 NH J112 RK G214 MOLTA G201 LEMOM
<b>FINAL RESERVE FUEL:</b>		<b>3600 KG</b>

**NOTES**

- Route planned from NWB NDB direct to KITOT intersection in coordination with Cairo ACC.

**6. KARACHI AIRPORT DATA****AERODROME DATA**

<b>KARACHI JINNAH INTL. (OPKC/CAI)</b>		
RUNWAYS:	07R/25L	07L/25R
LANDING DISTANCE:	3400	3200
RUNWAY WIDTH:	45	46
APPROACH TYPE:	RNAV/ILS	CIRCLING/ILS
NOISE ABATEMENT:	Commensurate with safety, use engine thrust setting and flap configuration to generate minimum noise up to 1600 FT.	

**WARNING, CAUTIONS AND NOTES**

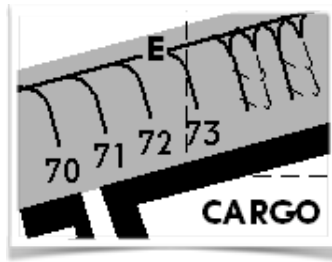
- Maximum landing category CAT I.
- Autoland not authorized on all runways.
- Do not mistake Karachi Jinnah airport with Karachi Sharah-e-Faisal military airbase, located 3 NM south east of the field.
- Do not overfly Karachi city during day below 2000 FT AGL and during night below 3000 FT AGL.

**WEATHER**

- SUMMER: Hot and humid weather.
- WINTER: The aerodrome area is subject to rapid fog formation.
- **WET MONSOON SEASON:** July and August with an average rainfall of 66 mm per month. Expect low visibility during heavy precipitations. Also refer to <http://severe.worldweather.wmo.int>

**GROUND MANEUVERING**

- Right turn from taxiway A into taxiway E and left turn from TWY E into TWY A not authorized.
- Cargo operations are conducted from parking stands number 70 through 73.



### DEPARTURE PROCEDURE

- Caution: low transition altitude.

### ARRIVAL PROCEDURE

- Runway 25L preferred for arrival.

### ENGINE-OUT SID

- **RWY 07L/R:** [SPECIAL EOSID] At 3 DME KC 112.1 right on track 180. At 10 DME KC 112.1 RIGHT to BEGIM (040 INBOUD, RIGHT).
- **RWY 25L/R:** [SPECIAL EOSID] At 4 DME KC 112.1 LEFT to INTERCEPT and PROCEED on R-220 KC 112.1. At BEGIM enter holding (040 INBOUD, RIGHT).

### DESTINATIONS ALTERNATES

When flying to Karachi you may use the following destinations alternate:

- **Nawabshah (OPNH/WNS)** [Company preferred alternate]
- **Muscat (OOMS/MCT)**
- **Lahore (OPLA/LHE)**

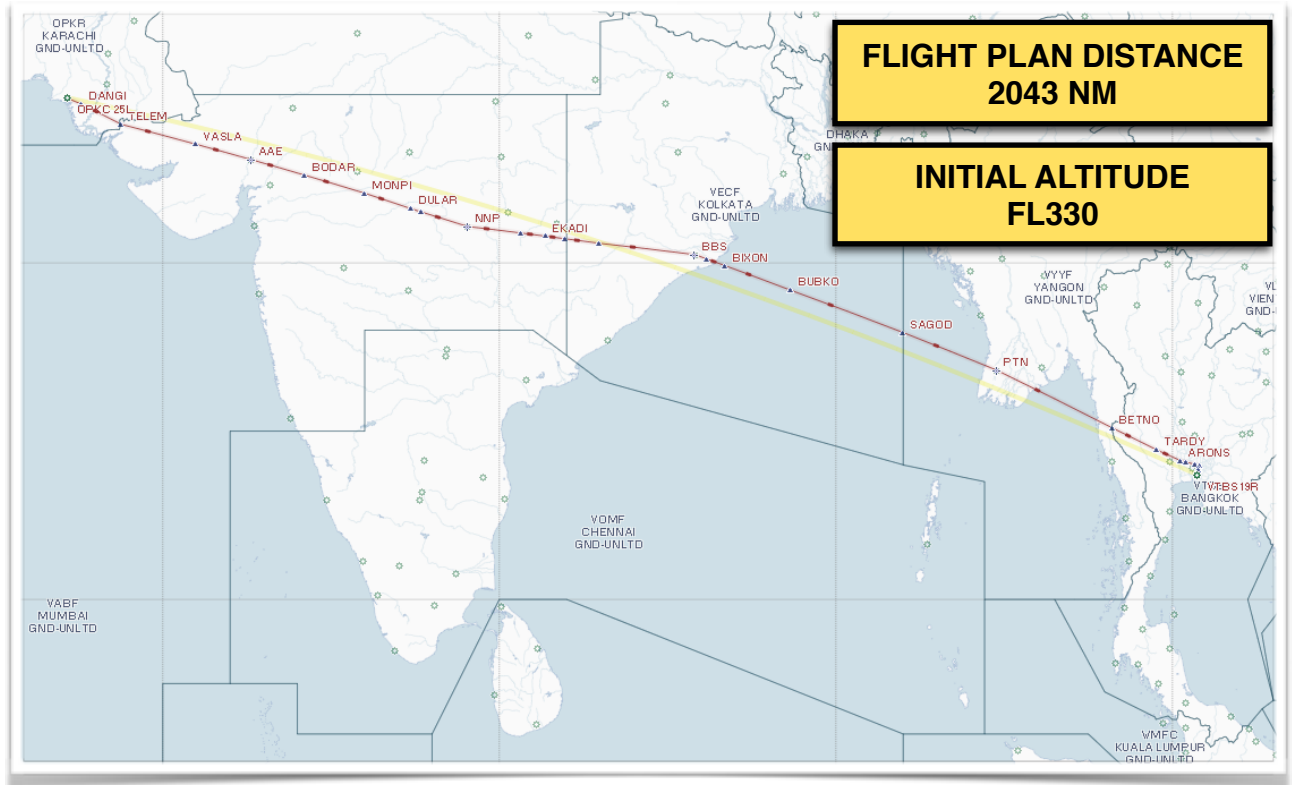
### EXPORTED COMMODITIES

NapuleVola will transport the following goods out of Karachi: leather apparel, medical instruments, tropical fruits and baby diapers.



**7. FROM KARACHI TO BANGKOK**

SUGGESTED ROUTE			
DANGI	G472	TELEM	G210
VASLA	G472	AAE	W40
BODAR	G472	SAGOD	N895
BETNO			



TOTAL FUEL REQUIRED (INCLUDING RESERVE) (ISA +10C)			
ZFW (KG)	WIND CALM	HEADWIND 45 KT	TAILWIND 45 KT
232,000	45,500 KG	49,600 KG	42,000 KG
TOTAL FUEL ADJUSTMENTS:			
<p><b>ΔZFW:</b> add/subtract <b>140 KG</b> of fuel for each 1000 KG of ZFW increase/decrease.</p> <p><b>ΔFL:</b> add <b>800 KG</b> of fuel for each 2000 FT of initial altitude decrease.</p>			

<b>ALTERNATE PLANNING/DIVERSION (WIND CALM - ISA +10C)</b>		
<b>ALTERNATE</b>	<b>MINIMUM DIVERSION FUEL (RESERVE)</b>	<b>ROUTE TO ALTERNATE</b>
VTBU	6300 KG	BUT
VTBD	6900 KG	HOTEL
WMKK	16,500 KG	REGOS W19 DIRAX A464 DAKUS
<b>FINAL RESERVE FUEL:</b>		<b>3600 KG</b>

**NOTES**

- NIL

**8. BANGKOK AIRPORT DATA****AERODROME DATA**

<b>BANGKOK SUVARNABHUMI INTL. (VTBS/BKK)</b>		
RUNWAYS:	01L/19R	01R/19L
LANDING DISTANCE:	3700	4000
RUNWAY WIDTH:	60	60
APPROACH TYPE:	ILS/ILS	ILS/ILS
NOISE ABATEMENT:	REDUCTION ALTITUDE:	1500 FT
	ACCELERATION ALTITUDE:	3000 FT

