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Following supplement is issued for information, guidance and necessary action.



S. RAHEJA

OFFICIATING CHAIRMAN
AIRPORTS AUTHORITY OF INDIA

[EFFECTIVE DATE: 20 AUG 2015]

RNAV 1 (GNSS) SIDs & STARs
GOA AIRPORT (VOGO)

1. Introduction

- 1.1. For RNAV 1 (GNSS) SID and STAR operations, aircraft shall be GNSS equipped and the navigation systems shall meet ICAO RNAV 1 standard of accuracy or equivalent and should have received suitable approvals for RNAV 1 operations.
- 1.2. Operators/pilots who are not approved to fly the RNAV 1 (GNSS) SIDs and STARs shall inform ATC and expect radar vectors.
- 1.3. Pilots shall comply with an ATC assigned level. Pilots shall also adhere to the altitude and speed restrictions depicted on the cleared RNAV 1 (GNSS) SIDs and STARs. ATC clearance will take precedence when such clearance does not permit pilots to adhere to altitude and speed restrictions depicted on the RNAV 1 (GNSS) SIDs and STARs.
- 1.4. Aircraft may be radar-vector off an RNAV SID/STAR. Such aircraft may subsequently be given instruction to intercept the appropriate waypoint on an RNAV SID/STAR.

2. Arrivals

- 2.1. STARs are presented in diagrammatic format on a chart which comprises two main elements:
 - a) a TRANSITION route; and
 - b) An ARRIVAL route.

- 2.2. A TRANSITION route starts at a waypoint on the ATS route (or a connector route) and then requires RNAV tracking to position the aircraft for the ARRIVAL route.
- 2.3. RNAV 1 approved arrivals to Goa airport will be cleared on the appropriate RNAV 1 STARs by ATC.
- 2.4. All arriving aircraft for Runway 26 at Goa airport are required to follow the appropriate Transition and Arrival routes for the RNAV STARS as follows:

ATS Route	Transition	RNAV STAR	Remarks
W15S	UDULO	ALNAD	
W67	PEKSO		
W120	BBM	TASIT	
W15	HORAT	TIMLA	
W101W, R461	PAMTO		

- 2.5. All arriving aircraft for Runway 08 at Goa Airport are required to follow the appropriate TRANSITION and ARRIVAL routes for the RNAV STARS as follows:

ATS Route	Transition	RNAV STAR	Remarks
W15S	UDULO	LIMAT	
W67	PEKSO		
W120	BBM	FEDOM	
W15	HORAT	GUPOL	
W101W, R461	PAMTO		

- 2.6. Additional elements on the STAR chart include the following:
- Vertical restrictions designed to contain aircraft in controlled airspace and to separate aircraft from obstacles and to avoid, to the degree possible, conflict with departing aircraft.
 - Speed restrictions designed for flow control purposes.
- 2.7. RNAV STAR for RWY26 are closed STARs terminating at intermediate fix of ILS approach procedure. Clearance for approach shall be given before waypoint GA391 in ALNAD & TASIT STAR & GA397 in TUMLA STAR.
- 2.8. RNAV STAR for RWY08 are open STARs terminating at a waypoint, therefore heading to intercept final approach track shall be issued by ATC.

2.9. Clearance for STAR shall be issued by ATC and shall contain the following elements, in the order mentioned:

- a) STAR identifier;
- b) TRANSITION identifier;
- c) Runway-in-use;
- d) Assigned level (see note below)

Phraseology: <Call sign> Cleared via <STAR Identifier> ARRIVAL, <TRANSITION Identifier> TRANSITION, RUNWAY <Runway-in-use>, <Assigned Level>

Note: RNAV STAR defines a lateral route for an aircraft to fly from a significant point along the en-route/terminal phase of flight to the approach phase with minimal, or no, ATC intervention. Altitude and speed restrictions may be depicted as required on any RNAV STAR. All charted altitude and speed restrictions are mandatory unless specifically cancelled by ATC.

3. Departures

3.1. A RNAV 1 SID is a planned ATC departure procedure, published in the AIP, for the pilot's and controller's use in graphic and textual form. SID facilitates transition from the terminal to the appropriate en route structure.

3.2. A Transition shall be issued in conjunction with the RNAV 1 SID.

Phraseology: <Call sign> Cleared to <Destination> via <Route> <Level> <SID Identifier> DEPARTURE, <TRANSITION Identifier> TRANSITION, <Assigned Level>.

3.3. The RNAV 1 SIDs for runway 26 along with appropriate Transitions and routes are listed below:

ATS Route	Transition	RNAV SID	Remarks
W15N	OKILA	MESGA	
W67	PEKSO		
W120	BBM	BALCO	
W15	HORAT	PABLU	
W101E, R461	VETOL		

3.4. The RNAV 1 SIDs for runway 08 along with appropriate Transitions and routes are listed below:

ATS Route	Transition	RNAV SID	Remarks
W15N	OKILA	DAPNU	
W67	PEKSO		
W120	BBM	VIXET	
W15	HORAT	METAP	
W101E, R461	VETOL		

4. RNAV Holding Procedures

4.1. RNAV holdings are designed to facilitate holding aircraft for delay to achieve required spacing between arrivals during periods of congestion. The holdings up to maximum holding altitude are clear of the SIDs and STARs of the appropriate runway in use. Following RNAV holding waypoints and their associated RNAV holding procedures have been designed:

Holding Waypoint	Latitude and Longitude of Holding Waypoint	Inbound course Deg. Mag.	Outbound Leg (Min)	Turn	Minimum Holding Altitude (Ft.)	Maximum Holding Altitude (Ft.)
FEDOM	N152013.3 E0733627.9	081	1	Left	3000	5000
TALEX	N152515.7 E0740309.7	261	1	Left	5000	6000

Note - The maximum holding speed for all the holds shall be 230 Kt (IAS)

5. Other Operational Procedures

5.1. An aircraft having been cleared to PROCEED DIRECT TO (significant point), where such significant point is an element of SID/STAR shall:

5.1.1. Comply with both speed and level restrictions (only to the extent the cleared level makes possible) published at such significant point, unless such restrictions are explicitly cancelled by ATC; and

5.1.2. Continue with the SID/STAR, after reaching the significant point.

5.2. For the operation of RNAV 1 SIDs and STARs at Goa airport, radar surveillance is mandatory. RNAV 1 operation shall be continued only when radar performance is satisfactory.

6. Contingency Procedures

6.1. Radio Communications Failure Procedures

6.1.1. In the event of a radio communication failure, the pilots of RNAV 1 equipped aircraft are expected to follow the procedures given below:

- a) Set transponder to Mode A/C, Code 7600.
- b) Arrivals to continue on the cleared STAR and at the end of the STAR make a convenient turn to intercept localizer or final approach track of the runway in use.
- c) Departures to follow the cleared SID following all built-in restrictions and further climb to the current flight plan cruising level.
- d) In case of departures from Goa Airport becoming RCF and plans to land back at Goa Airport the procedures given in para 6.2 of this supplement shall be followed.

6.2. Departure Aircraft Experiencing RCF and Landing Back at Goa Airport

6.2.1. Departures within 30NM from Goa Airport desiring to land back at Goa to follow following procedure:

Departure from RWY26	
SID	Procedure
MESGA, BALCO	Proceed on cleared RNAV 1 SID up to 30NM from Goa airport, maintain or descend to F70. Turn left to (113.6 GGO) VOR. Join GGO hold at F70. After 5 min of holding descend in the hold to 3000ft and commence appropriate approach procedure to land on the runway used for departure i.e. RWY26
PABLU	Proceed on cleared RNAV 1 SID up to 30NM from Goa airport, maintain or descend to F70. Turn right to (113.6 GGO) VOR. Join GGO hold at F70. After 5 min of holding descend in the hold to 3000ft and commence appropriate approach procedure to land on the runway used for departure i.e. RWY26
VOR Holding – 1 min right hand race track, inbound track 081 Deg M (R-261)	
Departures from RWY08	
SID	Procedure
DAPNU, VIXET	Proceed on cleared RNAV 1 SID up to 30NM from Goa airport, maintain or descend to F70. Turn left to (113.6 GGO) VOR. Join GGO hold at F70. After 5 min of holding descend in the hold to 3000ft and commence appropriate approach procedure to land on the runway used for departure i.e. RWY08
METAP	Proceed on cleared RNAV 1 SID up to 30NM from Goa airport, maintain or descend to F70. Turn right to (113.6 GGO) VOR. Join GGO hold at F70. After 5 min of holding descend in the hold to 3000ft and commence appropriate approach procedure to land on the runway used for departure i.e. RWY08.
VOR Holding – 1 min left hand race track, inbound track 264 Deg M (R-084)	

6.2.2. Designated area for fuel dumping

6.2.2.1. Airspace with following limits is designated for fuel dumping: From (113.6 GGO) VOR between R-270 to R-330 from 25DME to 35DME.

6.2.2.2. To proceed to designated area for fuel dumping, aircraft shall route via GGO VOR after following the RCF procedure as in para 6.2.1.

6.3. Aircraft experiencing degradation or failure of RNAV 1 System or GNSS signal

6.3.1. When an aircraft cannot meet the requirements of RNAV 1 compliance as a result of a failure or degradation of the RNAV 1 system, pilot will notify the same and request a revised clearance.

6.4. Aircraft experiencing adverse weather

6.4.1. When an aircraft flying on an RNAV 1 SIDs and STARs procedure encounters adverse weather and is likely to impact the aircraft's adherence to the cleared procedure, pilot will notify the same and request a revised clearance.

