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



**K. RAMALINGAM**  
 CHAIRMAN

**AIRPORTS AUTHORITY OF INDIA**

[Effective from 0803280001]

Standard Instrument Departure Procedures (SIDs) (Non-RNAV) – BIAL  
 (RWY 09/ 27)

I. General

- (i) The SIDs have been developed as per provisions DOC 8168, Vol II.
- (ii) Track guidance has been provided until the interception of nominal track of the flight plan route. VOR DME (112.3 BIA), VOR DME (115.5 BBG), VOR DME (114.2 MML) and DME Arc have been used for this purpose appropriately.
- (iii) All radials and distances have been specified with reference to BIAL VOR DME (13°12'23.39" N 077° 43' 51.25" E) unless specified otherwise.
- (iv) The coordinates of the SID designator and transitional fixes have been provided in WGS-84 system to facilitate the aircraft equipped with RNAV capability.
- (v) The following significant points have been established as SID designators.

S.NO	NAME	RADIAL/ DISTANCE(NM) VOR DME (BIA)	WGS-84 COORDIANTES	ATS ROUTES
1.	LATID	R-012/77	*14° 28' 34.6" N 77° 56' 55.5" E	W57N

2.	ANIRO	R-048/71	*14° 02' 09.8" N 78° 36' 30.2" E	W47N
3.	TEBAM	R-111/45	*12° 57' 58.1" N 78° 27' 51.3" E	W116
4.	OMUKA	R-190/40	12° 32' 32.35" N 77° 38' 41.31" E	W42S, W43S, W118S
5.	MANGALORE VOR DME	-	*12° 57' 43.0" N 74° 55' 17.9" E	W81
6.	GUNAS	R-294/137	*14° 02' 4.7" N 75° 32' 56.6" E	W101W
7.	OLREB	R-338/50	13° 58' 10.17" N 77° 22' 46.30" E	W56N
8.	APGUN	R-190/69	12° 03' 39.94" N 77° 34' 57.76" E	W42S, W43S, W118S

- Coordinates as published in AIP India

- (vi) Vertical restriction upto 7000 feet has been specified for each SID separately. All aircraft will maintain 7000 feet as specified in the SIDs and thereafter, further climb shall be authorised by ATC. However, ATC at its discretion may further impose or relax the vertical restriction in order to expedite the climb or descent of traffic.
- (vii) After departure, aircraft following the SID may be instructed by Radar Controller to cancel SID and proceed on a specified heading to resolve the traffic or to expedite the climb.
- (viii) The minimum climb gradient of 7.25% (440 ft / NM) shall be maintained until passing 7000 feet and thereafter resume normal climb gradient 3.3%.
- (ix) Radio Communication Failure (RCF) Procedure
- Transponder equipped aircraft shall squawk 7600.**
  - Pilot Navigation SIDs**  
On the recognition of communication failure maintain 7000 ft or the level assigned by ATC, whichever is higher until 25 DME (BIA). Thereafter, climb to flight plan level and continue to follow the SID until termination point. If the communication failure takes place beyond 25 DME continue to follow the SID, maintain the last assigned level by ATC, if any, or climb to FL85 whichever is higher, for 2 minutes and then climb to flight plan level.
  - When under Radar Vector**  
On the recognition of failure proceed as follows :-
    - inside 15 DME (BIA) maintain last assigned heading until 20 DME, climb to 7000 feet or the level assigned by ATC whichever is higher. After 20 DME climb to FL85 or the last level assigned by ATC whichever is higher and proceed directly to intercept the flight plan route.
    - at or beyond 15DME (BIA) maintain last assigned heading for 2 minute, climbing to FL85 or the last level assigned by ATC whichever is higher. Then proceed directly to intercept the flight plan route.
    - five minutes after recognition of failure commence climb to flight plan level.

2. Standard Instrument Departure Procedure Rwy 27 – BIAL (Non-RNAV)

NOTE

(i) Climb above 7000 feet shall be specified by ATC.

(ii) Minimum climb gradient 7.25% (440 ft/NM) until 7000 feet due traffic operating at Yelahanka Airfield.

S.No	ATS ROUTES	SID DESIGNATOR	SID DESCRIPTION	REMARKS
(i)	W 116	TEBAM 1	Climb on heading 285 to 5000 feet. turn right on track 140 Deg M (R-320) climbing to 7000 feet. Then proceed to TEBAM via R-111(BIA) to join W116 outbound.	Arrange to reach 7000 feet by VOR (BIA).
ii)	W42S	APGUN 1	Climb on heading 285 to 7000 feet, then turn left track 144 Deg M (R-324 ) to VOR (BBG). Then turn right to intercept R-190 (BIA) to APGUN, then on track 142 Deg M (R-322) to Trichy VOR (TTR) to join W42S outbound.	Cross 7D (BIA) at 5000 feet or below.
(iii)	W43S/W118S	OMUKA 1	Climb on heading 285 to 7000 feet, then turn left track 144 Deg M (R-324) to VOR (BBG). Then turn right to intercept R-190 (BIA) to OMUKA to join W43S/W118S outbound.	Cross 7D (BIA) at 5000 feet or below.
(iv)	W101W	GUNAS 1	Climb on Hdg 285 Deg M to 7000 feet, then turn right to intercept R-294 (BIA) to GUNAS to join W101W outbound.	Cross 7D (BIA) at 5000 feet or below.  Availability subject to clearance from ATC Yelahanka.
(v)	W56N	OLREB 1	Climb on heading 285 to 5000 feet, then turn right to intercept DME arc of radius 11D climbing 7000 feet. Then turn left to intercept R-338 (BIA) to OLREB to join W56N outbound.	