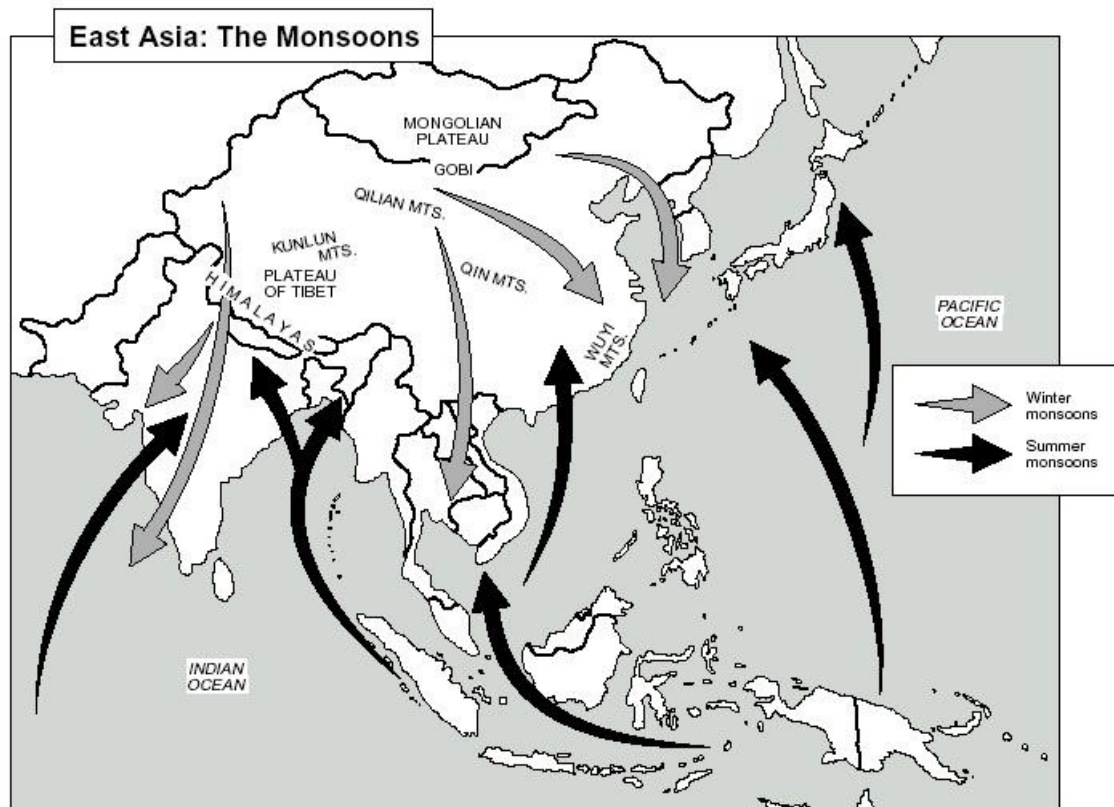
**WARNING, CAUTIONS AND NOTES**

- Maximum landing category CAT II (100FT / RVR 350M).
- During heavy precipitation runway flooding may occur, especially on runway 01R/19L.

**WEATHER**

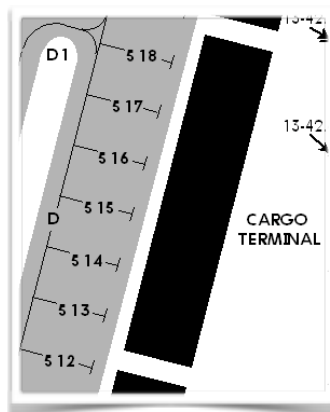
- Low level turbulence may be anticipated most of the time, especially when the wind is from the West.
- SUMMER: Hot and humid weather, with an average high temperature of 34C.
- WINTER: Morning fog is common between January and March.
- **WET MONSOON SEASON:** The southerly monsoon usually hit Bangkok from May to October, however the rainy season may start as early as March. The wettest months are May, September and October with an average rainfall of 300 mm per month. Expect daily rainfalls and low visibility during heavy precipitations. Also refer to: <http://severe.worldweather.wmo.int>





### GROUND MANEUVERING

- APU must be shutdown during turnarounds, use external ground power unit and air conditioning if available.
- Cargo operations are conducted from parking stands 513 through 518.



### DEPARTURE PROCEDURE

- NIL

### ARRIVAL PROCEDURE

- Prefer FLAPS 25 landings if not restricted by performance due noise abatement regulations.

## ENGINE-OUT SID

- **RWY 01L:** [EOSID] LEFT to LEVIN (015 INBOUD, RIGHT).
- **RWY 01R:** [EOSID] RIGHT to ROMAN (003 INBOUD, RIGHT).
- **RWY 19L:** [EOSID] LEFT to LEMON (202 INBOUD, LEFT).
- **RWY 19R:** [EOSID] RIGHT to ROBBY (195 INBOUD, LEFT).

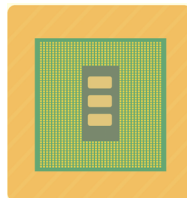
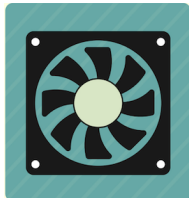
## DESTINATIONS ALTERNATES

When flying to Bangkok you may use the following destinations alternate:

- **Rayong (VTBU/UTP)** [Company preferred alternate]
- **Bangkok Don Mueang (VTBD/DMK)**
- **Kuala Lumpur (WMKK/KUL)**

## EXPORTED COMMODITIES

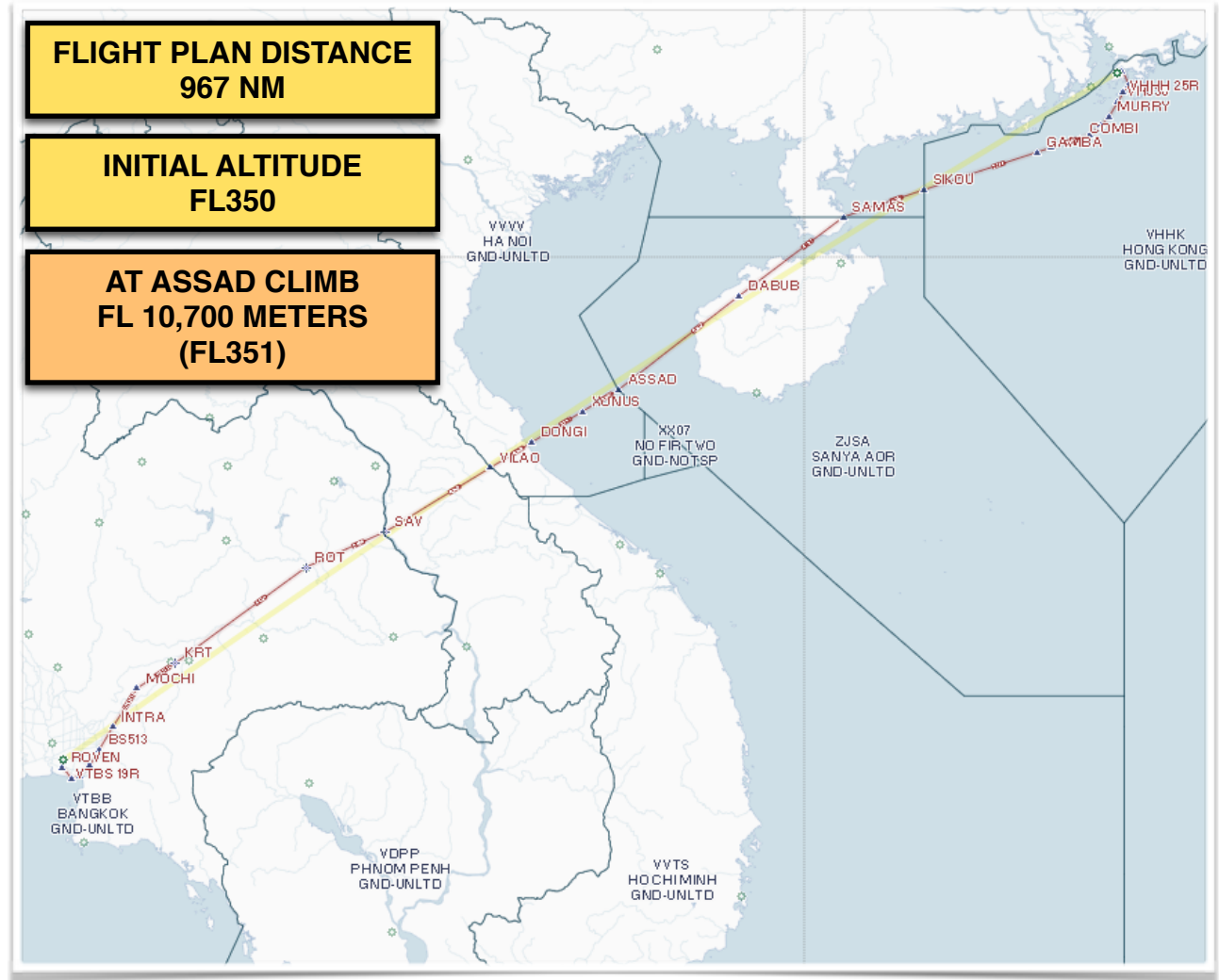
NapuleVola will transport the following goods out of Bangkok: hard drives, CPU fans, integrated circuits, USB memory sticks and fish.