7. List of Waypoints

7.1. List of terminal area waypoints specific to RNAV 1 SIDs and STARs for Goa airport.

S. No	Waypoint ID	Latitude	Longitude
1	ALNAD	N154953.1	E0740341.2
2	BAGAN	N153906.2	E0741608.1
3	BALCO	N152759.7	E0734739.6
4	DAPNU	N154002.5	E0740923.7
5	FEDOM	N152013.3	E0733627.9
6	GA368	N150109.1	E0741120.6
7	GA374	N152529.5	E0733524.5
8	GA378	N160023.5	E0734624.5
9	GA380	N160101.2	E0733412.8
10	GA382	N151504.1	E0733755.6
11	GA383	N155935.3	E0735439.7
12	GA385	N153936.8	E0740708.0
13	GA387	N153450.6	E0741307.3
14	GA389	N153125.4	E0740939.5
15	GA391	N152800.0	E0740611.4
16	GA393	N150712.0	E0742042.4
17	GA395	N150942.2	E0741159.0
18	GA397	N152405.2	E0740707.3
19	GA401	N151915.1	E0740505.9

S. No	Waypoint ID	Latitude	Longitude
20	GA403	N152917.5	E0740941.7
21	GA405	N155846.7	E0740316.7
22	GA407	N160822.4	E0733402.2
23	GA409	N151159.2	E0741854.8
24	GA413	N153017.9	E0740029.7
25	GA415	N153346.0	E0740641.3
26	GA417	N152159.8	E0734543.6
27	GA419	N151114.8	E0740638.5
28	GA421	N145420.5	E0735955.7
29	GA425	N144951.0	E0741515.9
30	GA427	N153300.4	E0740635.8
31	GA429	N150340.8	E0741012.5
32	GA431	N154610.0	E0742808.9
33	GA435	N155800.8	E0740155.9
34	GA438	N160314.4	E0734159.8
35	GA440	N161043.9	E0732847.8
36	GA442	N155651.2	E0734243.5
37	HORAT	N143633.1	E0740854.3
38	LIMAT	N154903.2	E0733436.8
39	MESGA	N152701.6	E0734359.1
40	METAP	N152355.5	E0735602.1
41	PABLU	N151653.2	E0734626.9
42	PAMTO	N145140.7	E0743028.1
43	PEKSO	N161219.0	E0735850.9
44	TALEX	N152515.7	E0740309.7
45	TASIT	N154055.0	E0741918.4
46	TIMLA	N152003.3	E0741238.1
47	TUPUL	N161523.7	E0731825.2
48	VETOL	N150224.3	E0743711.3
49	VIXET	N152453.7	E0740105.7
50	GUPOL	N150004.4	E0735904.3

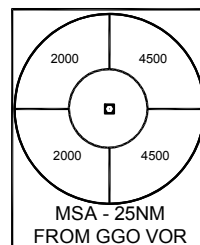
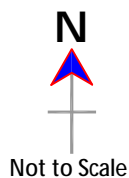
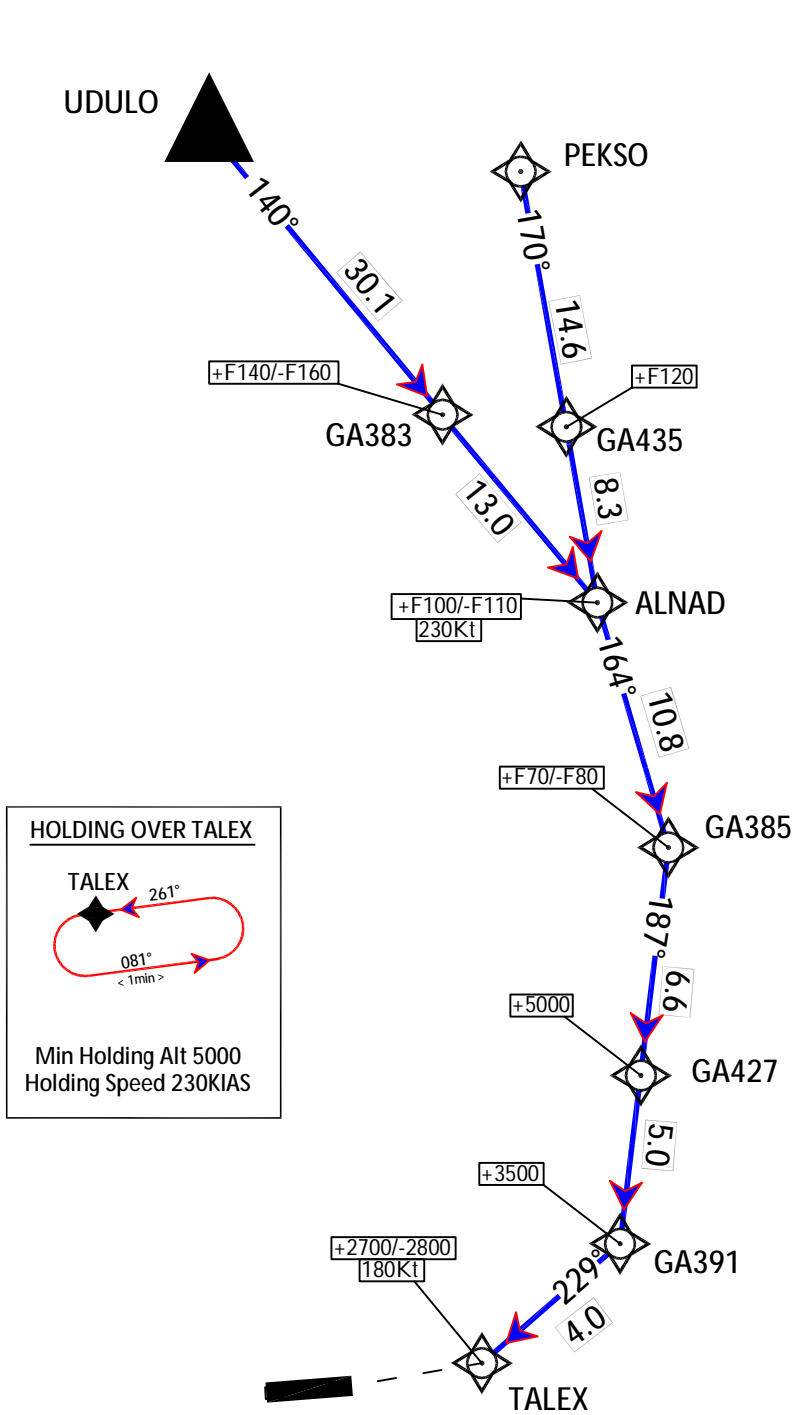
8. RNAV 1 SIDs and STARs for Goa airport

RNAV 1 SIDs and STARs for Goa airport in the form of charts and tabular descriptions.

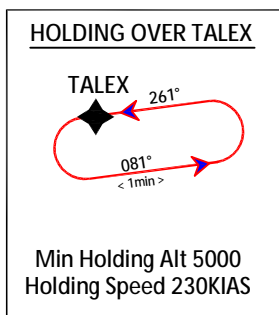
AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

TWR	118.1
APP	119.7
ATIS	126.6

ALNAD ARRIVAL
RWY 26
RNAV (GNSS)
RADAR REQUIRED



Co-ordinates are in WGS-84.
 Tracks are magnetic.
 Distance in nautical miles.
 Altitude in feet.

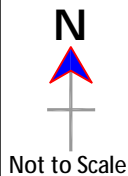


WARNING	Aircraft to follow STAR flight level/speed restrictions and unless otherwise authorised by ATC
NOTE	If unable to comply with RNAV STAR advice ATC.

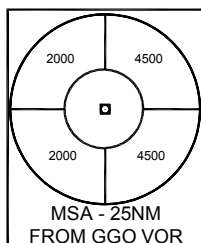
AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