**9. FROM BANGKOK TO HONG KONG**

**SUGGESTED ROUTE**

KRT B460 SAV A202 VILAO A202 ASSAD A202 SIKOU V571 GAMBA  
V561 CANTO



**TOTAL FUEL REQUIRED (INCLUDING RESERVE) (ISA +10C)**

ZFW (KG)	WIND CALM	HEADWIND 45 KT	TAILWIND 45 KT
232,000	27,800 KG	29,900 KG	26,100 KG

TOTAL FUEL ADJUSTMENTS:

**ΔZFW:** add/subtract **60 KG** of fuel for each 1000 KG of ZFW increase/decrease.

**ΔFL:** add **150 KG** of fuel for each 2000 FT of initial altitude decrease.

<b>ALTERNATE PLANNING/DIVERSION (WIND CALM - ISA +10C)</b>		
<b>ALTERNATE</b>	<b>MINIMUM DIVERSION FUEL (RESERVE)</b>	<b>ROUTE TO ALTERNATE</b>
ZGGG	8400 KG	BEKOL A461 IDUMA
VMMC	5700 KG	SMT DCT ZUH
RCTP	15,100 KG	OCEAN V3 RASSE V2 ELATO A1 MKG
<b>FINAL RESERVE FUEL:</b>		<b>3700 KG</b>

**NOTES**

- SANYA FIR sector AR01 and GUANGZHOU FIR use METRIC flight levels. At ASSAD climb/descend to your appropriate METRIC flight level as instructed by ATC or according to this table:

<b>METRIC FLIGHT LEVEL CONVERSION TABLE</b>	
<b>TRACK FROM 180 TO 359</b>	<b>TRACK FROM 360 TO 179</b>
• 600 m (2,000 ft)	• 900 m (3,000 ft)
• 1,200 m (3,900 ft)	• 1,500 m (4,900 ft)
• 1,800 m (5,900 ft)	• 2,100 m (6,900 ft)
• 2,400 m (7,900 ft)	• 2,700 m (8,900 ft)
• 3,000 m (9,800 ft)	• 3,300 m (10,800 ft)
• 3,600 m (11,800 ft)	• 3,900 m (12,800 ft)
• 4,200 m (13,800 ft)	• 4,500 m (14,800 ft)
• 4,800 m (15,700 ft)	• 5,100 m (16,700 ft)
• 5,400 m (17,700 ft)	• 5,700 m (18,700 ft)
• 6,000 m (19,700 ft)	• 6,300 m (20,700 ft)
• 6,600 m (21,700 ft)	• 6,900 m (22,600 ft)
• 7,200 m (23,600 ft)	• 7,500 m (24,600 ft)
• 7,800 m (25,600 ft)	• 8,100 m (26,600 ft)
• 8,400 m (27,600 ft)	• 8,900 m (29,100 ft)
• 9,200 m (30,100 ft)	• 9,500 m (31,100 ft)
• 9,800 m (32,100 ft)	• 10,100 m (33,100 ft)
• 10,400 m (34,100 ft)	• 10,700 m (35,100 ft)
• 11,000 m (36,100 ft)	• 11,300 m (37,100 ft)
• 11,600 m (38,100 ft)	• 11,900 m (39,100 ft)
• 12,200 m (40,100 ft)	• 12,500 m (41,100 ft)
• 13,100 m (43,000 ft)	• 13,700 m (44,900 ft)

- When flying on IVAO refer to: <https://ivao.aero/flightops/divprocedures.php?id=CN>
- When flying on VATSIM refer to: <http://www.vatprc.net/index.php/en/en-chinese-rvsm>
- Also refer to: [http://www.hkatc.gov.hk/HK\\_AIP/aic/AIC06-03.pdf](http://www.hkatc.gov.hk/HK_AIP/aic/AIC06-03.pdf)
- Hong Kong approach will issue altitudes in **FEET** during the approach.

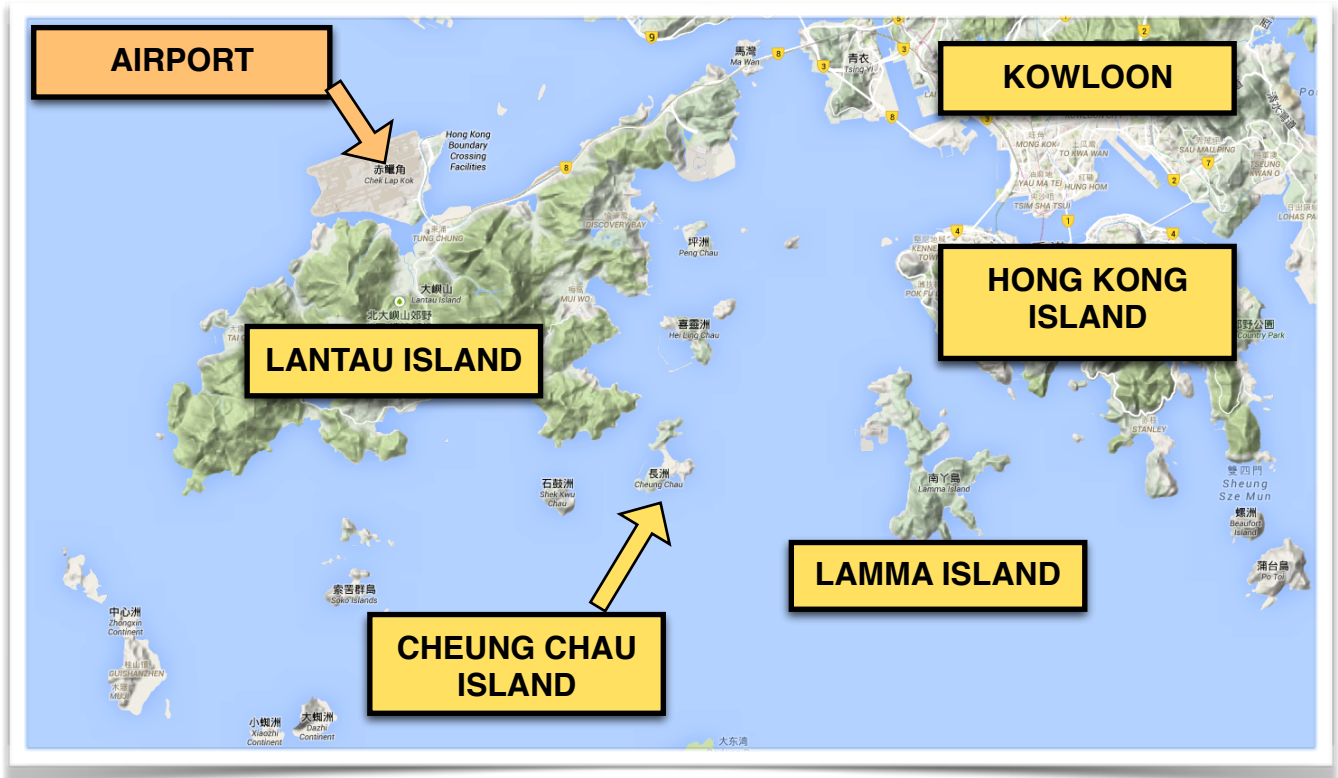
## 10. HONG KONG AIRPORT DATA

### AERODROME DATA

HONG KONG INTL. (VHHH/HKG)		
RUNWAYS:	07L/25R	07R/25L
LANDING DISTANCE:	3626	3640
RUNWAY WIDTH:	60	60
APPROACH TYPE:	ILS/ILS	ILS/ILS
NOISE ABATEMENT:	REDUCTION ALTITUDE:	800 FT
	ACCELERATION ALTITUDE:	3000 FT

### WARNING, CAUTIONS AND NOTES

- Maximum landing category CAT IIIA (50FT / RVR 175M).
- **Wind-shear conditions** should be expected from approach to touchdown, refer to the WEATHER section.

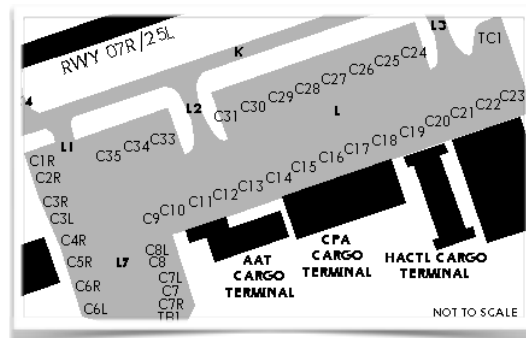


**WEATHER**

- **SUMMER:** Hot and humid weather, with an average high temperature of 30C.
- **WINTER:** Cool and dry, average lowest temperature of 14C.
- **RAINY SEASON:** May to September with an average rainfall of 370 mm per month. Hong Kong is affected by monsoons and maritime airstreams. Also refer to: <http://severe.worldweather.wmo.int>
- **TYPHOONS:** Typhoons season is from September to October. Tropical cyclone and local typhoons bulletins can be found at: <http://www.hko.gov.hk/textonly/v2/index.htm>
- **LOCAL WINDS:** Low level wind-shear all year round. Due the proximity of Lantau Island and surrounding hilly terrain significant low-level wind-shear and moderate to severe turbulence may be expected.
  - NORTHWESTERLY/NORTELY WINDS: MOSTLY AFFECT RWY 07R
  - NORTHWESTERLY/NORTLEY WINDS: MOSTLY AFFECT RWY 25L
  - SOUTHWESTERLY/SOUTERLY WINDS: MOSTLY AFFECT RWY 25R

**GROUND MANEUVERING**

- APU must be shutdown during turnarounds, use external ground power unit and air conditioning if available.
- Taxiways Z1, Z2 and Z3 not authorized.
- Cargo operations are conducted from parking stands C14 through C18.

**DEPARTURE PROCEDURE**

- Aircraft outbound Hong Kong are required to reach the cruising level at or before Hong Kong FIR boundaries.

## ARRIVAL PROCEDURE

- NIL

## ENGINE-OUT SID

- **RWY 07L:** [SPECIAL EOSID] At SMT 114.8 RIGHT TO INTERCEPT and PROCEED on R-087 SMT. At 3.2 DME SMT RIGHT to RAMEN. At RAMEN RIGHT to SOKOE (250 INBOUD, LEFT).
- **RWY 07R:** [SPECIAL EOSID] At 2 DME before SMT 114.8 LEFT on TRACK 060. After crossing R-180 SMT 114.8 RIGHT TO PROCEED on TRACK 073. At 5 DME SMT RIGHT to RAMEN. At RAMEN RIGHT to SOKOE (250 INBOUD, LEFT).
- **RWY 25L:** [SPECIAL EOSID] At PRAWN LEFT to RUMSY (182 INBOUD, RIGHT).
- **RWY 25R:** [SPECIAL EOSID] At 7.2 DME ITFR 110.9 LEFT to RUMSY (182 INBOUD, RIGHT).

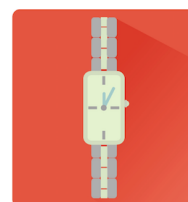
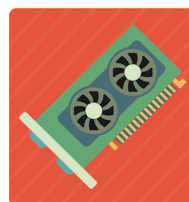
## DESTINATIONS ALTERNATES

When flying to Hong Kong you may use the following destinations alternate:

- **Guangzhou (ZGGG/CAN)** [Used for fuel calculation]
- **Macau (VMMC/MFM)** [Company preferred alternate]
- **Taipei (RCTP/TPE)**

## EXPORTED COMMODITIES

NapuleVola will transport the following goods out of Hong Kong: computers, smartphones, broadcasting equipment, high-end PC video cards and luxury watches.

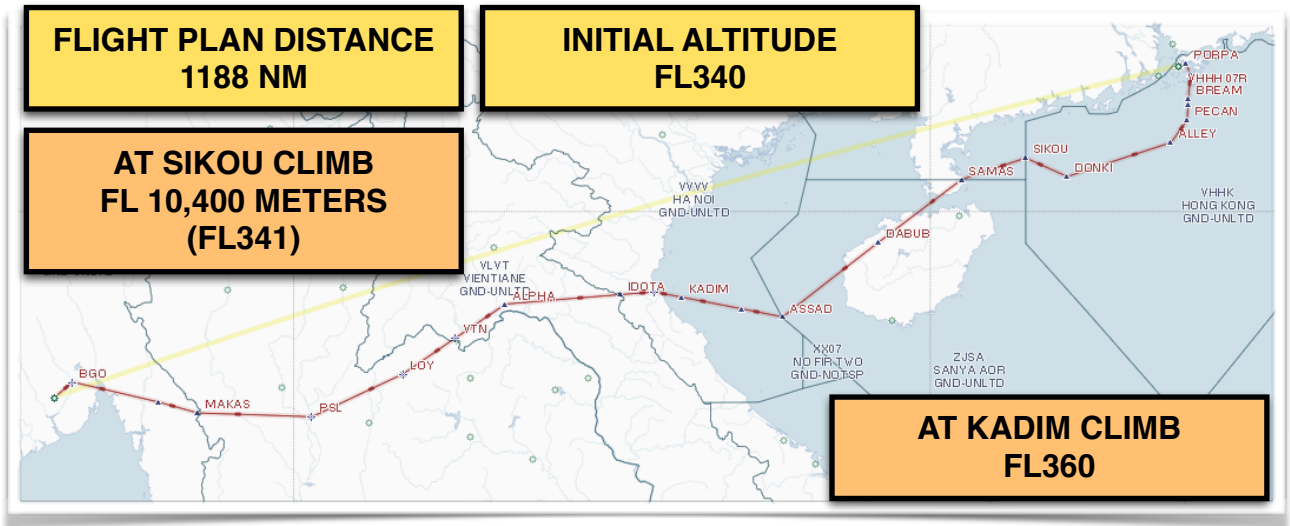




**11. FROM HONG KONG TO YANGON**

**SUGGESTED ROUTE**

PECAN V10 SIKOU A202 ASSAD A206 VIN R335 IDOTA R335  
ALPHA W76 VTN B218 LOY W27 PSL G473 BGO DCT HGU



**TOTAL FUEL REQUIRED (INCLUDING RESERVE) (ISA +10C)**

ZFW (KG)	WIND CALM	HEADWIND 45 KT	TAILWIND 45 KT
232,000	32,900 KG	35,400 KG	30,800 KG

TOTAL FUEL ADJUSTMENTS:

**ΔZFW:** add/subtract **70 KG** of fuel for each 1000 KG of ZFW increase/decrease.

**ΔFL:** add **300 KG** of fuel for each 2000 FT of initial altitude decrease.

**ALTERNATE PLANNING/DIVERSION (WIND CALM - ISA +10C)**

ALTERNATE	MINIMUM DIVERSION FUEL (RESERVE)	ROUTE TO ALTERNATE
VTBS	10600 KG	HGU DCT BGO A581 TATEL
VTCC	8800 KG	HGU DCT BGO L507 LIMLA
VECC	13,800 KG	HGU DCT BGO G463 CTG B465 SUMAG
FINAL RESERVE FUEL:		3600 KG

**NOTES**

- SANYA FIR sector AR01 and GUANGZHOU FIR use METRIC flight levels. At SIKOU climb/descend to your appropriate METRIC flight level as instructed by ATC or according to this table:

<b>METRIC FLIGHT LEVEL CONVERSION TABLE</b>	
<b>TRACK FROM 180 TO 359</b>	<b>TRACK FROM 360 TO 179</b>
• 600 m (2,000 ft)	• 900 m (3,000 ft)
• 1,200 m (3,900 ft)	• 1,500 m (4,900 ft)
• 1,800 m (5,900 ft)	• 2,100 m (6,900 ft)
• 2,400 m (7,900 ft)	• 2,700 m (8,900 ft)
• 3,000 m (9,800 ft)	• 3,300 m (10,800 ft)
• 3,600 m (11,800 ft)	• 3,900 m (12,800 ft)
• 4,200 m (13,800 ft)	• 4,500 m (14,800 ft)
• 4,800 m (15,700 ft)	• 5,100 m (16,700 ft)
• 5,400 m (17,700 ft)	• 5,700 m (18,700 ft)
• 6,000 m (19,700 ft)	• 6,300 m (20,700 ft)
• 6,600 m (21,700 ft)	• 6,900 m (22,600 ft)
• 7,200 m (23,600 ft)	• 7,500 m (24,600 ft)
• 7,800 m (25,600 ft)	• 8,100 m (26,600 ft)
• 8,400 m (27,600 ft)	• 8,900 m (29,100 ft)
• 9,200 m (30,100 ft)	• 9,500 m (31,100 ft)
• 9,800 m (32,100 ft)	• 10,100 m (33,100 ft)
• 10,400 m (34,100 ft)	• 10,700 m (35,100 ft)
• 11,000 m (36,100 ft)	• 11,300 m (37,100 ft)
• 11,600 m (38,100 ft)	• 11,900 m (39,100 ft)
• 12,200 m (40,100 ft)	• 12,500 m (41,100 ft)
• 13,100 m (43,000 ft)	• 13,700 m (44,900 ft)

Return to FEET flight levels at KADIM. Coordinate with ATC if available.