TWR	118.1
APP	119.7
ATIS	126.6

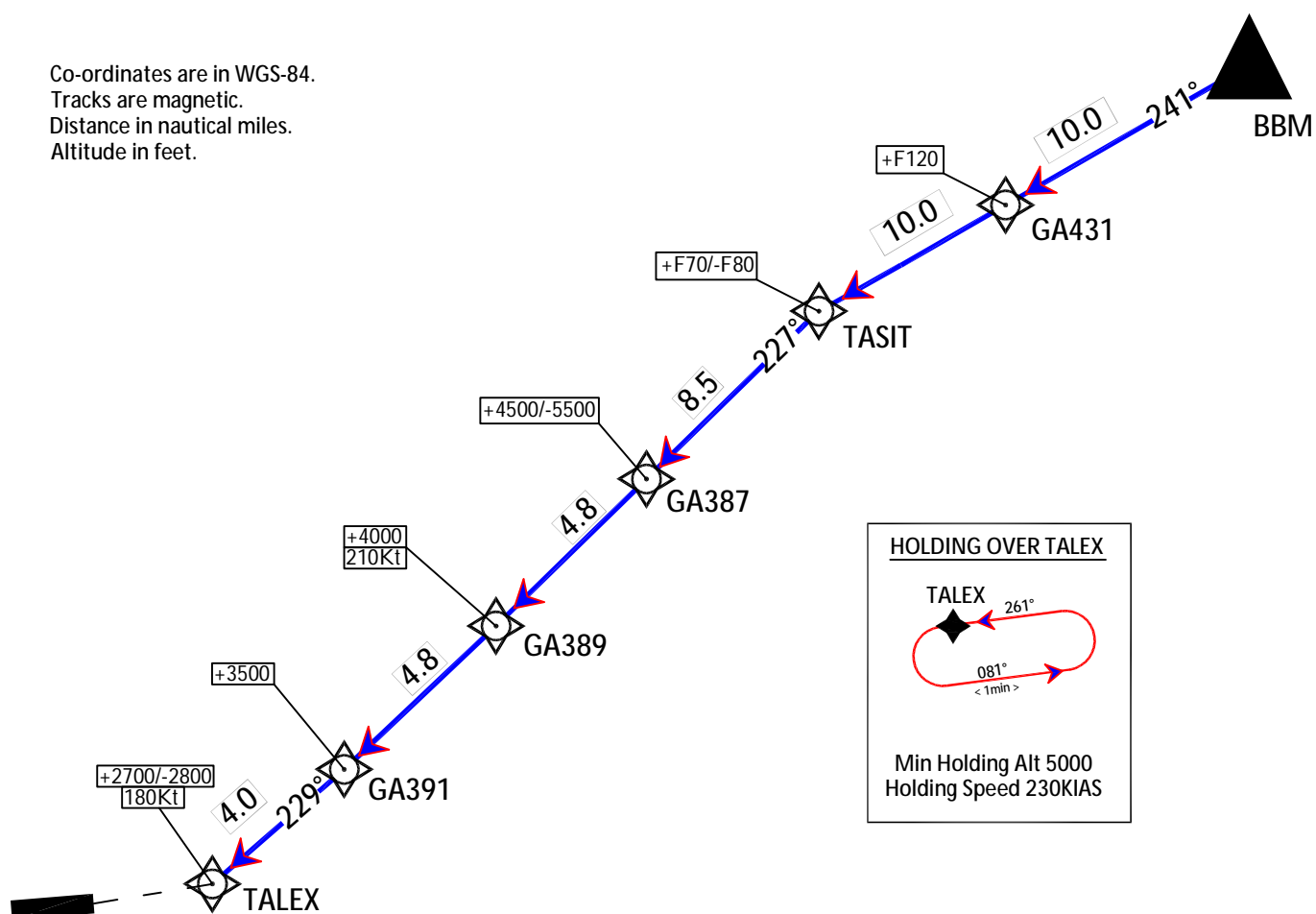
TASIT ARRIVAL
RWY 26
RNAV-1 (GNSS)
RADAR REQUIRED



Not to Scale



Co-ordinates are in WGS-84.
 Tracks are magnetic.
 Distance in nautical miles.
 Altitude in feet.



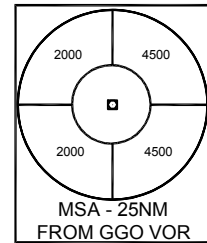
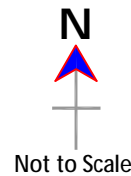
WARNING	Aircraft to follow STAR flight level/speed restrictions and unless otherwise authorised by ATC
NOTE	If unable to comply with RNAV STAR advice ATC.

AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

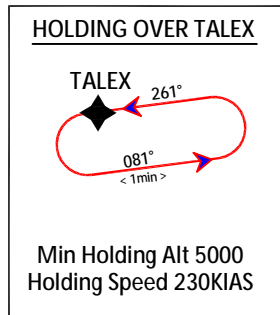
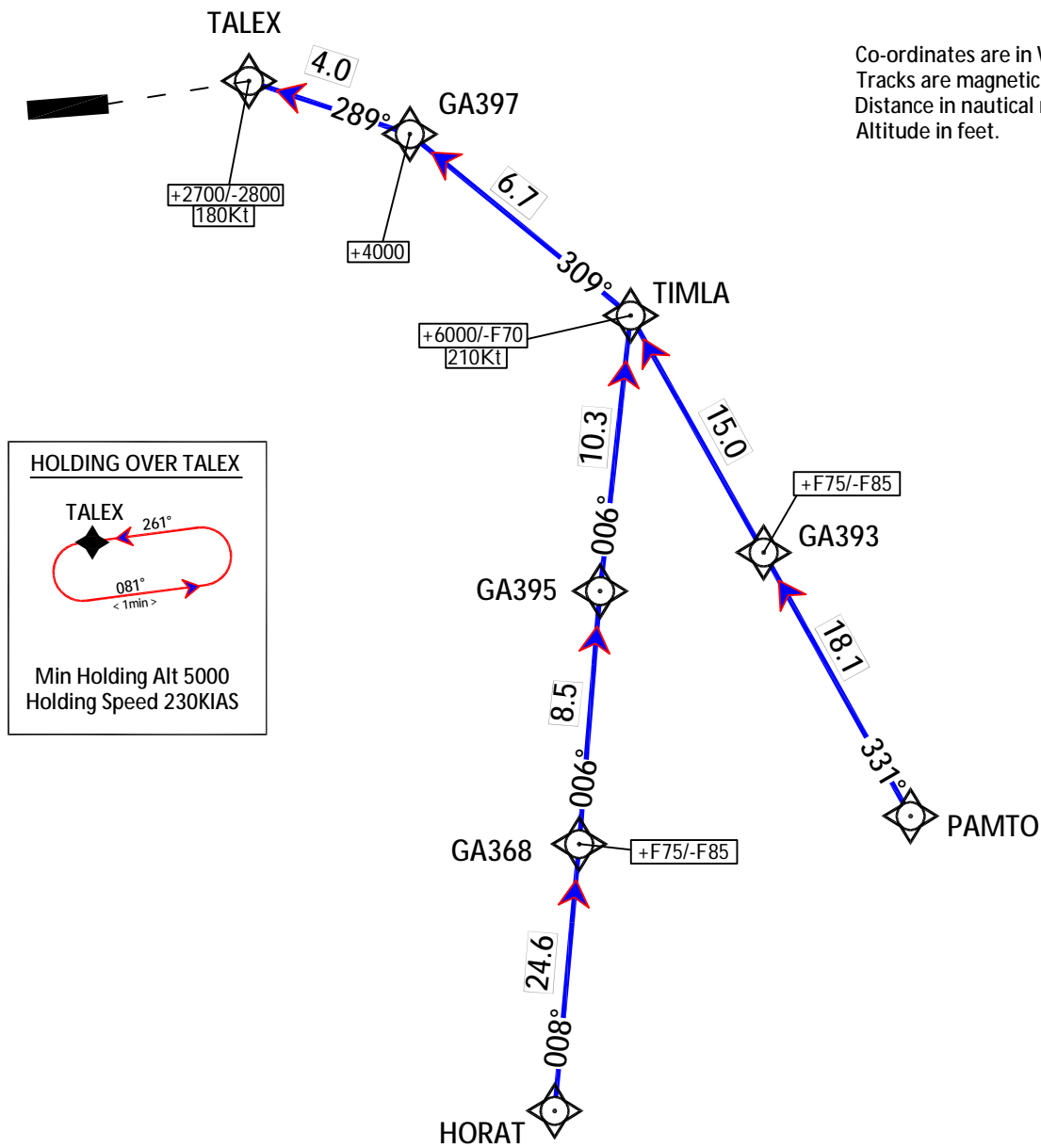
TWR	118.1
APP	119.7
ATIS	126.6

TIMLA ARRIVAL
 RWY 26
 RNAV-1 (GNSS)
 RADAR REQUIRED

WARNING	Aircraft to follow STAR flight level/speed restrictions and unless otherwise authorised by ATC
NOTE	If unable to comply with RNAV STAR advice ATC.



Co-ordinates are in WGS-84.
 Tracks are magnetic.
 Distance in nautical miles.
 Altitude in feet.



ALNAD RNAV-1 (GNSS) ARRIVAL RWY26

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Enroute Transition - PEKSO									
10	IF	PEKSO	-	-	-	-	-	-	-
20	TF	GA435	-	170(168)	-	+F120	-	14.6	RNAV-1
30	TF	ALNAD	-	170(168)	-	+F100/-F110	230	8.3	RNAV-1
Enroute Transition - UDULO									
10	IF	UDULO	-	-	-	-	-	-	-
20	TF	GA383	-	140(138)	-	+F140/-F160	-	30.1	RNAV-1
30	TF	ALNAD	-	140(138)	-	+F100/-F110	230	13.0	RNAV-1
Runway Transition Data - RWY26									
10	IF	ALNAD	-	-	-	-	-	-	-
20	TF	GA385	-	164(162)	-	+F70/-F80	-	10.8	RNAV-1
30	TF	GA427	-	187(185)	-	+5000	-	6.6	RNAV-1
40	TF	GA391	-	187(185)	-	+3500	-	5.0	RNAV-1
50	TF	TALEX	-	229(227)	-	+2700/-2800	180	4.0	RNAV-1

TASIT RNAV-1 (GNSS) ARRIVAL RWY26

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Enroute Transition - BBM									
10	IF	BBM	-	-	-	-	-	-	-
20	TF	GA431	-	241(239)	-	+F120	-	10.0	RNAV-1
30	TF	TASIT	-	241(239)	-	+F70/-F80	-	10.0	RNAV-1
Runway Transition Data - RWY26									
10	IF	TASIT	-	-	-	-	-	-	-
20	TF	GA387	-	227(225)	-	+4500/-5500	-	8.5	RNAV-1
30	TF	GA389	-	226(224)	-	+4000	210	4.8	RNAV-1
40	TF	GA391	-	227(225)	-	+3500	-	4.8	RNAV-1
50	TF	TALEX	-	229(227)	-	+2700/-2800	180	4.0	RNAV-1