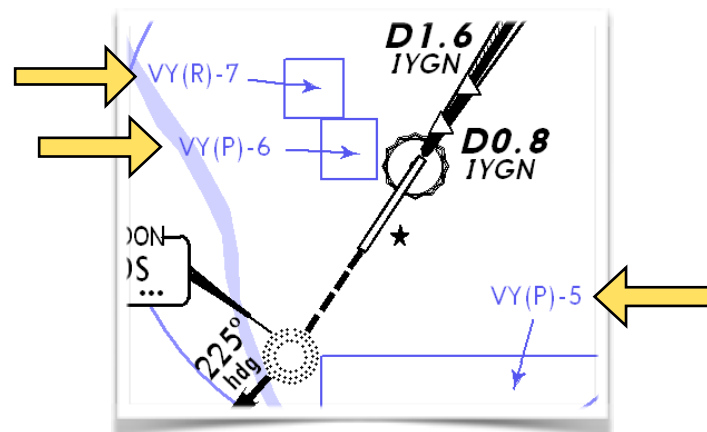
## 12. YANGON AIRPORT DATA

### AERODROME DATA

YANGON (VYYY/RGN)	
RUNWAYS:	03/21
LANDING DISTANCE:	3414
RUNWAY WIDTH:	61 M
APPROACH TYPE:	NDB/ILS
NOISE ABATEMENT:	NIL

### WARNING, CAUTIONS AND NOTES

- Maximum landing category CAT I.
- Autoland not authorized on all runways.
- Runway has a pronounced hump that gives the impression of as short runway.
- Do not enter the Prohibited/Restricted airspace around the aerodrome [VYR-7, VYP-6, VYP-5]

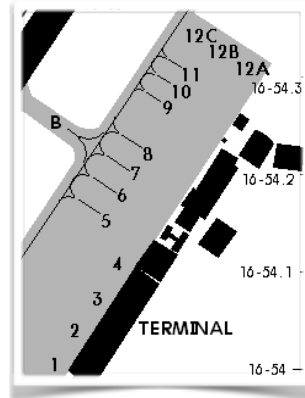


### WEATHER

- SUMMER: Hot and humid weather.
- WINTER: Early morning fog from December to February.
- **WET MONSOON SEASON:** The southwest monsoon hit Yangon May to October with an average rainfall of 500 mm per month. Low visibility during rainfall, check for NDB approach minima if applicable. Also refer to <http://severe.worldweather.wmo.int>

## GROUND MANEUVERING

- Maneuver with caution.
- Taxiway C not authorized.
- Parking stands from 9 to 12A not authorized.
- Cargo operations are conducted from parking stand number 5 or 6.



## DEPARTURE PROCEDURE

- No departure SIDs available, expect radar vectors to first enroute waypoint. Do not arm LNAV for takeoff.

## ARRIVAL PROCEDURE

- No arrival STARs available, expect radar vectors.
- ILS/NDB may be unreliable.

## ENGINE-OUT SID

- **RWY 03:** [SPECIAL EOSID] At HGU 112.3 enter HOLDING (214 INBOUD, RIGHT).
- **RWY 21:** [EOSID] RIGHT to HGU 112.3 (214 INBOUD, RIGHT)
- 

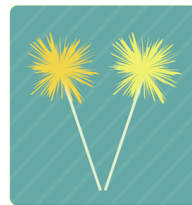
## DESTINATIONS ALTERNATES

When flying to Hong Kong you may use the following destinations alternate:

- **Bangkok Suv. (VTBS/BKK)** [Company preferred alternate]
- **Chiang Mai (VTCC/CNX)**
- **Kolkata (VECC/CCU)**

**EXPORTED COMMODITIES**

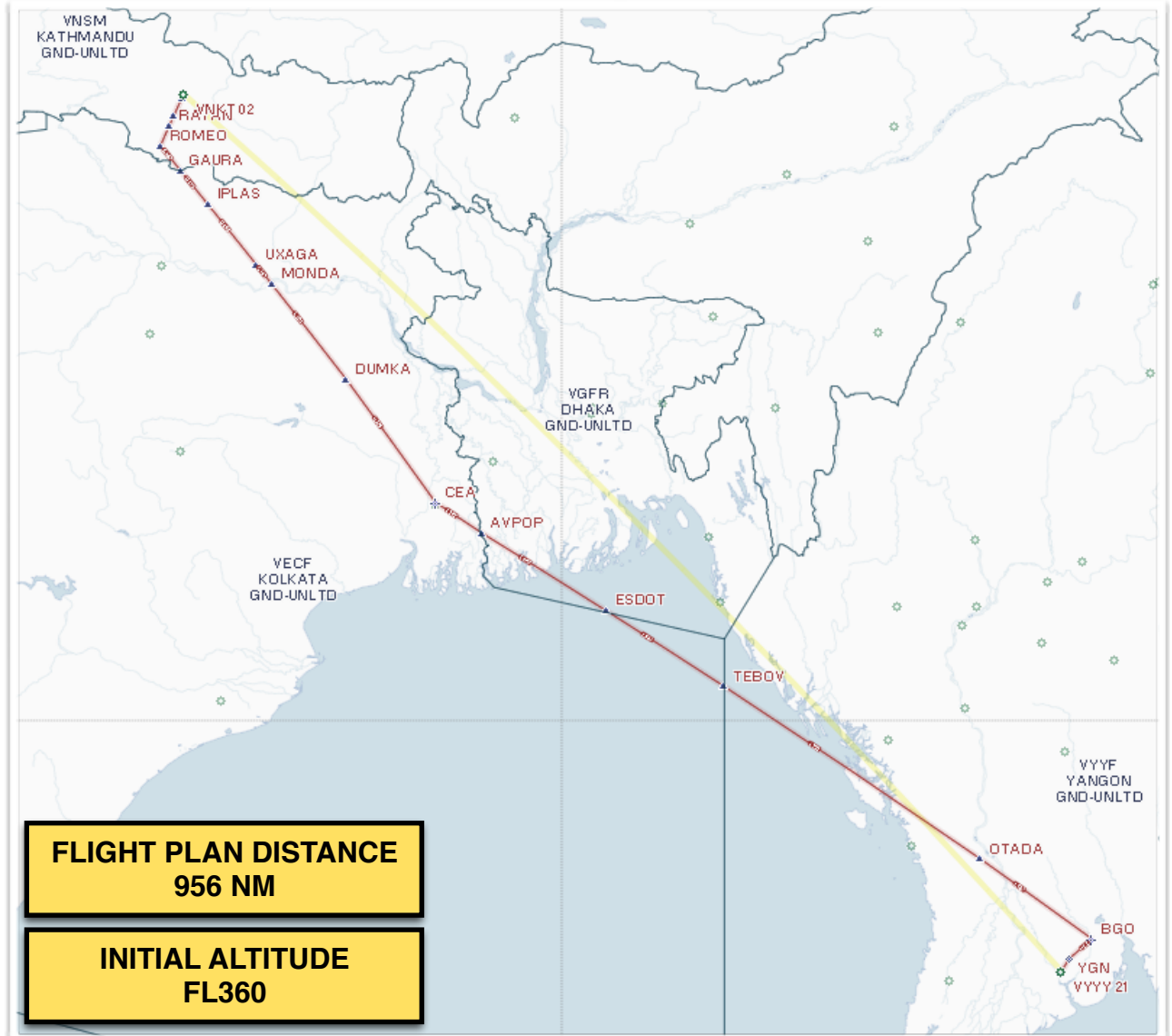
NapuleVola will transport the following goods out of Yangon: men shirts, woman shirts, leather footwear, fiber optics and dried legumes.



**13. FROM YANGON TO KATHMANDU**

**SUGGESTED ROUTE**

**DCT YGN DCT BGO L507 CEA R325 DUMKA R581 MONDA G463 ROMEO**



**TOTAL FUEL REQUIRED (INCLUDING RESERVE) (ISA +10C)**

<b>MAX ZFW (KG)</b>	<b>MAX FUEL (HEADWIND 55 KT)</b>
204,000	37,600 KG

TOTAL FUEL ADJUSTMENTS:

**ΔZFW:** subtract **50 KG** of fuel for each 1000 KG of ZFW decrease.

**ΔFL:** add **400 KG** of fuel for each 2000 FT of initial altitude decrease.

<b>ALTERNATE PLANNING/DIVERSION (WIND CALM - ISA +10C)</b>		
<b>ALTERNATE</b>	<b>MINIMUM DIVERSION FUEL (RESERVE)</b>	<b>ROUTE TO ALTERNATE</b>
VECC	10,800 KG	LALBA R325 DUMKA NOSIM
VGHS	11,200 KG	AHALE R344 BRT A467 KHR R344 RAJ G463 DAC
VIDP	12,300 KG	NARAN L626 HW
<b>FINAL RESERVE FUEL:</b>		<b>3300 KG</b>

**NOTES**

- Leg restricted to a maximum Zero Fuel Weight of 204,000 KG.
- Carefully review KATHMANDU airport data below.

**14. KATHMANDU AIRPORT DATA**

KATHMANDU (VNKT/KTM)	
RUNWAYS:	02/20
LANDING DISTANCE:	2930
RUNWAY WIDTH:	46 M
APPROACH TYPE:	RNAV-VOR/CIRCLING
NOISE ABATEMENT:	NIL

**WARNING, CAUTIONS AND NOTES**

**BEFORE OPERATING TO/FROM KATHMANDU CAREFULLY READ THE  
 “KATHMANDU EXPANDED AIRPORT BRIEFING” AVAILABLE ON THE  
 NAPULEVOLA WEBSITE.**

- Maximum landing category CAT I.
- Autoland not authorized on all runways.
- Aircraft not permitted to takeoff and land if KTM VOR or DME is inoperative.

**WEATHER**

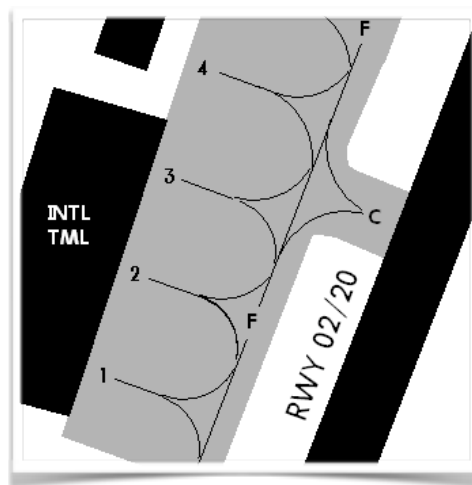
- LATE MAY TO EARLY JUNE (PRE-MONSOON PERIOD): Few intense thunderstorms (of short duration, around 20 minutes) and low clouds. Prevailing surface wind: Easterly, Southeasterly and Southwesterly.
- **MID JUNE TO MID SEPTEMBER (MONSOON PERIOD):** Heavy rain activity at night with few thunderstorm and some low clouds. Wind is variable from East, Southeast and southwest, usually between 5 to 10 KT. Average rainfall during the monsoon means is 330 mm per month. Also refer to <http://severe.worldweather.wmo.int>
- LATE SEPTEMBER TO MID OCTOBER (POST MONSOON PERIOD): Few thunderstorms in late afternoons and the nights can be expected with presence of low clouds. Morning mist may reduce the visibility down to 2000 m.



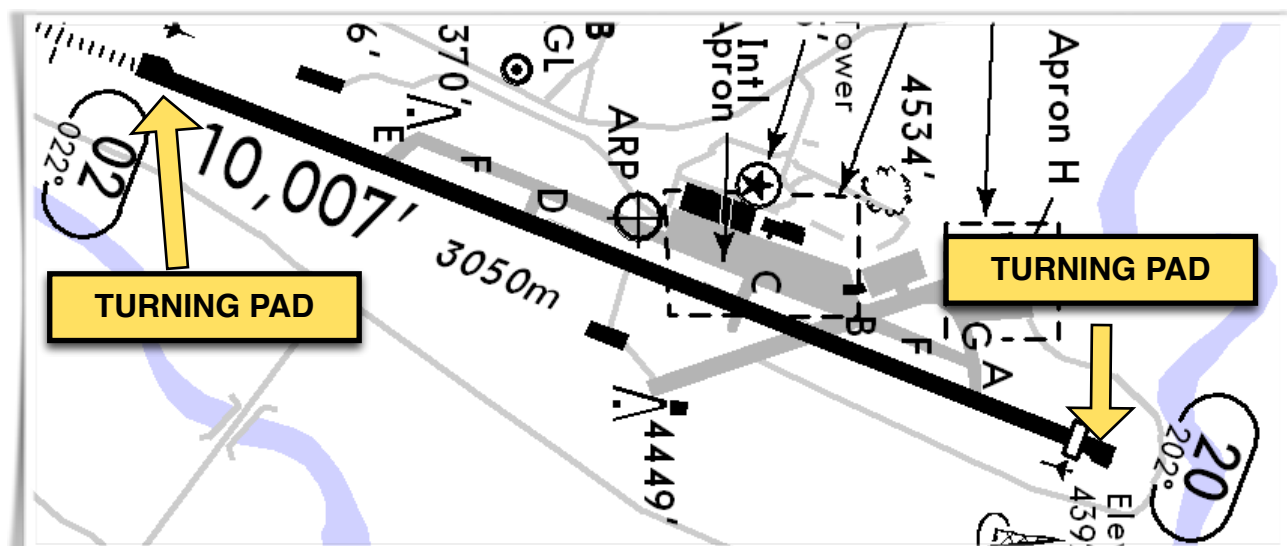
- MID OCTOBER TO END FEBRUARY (WINTER SEASON): Expect fog and low clouds at night and early morning (clearing by 0930 to 12:00 local time).
- EARLY MARCH TO END OF MAY (DRY SEASON): Thunderstorms starting late afternoon for only few hours with heavy clouds cells moving fast. Low clouds may be expected. Wind at surface may increase up to 40 KT.

### GROUND MANEUVERING

- Cargo operations are conducted from parking stand number 1, 2 and 3.



- Taxi with caution due narrow taxiways and reduced wing tip clearance.
- Backtrack required before takeoff. Use the turning pads at the end of each runway.



## DEPARTURE PROCEDURE

- The maximum ZFW for departure is restricted to: 208,000 KG.
- Takeoff only with derate T01 or full takeoff thrust.
- Refer to the "KATHMANDU EXPANDED AIPORT BRIEFING" on the NapuleVola website.

## ARRIVAL PROCEDURE

- If using autobrake for landing selection of **AUTOBRAKE 4** or above is MANDATORY.
- Refer to the "KATHMANDU EXPANDED AIPORT BRIEFING" on the NapuleVola website for the explanation of the approach procedure.

## ENGINE-OUT SID

- Refer to the "KATHMANDU EXPANDED AIPORT BRIEFING" on the NapuleVola website.

## DESTINATIONS ALTERNATES

When flying to Kathmandu you may use the following destinations alternate:

- **Kolkata (VECC/CCU)** [Company preferred alternate]
- **Jaipur (VGHS/DAC)**
- **New Delhi (VIDP/DEL)**

## EXPORTED COMMODITIES

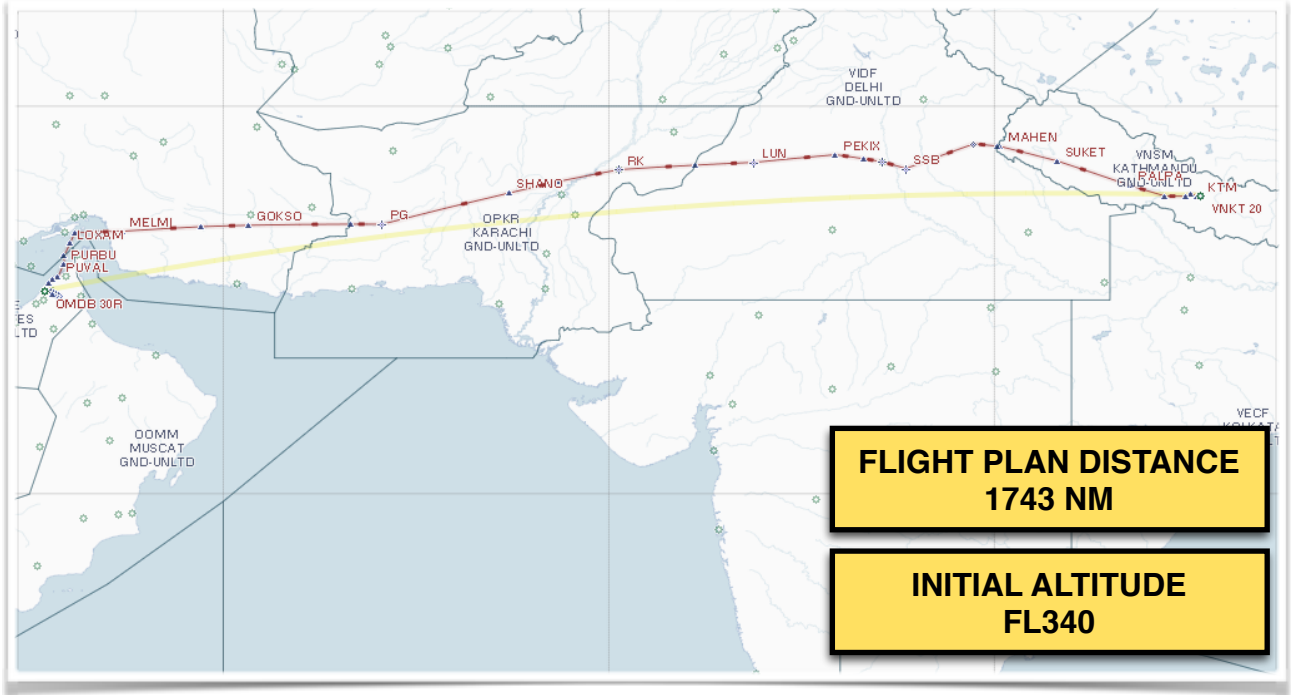
NapuleVola will transport the following goods out of Kathmandu: spices seeds, knitted hats, tea, dental products and unpacked medicaments.