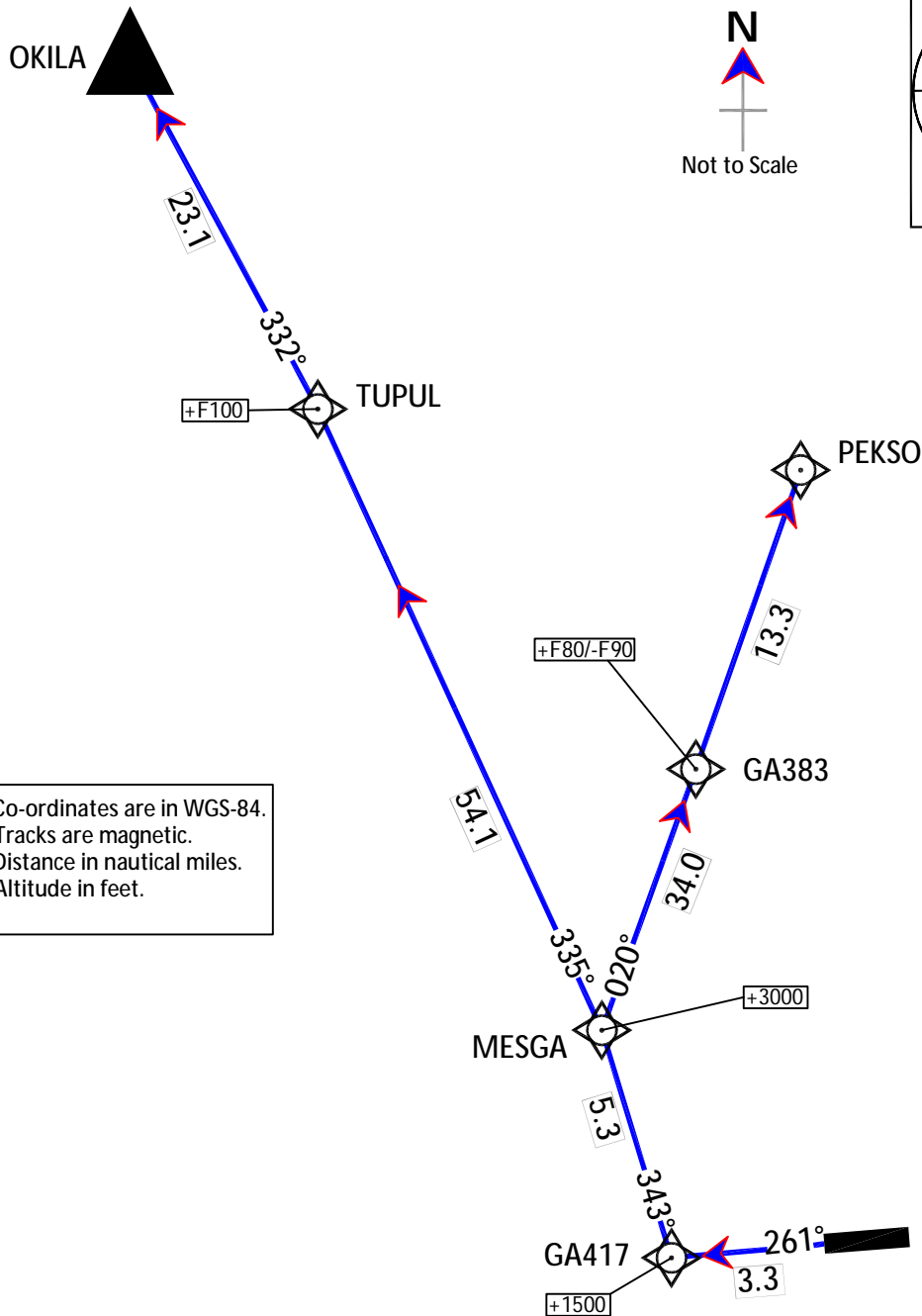
TIMLA RNAV-1 (GNSS) ARRIVAL RWY26

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Enroute Transition - HORAT									
10	IF	HORAT	-	-	-	-	-	-	-
20	TF	GA368	-	008(006)	-	+F75/-F85	-	24.6	RNAV-1
30	TF	GA395	-	006(004)	-	-	-	8.5	RNAV-1
40	TF	TIMLA	-	006(004)	-	+6000/-F70	210	10.3	RNAV-1
Enroute Transition - PAMTO									
10	IF	PAMTO	-	-	-	-	-	-	-
20	TF	GA393	-	331(329)	-	+F75/-F85	-	18.1	RNAV-1
30	TF	TIMLA	-	331(329)	-	+6000/-F70	210	15.0	RNAV-1
Runway Transition Data - RWY26									
10	IF	TIMLA	-	-	-	-	-	-	-
20	TF	GA397	-	309(307)	-	+4000	-	6.7	RNAV-1
30	TF	TALEX	-	289(287)	-	+2700/-2800	180	4.0	RNAV-1

AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

TWR	118.1
APP	119.7
ATIS	126.6

MESGA DEPARTURE
 RWY 26
 RNAV-1 (GNSS)
 RADAR REQUIRED



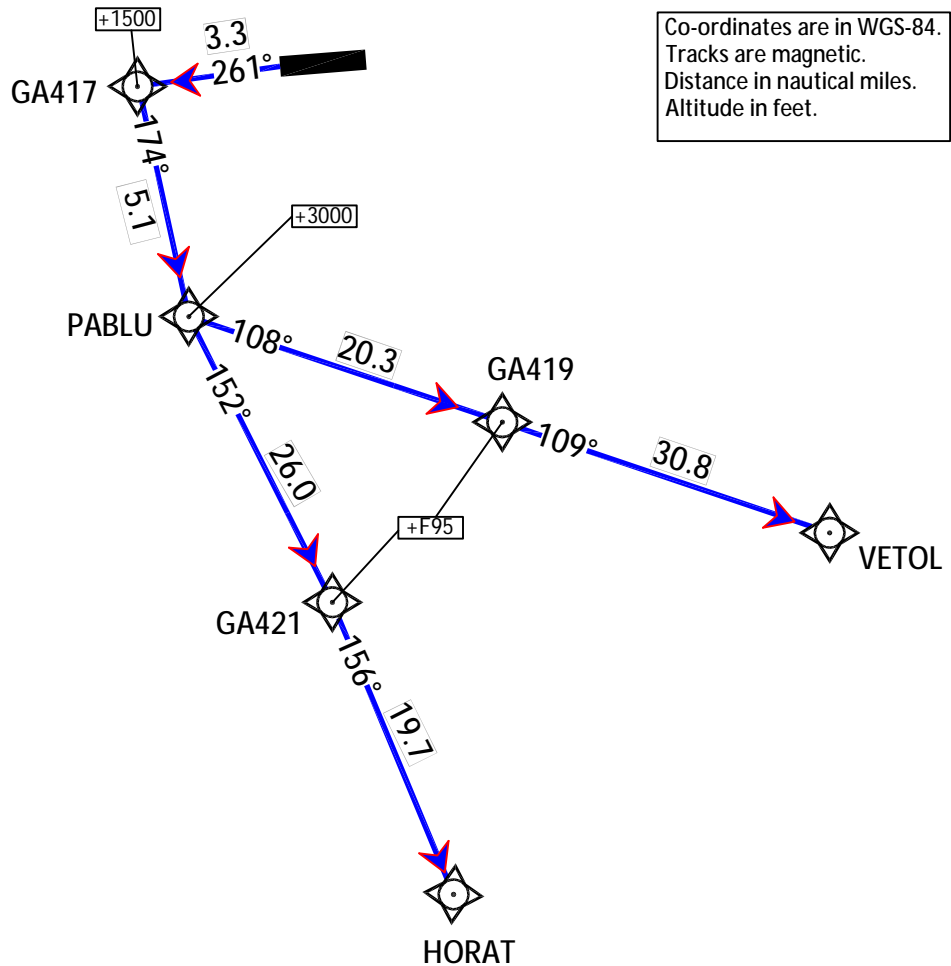
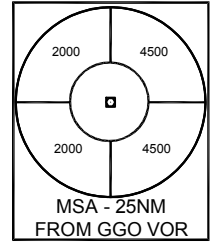
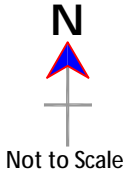
Co-ordinates are in WGS-84.
 Tracks are magnetic.
 Distance in nautical miles.
 Altitude in feet.

RCF Procedure	SQUAWK Mode A/C code 7600, follow SID with restrictions and climb to FPL cruising level.
Warning	Aircraft to follow SID flight level/speed restrictions unless otherwise authorised by ATC
Note 1	If unable to comply with RNAV SID advice ATC and expect RADAR Vectors or alternate clearance.
Note 2	Minimum climb gradient 7% (425ft/NM) upto 3000Ft.

AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

TWR	118.1
APP	119.7
ATIS	126.6

PABLU DEPARTURE
 RWY 26
 RNAV-1 (GNSS)
 RADAR REQUIRED

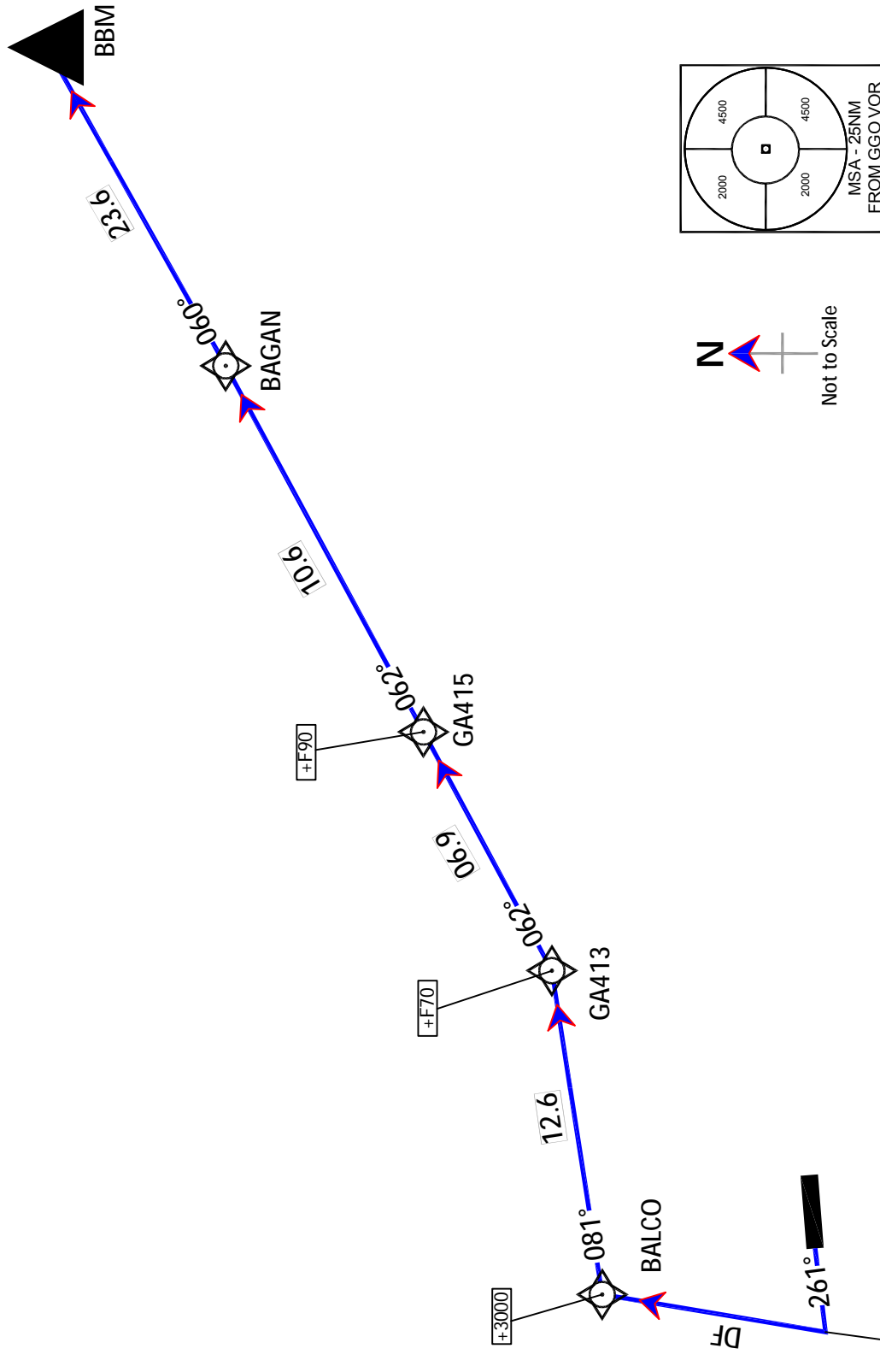


RCF Procedure	SQUAWK Mode A/C code 7600, follow SID with restrictions and climb to FPL cruising level.
Warning	Aircraft to follow SID flight level/speed restrictions unless otherwise authorised by ATC
Note 1	If unable to comply with RNAV SID advice ATC and expect RADAR Vectors or alternate clearance.
Note 2	Minimum climb gradient 7% (425ft/NM) upto 3000Ft.

AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

TWR 118.1
 APP 119.7
 ATIS 126.6

BALCO DEPARTURE
RWY 26
RNAV-1 (GNSS)
RADAR REQUIRED



Co-ordinates are in WGS-84.
 Tracks are magnetic.
 Distance in nautical miles.
 Altitude in feet.

RCF	SQUAWK Mode A/C code 7600, follow SID with restrictions and climb to FPL cruising level.
Procedure	Aircraft to follow SID flight level/speed restrictions unless otherwise authorised by ATC
Warning	If unable to comply with RNAV SID advice ATC and expect RADAR Vectors or alternate clearance.
Note 1	Minimum climb gradient 7% (425ft/NM) upto 3000ft.
Note 2	

MESGA RNAV-1 (GNSS) DEPARTURE RWY26

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Runway Transition Data - RWY26									
10	VA	-	-	261(259)	-	+1000	-	3.3	-
20	DF	GA417	-	-	-	+1500	-		RNAV-1
30	TF	MESGA	-	343(341)	-	+3000	-	5.3	RNAV-1
Enroute Transition Data - PEKSO									
10	IF	MESGA	-	-	-	-	-	-	-
20	TF	GA383	-	020(018)	-	+F80/-F90	-	34.0	RNAV-1
30	TF	PEKSO	-	019(017)	-	-	-	13.3	RNAV-1
Enroute Transition Data - TUPUL									
10	IF	MESGA	-	-	-	-	-	-	-
20	TF	TUPUL	-	335(333)	-	+F100	-	54.1	RNAV-1
30	TF	OKILA	-	332(330)	-	-	-	23.1	RNAV-1

PABLU RNAV-1 (GNSS) DEPARTURE RWY26

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Runway Transition Data RWY26									
10	VA	-	-	261(259)	-	+1000	-	3.3	RNAV-1
20	DF	GA417	-	262(260)	-	+1500	-		RNAV-1
30	TF	PABLU	-	174(172)	-	+3000	-	5.1	RNAV-1
Enroute Transition Data - GUPOL									
10	IF	PABLU	-	-	-	-	-	-	-
20	TF	GA421	-	152(150)	-	+F95	-	26.0	RNAV-1
30	TF	HORAT	-	156(154)	-	-	-	19.7	RNAV-1
Enroute Transition Data - VETOL									
10	IF	PABLU	-	-	-	-	-	-	-
20	TF	GA419	-	108(106)	-	+F95	-	20.3	RNAV-1
30	TF	VETOL	-	109(107)	-	-	-	30.8	RNAV-1

BALCO RNAV-1 (GNSS) DEPARTURE RWY26

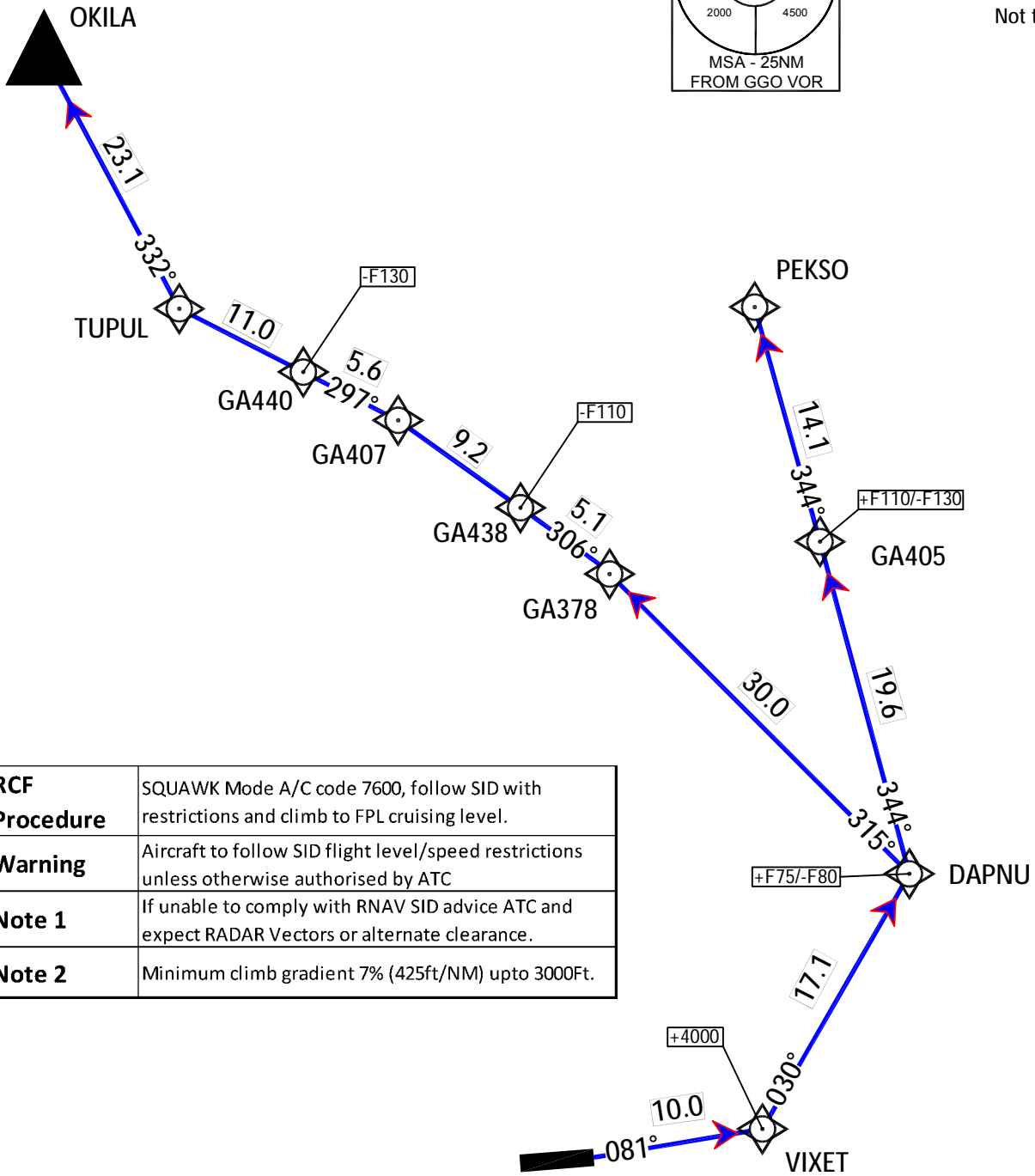
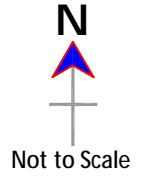
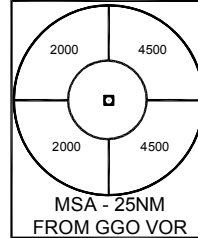
Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Runway Transition Data RWY26									
10	VA	-	-	261(259)	-	+1000	-	7.9	RNAV-1
20	DF	BALCO	-	-	-	+3000	-		RNAV-1
Enroute Transition Data - BBM									
10	IF	BALCO	-	-	-	-	-	-	-
20	TF	GA413	-	081(079)	-	+F70	-	12.6	RNAV-1
30	TF	GA415	-	062(060)	-	+F90	-	6.9	RNAV-1
40	IF	BAGAN	-	062(060)	-	-	-	10.6	RNAV-1
50	TF	BBM	-	060(058)	-	-	-	23.6	RNAV-1

AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

TWR	118.1
APP	119.7
ATIS	126.6

DAPNU DEPARTURE
 RWY 08
 RNAV-1 (GNSS)
 RADAR REQUIRED

Co-ordinates are in WGS-84.
 Tracks are magnetic.
 Distance in nautical miles.
 Altitude in feet.