**15. FROM KATHMANDU TO DUBAI**

**SUGGESTED ROUTE**

NARAN L626 ONISA L626 DPN G333 TIGER G202 RK G214 PG  
G665 ASVIB M561 MOBET A419 DARAX



**TOTAL FUEL REQUIRED (INCLUDING RESERVE) (ISA +10C)**

MAX ZFW (KG)	MAX FUEL (HEADWIND 50 KT)	COST INDEX
208,000	38,000 KG	60

**TOTAL FUEL ADJUSTMENTS:**  
**ΔZFW:** subtract **100 KG** of fuel for each 1000 KG of ZFW decrease.  
**ΔFL:** add **750 KG** of fuel for each 2000 FT of initial altitude decrease.

<b>ALTERNATE PLANNING/DIVERSION (WIND CALM - ISA +10C)</b>		
<b>ALTERNATE</b>	<b>MINIMUM DIVERSION FUEL (RESERVE)</b>	<b>ROUTE TO ALTERNATE</b>
OMAA	6200 KG	MIADA
OMDW	6400 KG	MIADA
OTHH	8700 KG	SITAT P699 KISAG M430 BOVIP Q215 AFNAN
<b>FINAL RESERVE FUEL:</b>		<b>3300 KG</b>

**NOTES**

- Leg restricted to a maximum Zero Fuel Weight of 208,000 KG.

**16. DUBAI INTERNATIONAL AIRPORT DATA****AERODROME DATA**

DUBAI INTL. (OMDB/DXB)		
RUNWAYS:	12L/30R	12R/30L
LANDING DISTANCE:	3600	3730
RUNWAY WIDTH:	60	60
APPROACH TYPE:	ILS/ILS	ILS/ILS
NOISE ABATEMENT:	NIL	

**WARNING, CAUTIONS AND NOTES**

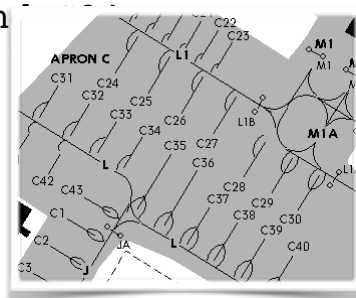
- Maximum landing category CAT IIIB (NO DH / RVR 75M).
- Do not mistake Sharjah airport located 10 nm to the Northeast of the field for Dubai International airport.

**WEATHER**

- GENERAL: Blowing sand or dust may reduce visibility considerably. Low level wind-shear may occur with light or calm surface winds. Fog may occur usually between 02:00 to 08:00 throughout the year, most common between November to April.
- SUMMER: Extremely high temperature with an average high of 41C, however the temperature may increase up to 50C.
- WINTER: Temperature range from 14C during night to 24C during the day.

**GROUND MANEUVERING**

- Cargo operations are conducted from Apron C, parking stand number C33 and



### DEPARTURE PROCEDURE

- When the temperature exceed 35C carefully crosscheck takeoff performance calculation and maximum allowed takeoff weight.

### ARRIVAL PROCEDURE

- Maintain 160 KT till 4 nm from threshold when establish on final approach.

### ENGINE-OUT SID

- **RWY 12L:** [SPECIAL EOSID] At OSTIN enter HOLDING (300 INBOUD, RIGHT)
- **RWY 12R:** [SPECIAL EOSID] At OSTIN enter HOLDING (300 INBOUD, RIGHT)
- **RWY 30L:** [SPECIAL EOSID] At GINKI enter HOLDING (120 INBOUD, LEFT)
- **RWY 30R:** [SPECIAL EOSID] At GINKI enter HOLDING (120 INBOUD, LEFT)

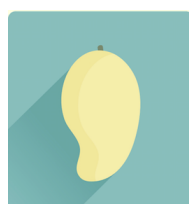
### DESTINATIONS ALTERNATES

When flying to Dubai you may use the following destinations alternate:

- **Abu Dhabi (OMAA/AUH)** [Company preferred alternate]
- **Dubai Al Maktoum (OMDW/DWC)**
- **Doha Hamad Int. (OTHH/DOH)**

### EXPORTED COMMODITIES

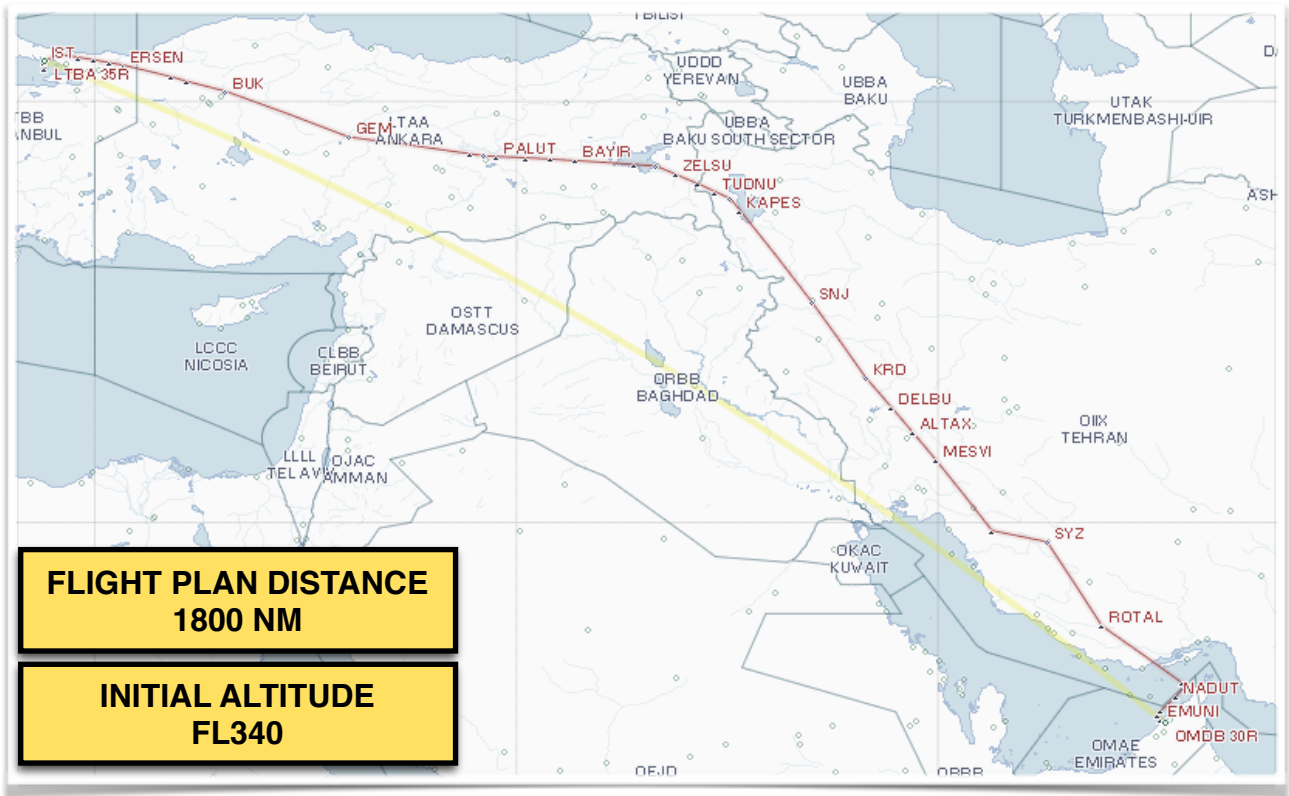
NapuleVola will transport the following goods out of Dubai: jewelry, diamonds, Sheik's personal belongings and dates fruits.