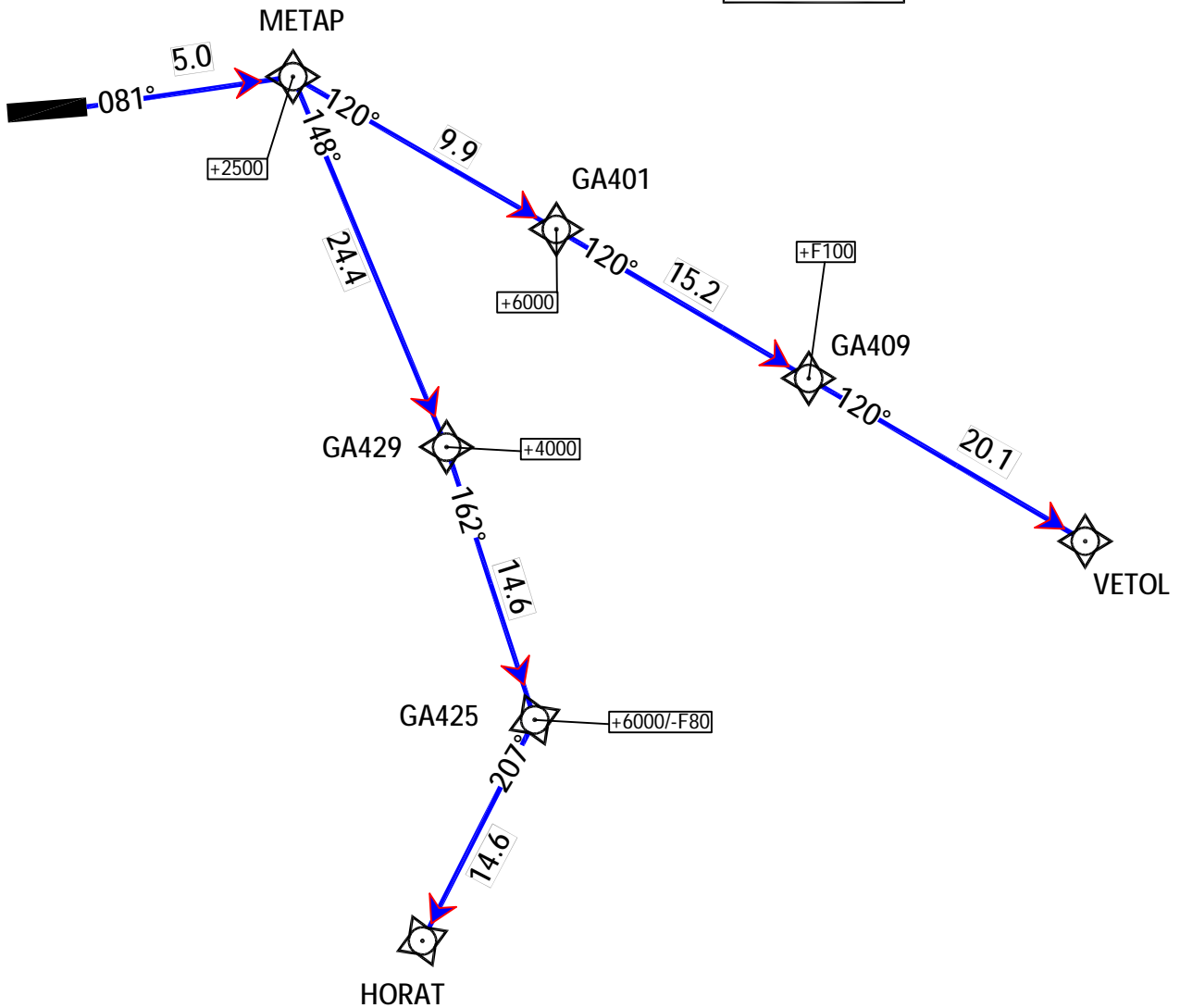
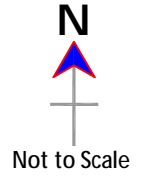
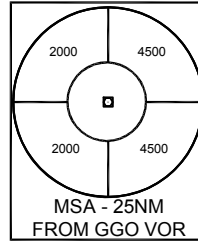
RCF Procedure	SQUAWK Mode A/C code 7600, follow SID with restrictions and climb to FPL cruising level.
Warning	Aircraft to follow SID flight level/speed restrictions unless otherwise authorised by ATC
Note 1	If unable to comply with RNAV SID advice ATC and expect RADAR Vectors or alternate clearance.
Note 2	Minimum climb gradient 7% (425ft/NM) upto 3000Ft.

AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

TWR	118.1
APP	119.7
ATIS	126.6

METAP DEPARTURE
RWY 08
RNAV-1 (GNSS)
RADAR REQUIRED

Co-ordinates are in WGS-84.
 Tracks are magnetic.
 Distance in nautical miles.
 Altitude in feet.

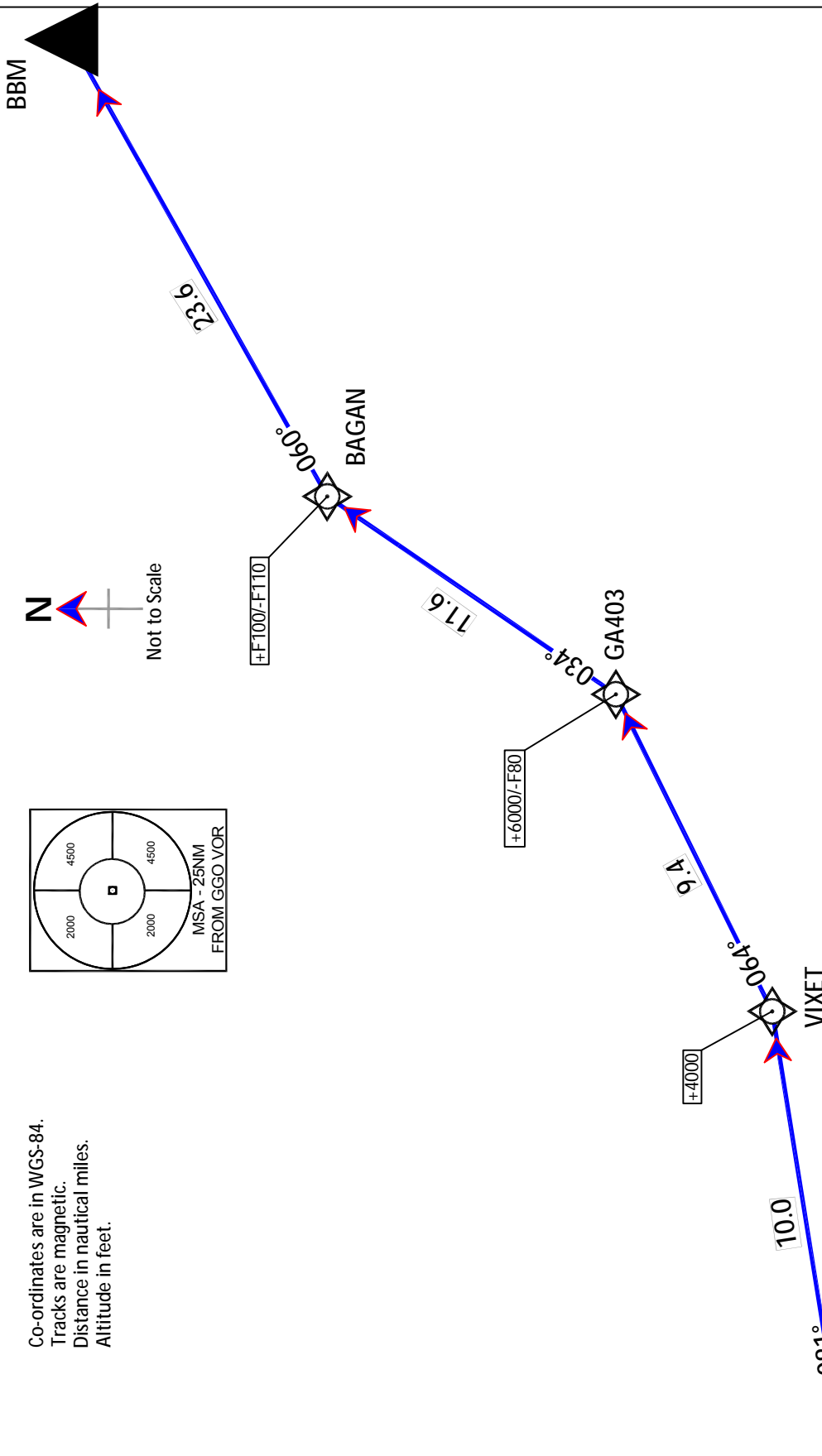


RCF Procedure	SQUAWK Mode A/C code 7600, follow SID with restrictions and climb to FPL cruising level.
Warning	Aircraft to follow SID flight level/speed restrictions unless otherwise authorised by ATC
Note 1	If unable to comply with RNAV SID advice ATC and expect RADAR Vectors or alternate clearance.
Note 2	Minimum climb gradient 7% (425ft/NM) upto 3000Ft.

AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

TWR	118.1
APP	119.7
ATIS	126.6

VIXET DEPARTURE
 RWY 08
 RNAV-1 (GNSS)
RADAR REQUIRED



RCF	SQUAWK Mode A/C code 7600, follow SID with restrictions and climb to FPL cruising level.
Procedure	Aircraft to follow SID flight level/speed restrictions unless otherwise authorised by ATC
Warning	If unable to comply with RNAV SID advise ATC and expect RADAR Vectors or alternate clearance.
Note 1	Minimum climb gradient 7% (425ft/NM) upto 3000ft.
Note 2	

DAPNU RNAV-1 (GNSS) DEPARTURE RWY08

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Runway Transition Data RWY08									
10	VA	-	-	081(079)	-	+1000	-	10.0	-
20	DF	VIXET	-	-	-	+4000	-		RNAV-1
30	TF	DAPNU	-	030(028)	-	+F75	-F80	17.1	RNAV-1
Enroute Transition Data - PEKSO									
10	IF	DAPNU	-	-	-	-	-	-	-
20	TF	GA405	-	344(342)	-	+F110/-F130	-	19.6	RNAV-1
30	TF	PEKSO	-	344(342)	-	-	-	14.1	RNAV-1
Enroute Transition Data - OKILA									
10	IF	DAPNU	-	-	-	-	-	-	-
20	TF	GA378	-	315(313)	-	-	-	30.0	RNAV-1
30	TF	GA438	-	306(304)	-	-F110	-	5.1	RNAV-1
40	TF	GA407	-	306(304)	-	-	-	9.2	RNAV-1
50	TF	GA440	-	297(295)	-	-F130	-	5.6	RNAV-1
60	TF	TUPUL	-	297(295)	-	-	-	11.0	RNAV-1
70	TF	OKILA	-	332(330)	-	-	-	23.1	RNAV-1

METAP RNAV-1 (GNSS) DEPARTURE RWY08

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Runway Transition Data RWY08									
10	VA	-	-	081(079)	-	+1000	-	5.0	-
20	TF	METAP	-	081(079)	-	+2500	-		RNAV-1
Enroute Transition Data - HORAT									
10	IF	METAP	-	-	-	-	-	-	-
20	TF	GA429	-	148(146)	-	+4000	-	24.4	RNAV-1
30	TF	GA425	-	162(160)	-	+6000/-8000	-	14.6	RNAV-1
40	TF	HORAT	-	207(205)	-	-	-	14.6	RNAV-1
Enroute Transition Data - VETOL									
10	IF	METAP	-	-	-	-	-	-	-
20	TF	GA401	-	120(118)	-	+6000	-	9.9	RNAV-1
30	TF	GA409	-	120(118)	-	+F100	-	15.2	RNAV-1
40	TF	VETOL	-	120(118)	-	-	-	20.1	RNAV-1

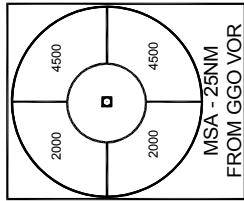
VIXET RNAV-1 (GNSS) DEPARTURE RWY08

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Runway Transition Data RWY08									
10	VA	-	-	081(079)	-	+1000	-	10.0	-
20	TF	VIXET	-	081(079)	-	+4000	-		RNAV-1
Enroute Transition Data - BBM									
10	IF	VIXET	-	-	-	-	-	-	-
20	TF	GA403	-	064(062)	-	+6000/-F80	-	9.4	RNAV-1
30	TF	BAGAN	-	034(035)	-	+F110/-F130	-	11.6	RNAV-1
40	TF	BBM	-	060(058)	-	-	-	23.6	RNAV-1

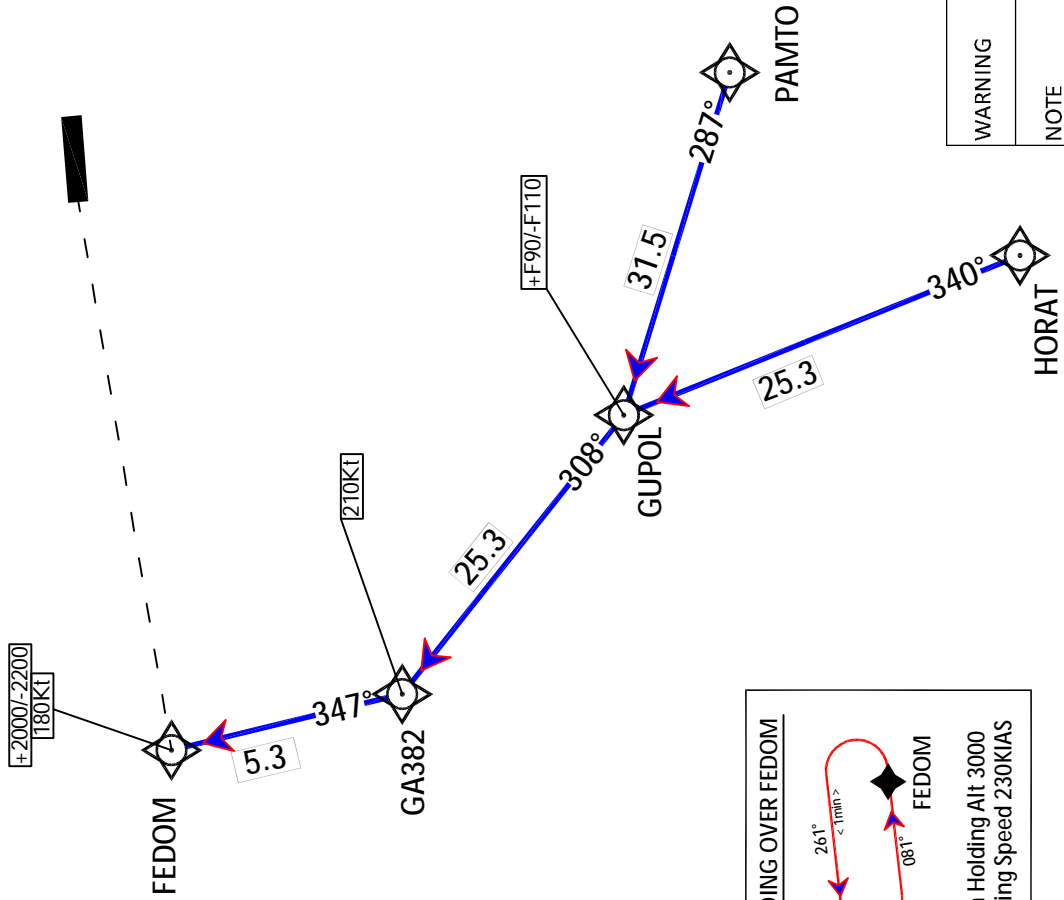
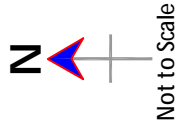
AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

TWR	118.1
APP	119.7
ATIS	126.6

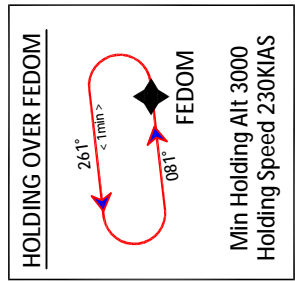
GUPOL ARRIVAL
RWY08
RNAV-1 (GNSS)
RADAR REQUIRED



Co-ordinates are in WGS-84.
 Tracks are magnetic.
 Distance in nautical miles.
 Altitude in feet.



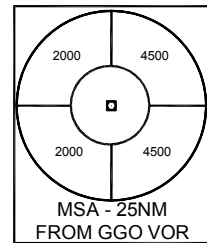
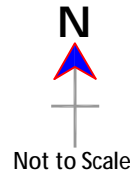
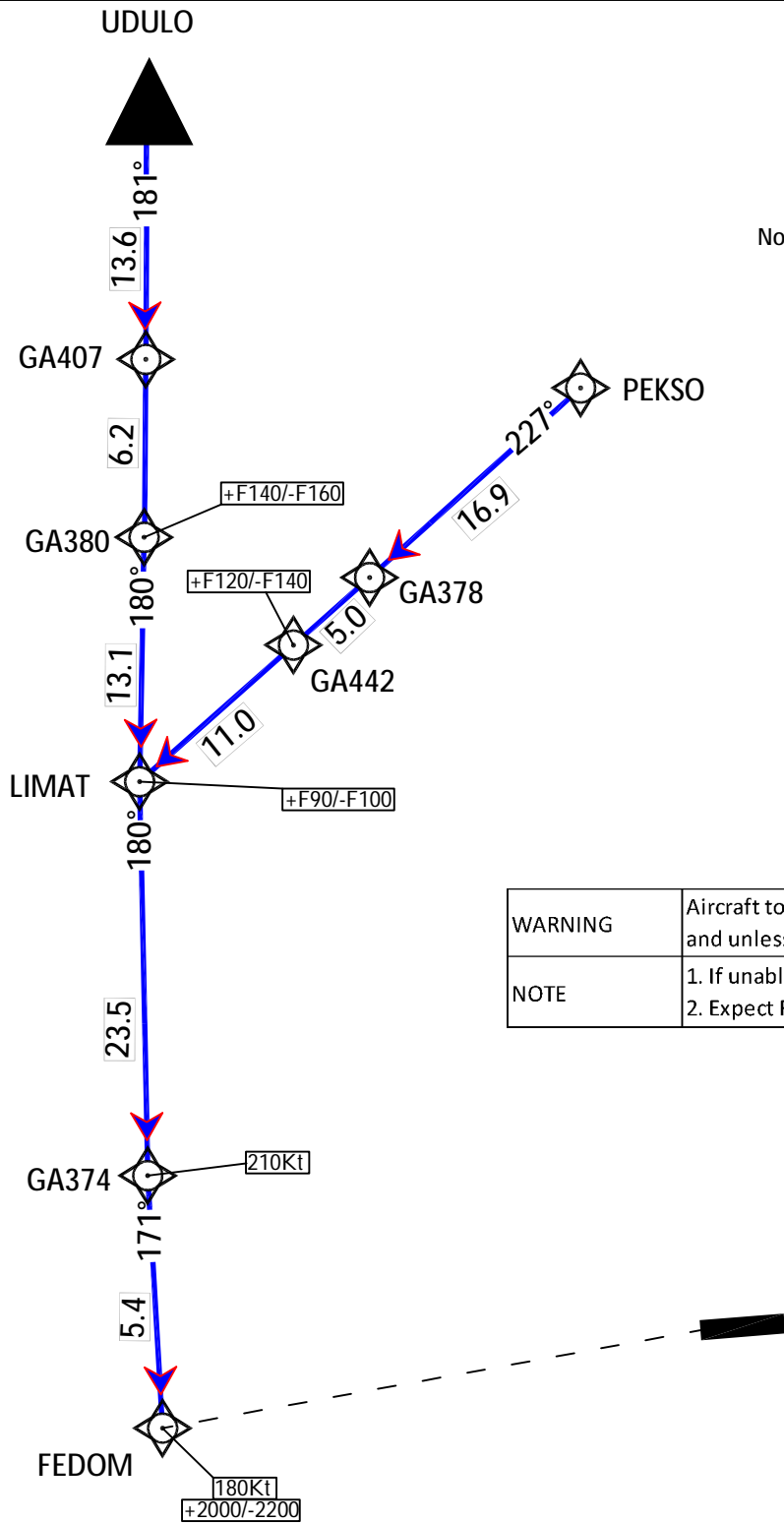
WARNING	Aircraft to follow STAR flight level/speed restrictions and unless otherwise authorised by ATC
NOTE	1. If unable to comply with RNAV STAR advice ATC. 2. Expect Radar Vectors at the end of STAR.



AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

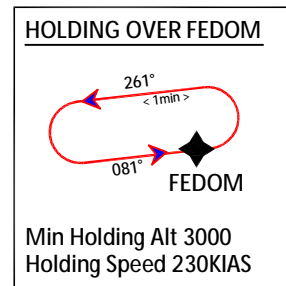
TWR	118.1
APP	119.7
ATIS	126.6

LIMAT ARRIVAL
RWY08
RNAV-1 (GNSS)
RADAR REQUIRED



Co-ordinates are in WGS-84.
 Tracks are magnetic.
 Distance in nautical miles.
 Altitude in feet.

WARNING	Aircraft to follow STAR flight level/speed restrictions and unless otherwise authorised by ATC
NOTE	1. If unable to comply with RNAV STAR advice ATC. 2. Expect Radar Vectors at the end of STAR.



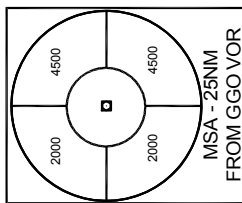
AD Elev 187
 Tran Alt. 6000
 Var 2°00'W (2010)

TWR	118.1
APP	119.7
ATIS	126.6

FEDOM ARRIVAL
 RWY08
 RNAV-1 (GNSS)
 RADAR REQUIRED

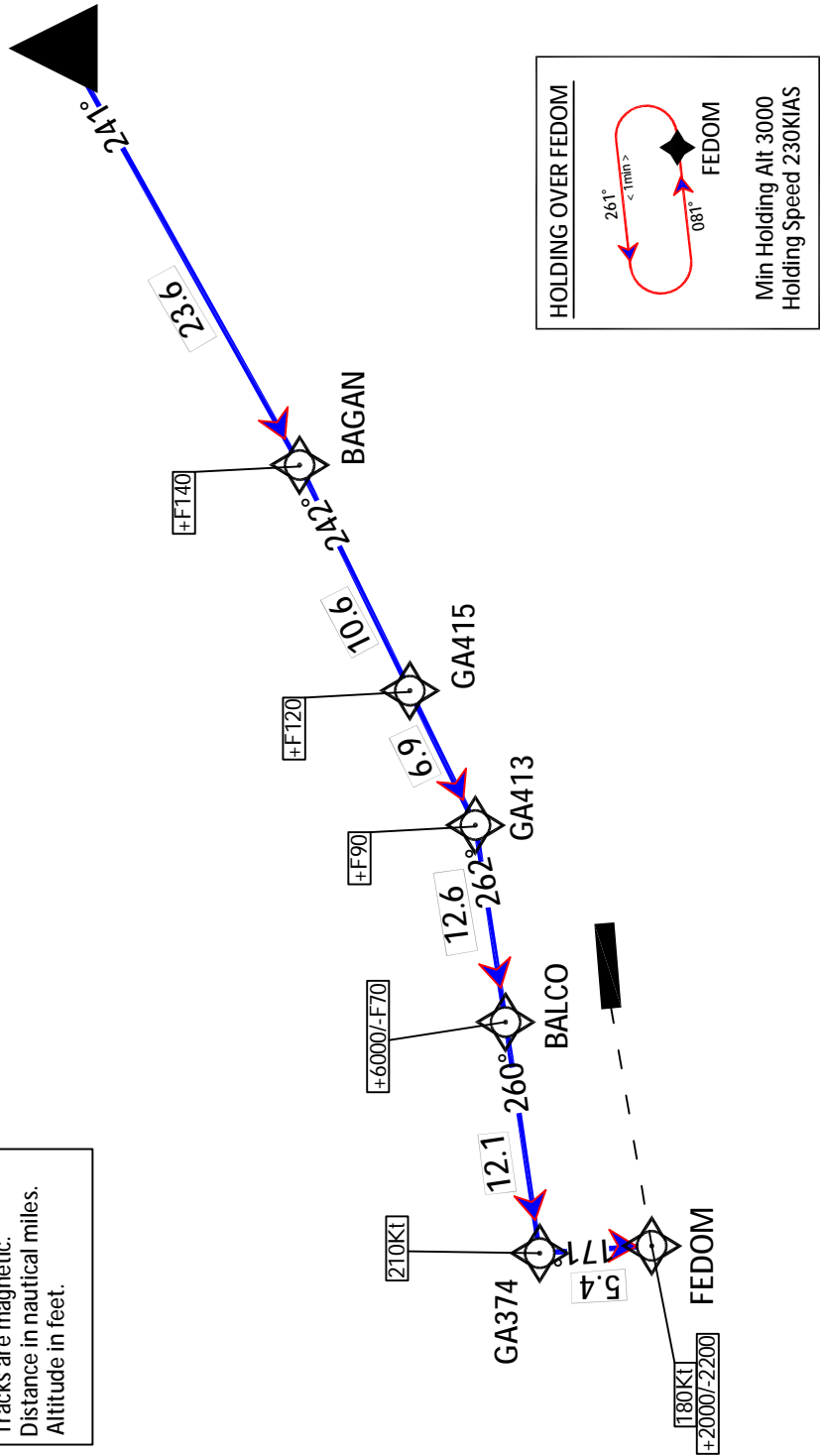
WARNING	Aircraft to follow STAR flight level/speed restrictions and unless otherwise authorised by ATC
NOTE	1. If unable to comply with RNAV STAR advise ATC. 2. Expect Radar Vectors at the end of STAR.

BBM



Not to Scale

Co-ordinates are in WGS-84.
 Tracks are magnetic.
 Distance in nautical miles.
 Altitude in feet.



GUPOL RNAV-1 (GNSS) ARRIVAL RWY08

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Enroute Transition - HORAT									
10	IF	HORAT	-	-	-	-	-	-	-
20	TF	GUPOL	-	340(338)	-	+F90/-F110	-	25.3	RNAV-1
Enroute Transition - PAMTO									
10	IF	PAMTO	-	-	-	-	-	-	-
20	TF	GUPOL	-	287(285)	-	+F90/-F110	-	31.5	RNAV-1
Runway Transition Data - RWY08									
10	IF	GUPOL	-	-	-	-	-	-	-
20	TF	GA382	-	308(306)	-	-	210	25.3	RNAV-1
30	TF	FEDOM	-	347(345)	-	+2000/-2200	180	5.3	RNAV-1

LIMAT RNAV-1 (GNSS) ARRIVAL RWY08

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Enroute Transition - PEKSO									
10	IF	PEKSO	-	-	-	-	-	-	-
20	TF	GA378	-	227(225)	-	-	-	16.9	RNAV-1
30	TF	GA442	-	227(225)	-	+F120/-F140	-	5.0	RNAV-1
40	TF	LIMAT	-	227(225)	-	+F90/-F100	-	11.0	RNAV-1
Enroute Transition - UDULO									
10	IF	UDULO	-	-	-	-	-	-	-
20	TF	GA407	-	181(179)	-	-	-	13.6	RNAV-1
30	TF	GA380	-	181(179)	-	+F140/-F160	-	6.2	RNAV-1
40	TF	LIMAT	-	181(179)	-	+F90/-F100	-	13.1	RNAV-1
Runway Transition Data - RWY08									
10	IF	LIMAT	-	-	-	-	-	-	-
20	TF	GA374	-	180(178)	-	-	210	23.5	RNAV-1
30	TF	FEDOM	-	171(169)	-	+2000/-2200	180	5.4	RNAV-1

FEDOM RNAV-1 (GNSS) ARRIVAL RWY08

Leg No	Path Descriptor	Fix Identifier (Waypoint Name)	Fly Over	Course M (T)	Turn Direction	Altitude	Speed Limit	Distance	Navigation Specification
Enroute Transition - PEKSO									
10	IF	BBM	-	-	-	-	-	-	-
20	TF	BAGAN	-	241(2390)	-	+F140	-	23.6	RNAV-1
Runway Transition Data - RWY08									
10	IF	BAGAN	-	-	-	-	-	-	-
20	TF	GA415	-	242(240)	-	+F120	-	10.6	RNAV-1
30	TF	GA413	-	242(240)	-	+F90	-	6.9	RNAV-1
40	TF	BALCO	-	262(260)	-	+6000/-F70	-	12.6	RNAV-1
50	TF	GA374	-	260(258)	-	-	210	12.1	RNAV-1
60	TF	FEDOM	-	171(169)	-	+2000/-2200	180	5.4	RNAV-1