**17. FROM DUBAI TO ISTANBUL**

**SUGGESTED ROUTE**

DARAX Q1 SYZ G665 KAVIL UL223 UMH UL124 TUDNU G781 BONAM  
 UG81 NAREN UG81 EZS UG8 GEM UT32 BUK UA4 GAYEM



**TOTAL FUEL REQUIRED (INCLUDING RESERVE) (ISA +10C)**

ZFW (KG)	WIND CALM	HEADWIND 45 KT	TAILWIND 45 KT
232,000	41,900	45,200 KG	38,500 KG

**TOTAL FUEL ADJUSTMENTS:**

**ΔZFW:** add/subtract **110 KG** of fuel for each 1000 KG of ZFW increase/decrease.

**ΔFL:** add **520 KG** of fuel for each 2000 FT of initial altitude decrease.

<b>ALTERNATE PLANNING/DIVERSION (WIND CALM - ISA +10C)</b>		
<b>ALTERNATE</b>	<b>MINIMUM DIVERSION FUEL (RESERVE)</b>	<b>ROUTE TO ALTERNATE</b>
LTAC	9200 KG	PIMAV L614 TOKER G8 PETAR
LTFJ	7300 KG	YAA
LTBJ	8800 KG	MARMA Y255 BIG G80 BERGO
<b>FINAL RESERVE FUEL:</b>		<b>3700 KG</b>

**NOTES**

- Route planned to avoid Iraqi and Syrian airspace due safety concerns.



**18. ISTANBUL ATATURK AIRPORT DATA****AERODROME DATA**

<b>ISTANBUL ATATURK INTL. (VIDP/DEL)</b>			
<b>RUNWAYS:</b>	05/23	17L/35R	17R/35L
<b>LANDING DISTANCE:</b>	2450	3000	3000
<b>RUNWAY WIDTH:</b>	60	45	45
<b>APPROACH TYPE:</b>	ILS/ILS	ILS/ILS	CIRCLING/ILS
<b>NOISE ABATEMENT:</b>	REDUCTION ALTITUDE: 800 FT ACCELERATION ALTITUDE: 3000 FT		

**WARNING, CAUTIONS AND NOTES**

- Maximum landing category CAT IIIA [50 FT / RVR 200 M].
- Autoland not authorized on runways 17L, 23, and 35L.
- When runway 17L/R in use plan for extra taxi fuel.

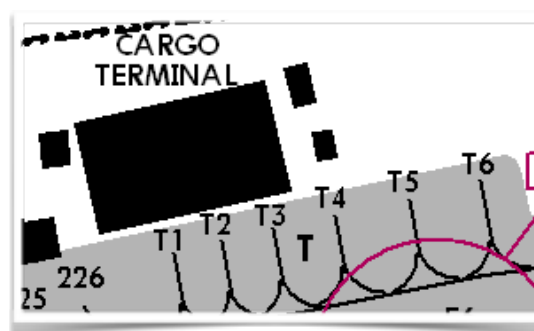
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**WEATHER**

- GENERAL: Persistent high humidity.
- WINTER: November to January poor visibility and low clouds.

**GROUND MANEUVERING**

- Cargo operations are conducted from the Cargo Terminal, parking stand number T4 to T6.



## DEPARTURE PROCEDURE

- NIL

## ARRIVAL PROCEDURE

- NIL

## ENGINE-OUT SID

- **RWY 05:** [SPECIAL EOSID] At 5 DME IST 112.5 RIGHT to ERMAN (355 INBOUD, LEFT)
- **RWY 17L/R:** [EOSID] RIGHT to CEK 328 (090 INBOUD, LEFT)
- **RWY 23:** [EOSID] RIGHT to CEK 328 (090 INBOUD, LEFT)
- **RWY 35L/R:** [SPECIAL EOSID] At IS 396 LEFT to CEK 328 (090 INBOUD, LEFT)

## DESTINATIONS ALTERNATES

When flying to Dubai you may use the following destinations alternate:

- **Ankara (LTAC/ESB)** [Company preferred alternate]
- **Istanbul Sabiha Gokcen (LTFJ/SAW)**
- **Izmir (LTBJ/ADB)**

## EXPORTED COMMODITIES

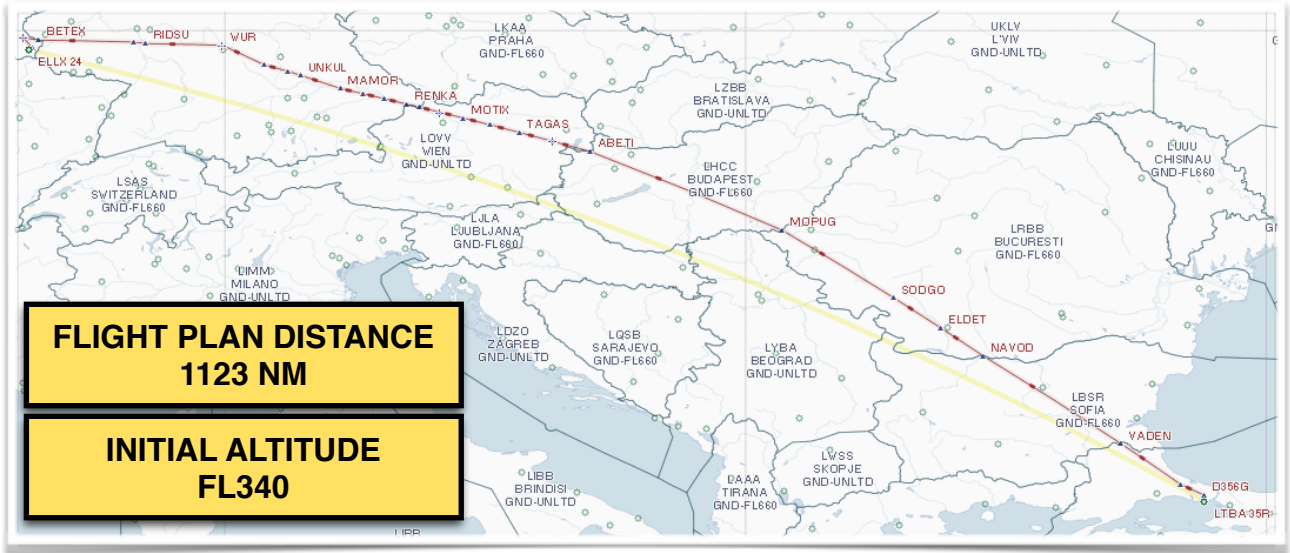
NapuleVola will transport the following goods out of Istanbul: mail, gold coins, HD televisions and video games.



**19. FROM ISTANBUL TO LUXEMBOURG**

**SUGGESTED ROUTE**

FENER UA16 VADEN N618 NAVOD UN618 SODGO UN618 MOPUG  
UY577 ABETI UL610 UPALA Z744 WUR T892 BETEX



**TOTAL FUEL REQUIRED (INCLUDING RESERVE) (ISA +10C)**

ZFW (KG)	WIND CALM	HEADWIND 45 KT	TAILWIND 45 KT
232,000	28,900 KG	31,200 KG	27,000 KG

TOTAL FUEL ADJUSTMENTS:

**ΔZFW:** add/subtract **80 KG** of fuel for each 1000 KG of ZFW increase/decrease.

**ΔFL:** add **350 KG** of fuel for each 2000 FT of initial altitude decrease.

**ALTERNATE PLANNING/DIVERSION (WIND CALM - ISA +10C)**

ALTERNATE	MINIMUM DIVERSION FUEL (RESERVE)	ROUTE TO ALTERNATE
EDDF	7600 KG	ASMOX Y891 LULAT Y890 RASVO T180 UNOKO
EBLG	6400 KG	DIK N852 GESLO
EBBR	7100 KG	DIK N852 LNO
<b>FINAL RESERVE FUEL:</b>		<b>3600 KG</b>

## NOTES

- NIL

## **20. ENROLL NOW!**

More technical documents will be available on [www.napulevola.it](http://www.napulevola.it). Some of them will be available only to NapuleVola pilots. NapuleVola Virtual Airline is **FREE** and **OPEN** to anyone with **ANY** level of experience. All the sceneries, aircrafts and documents will **ALWAYS** be available for free.

If you are not one of our pilot yet, register today and start flying with us!

## **21. CONTACTS**

We encourage people to give us a feedback or report errors on all the technical publication. Also if you have any question of any kind (even stupid ones!) don't esitate to contact us.

The preferred way to get in touch with us is to use our on-line forum on [www.napulevola.it](http://www.napulevola.it). Questions regarding B777 fleet and operation can be addressed also to [b777@napulevola.it](mailto:b777@napulevola.it).

Happy Landings :-)  
Andrea Barbarano, NPV1208