(vi)	W57N	LATID 1	Climb on heading 285 to 5000 feet, then turn right to intercept DME arc of radius 11D climbing 7000 feet. Then turn left to intercept R-012 (BIA) to LATID to join W57N outbound.	
(vii)	W47N	ANIRO 1	Climb on heading 285 to 5000 feet, then turn right to intercept DME arc of radius 11D climbing 7000 feet. Then turn left to intercept R-048 (BIA) to ANIRO to join W47N outbound.	
(viii)	W81	MANGALORE 1A	Climb on track 285 Deg M to 7000 feet, then turn left to intercept R-268 (BIA) to MANGALORE VOR (MML) to join W81 outbound.	Cross 7D (BIA) at 5000 feet or below.  Availability subject to clearance from ATC Yelahanka.
	W81	MANGALORE 1	Climb on heading 285 to 5000 feet, turn right on track 140 Deg M (R-320) to VOR (BIA). Then on track 192 Deg M (R-012) to VOR (BBG). Then on track 272 Deg M (R-272 BBG) to MANGALORE VOR (MML).	Arrange to reach 7000 feet by VOR (BIA).

3. Standard Instrument Departure Procedure Rwy 09 – BIAL (Non-RNAV)

NOTE

- (i) Climb above 7000 feet shall be specified by ATC.
- (ii) Minimum climb gradient 7.25%(440 ft/NM) until 7000 feet due traffic operating at Yelahanka Airfield.

S.No	ATS ROUTES	SID DESIGNATOR	SID DESCRIPTION	REMARKS
(i)	W116	TEBAM 2	Climb straight ahead to 7000 feet, turn right heading 130 to intercept R-111 (BIA) to TEBAM to join W116 outbound.	
ii)	W42S	APGUN 2	Climb straight ahead to 7000 feet, turn right on track 233 Deg M (R-053) to VOR (BBG). Then turn left to intercept R-190 (BIA) to APGUN. Then on track 142 Deg M (R-322) to Trichy VOR (TTR) to join W42S outbound.	
(iii)	W43S/W118S	OMUKA 2	Climb straight ahead to 7000 feet, turn right on track 233 Deg M (R-053) to VOR (BBG). Then turn left to intercept R-190 (BIA) to OMUKA to join W43S/W118S outbound.	From OMUKA proceed via APGUN to COIMBATORE VOR.
(iv)	W101W	GUNAS 2	Climb straight ahead to 7000 feet, turn right on track 310 Deg M (R-130) to VOR (BIA) then intercept R-294 (BIA) to GUNAS to join W101W outbound.	
(v)	W56N	OLREB 2	Climb straight ahead to 4000 feet, then turn left heading 285 climbing to 7000 feet to intercept R-338 (BIA) to OLREB to join W56N outbound.	

(vi)	W57N	LATID 2	Climb straight ahead to 4000 feet, then turn left heading 325 climbing to 7000 feet to intercept R-012 (BIA) to LATID to join W57N outbound.	
(vii)	W47N	ANIRO 2	Climb straight ahead to 4000 feet, then turn left heading 020 climbing to 7000 feet to intercept R-048 (BIA) to ANIRO to join W47N outbound.	
(viii)	a) W81	MANGALORE 2A	Climb straight ahead to 7000 feet, turn right on track 310 Deg M (R-130) to VOR (BIA) then intercept R-268 (BIA) to MANGALORE VOR (MML) to join W81 outbound.	Availability subject to clearance from ATC Yelhanaka.
	b) W81	MANGALORE 2	Climb straight ahead to 7000 feet, turn right on track 233 Deg M (R-053) to VOR (BBG). Then turn right to intercept R-272 (BBG) to MANGALORE VOR (MML)	

STANDARD DEPARTURE CHART  
INSTRUMENT(SID) (NON-RNAV)

TRANSITION ALTITUDE  
7000

TWR	124.35
APP(ARR)	121.25
APP(DEP)	127.75
TAR	119.45

BANGALORE INTERNATIONAL/INDIA  
RWY 27  
ANRD 1 LATID 1, DLREB 1, GUNAS 1

DRARD  
R-230/91  
N 14 25 244.00  
E 77 05 25.90

MSA  
180°-025°  
5900 25 NM

DLREB  
R-230/50  
N 13 28 10.17  
E 77 02 44.30

LATID  
R-012/77  
N 14 08 34.6  
E 77 56 55.5

MSA  
025°-180°  
5500 25 NM  
ANRD  
R-040/71  
N 14 02 9.8  
E 78 36 30.2

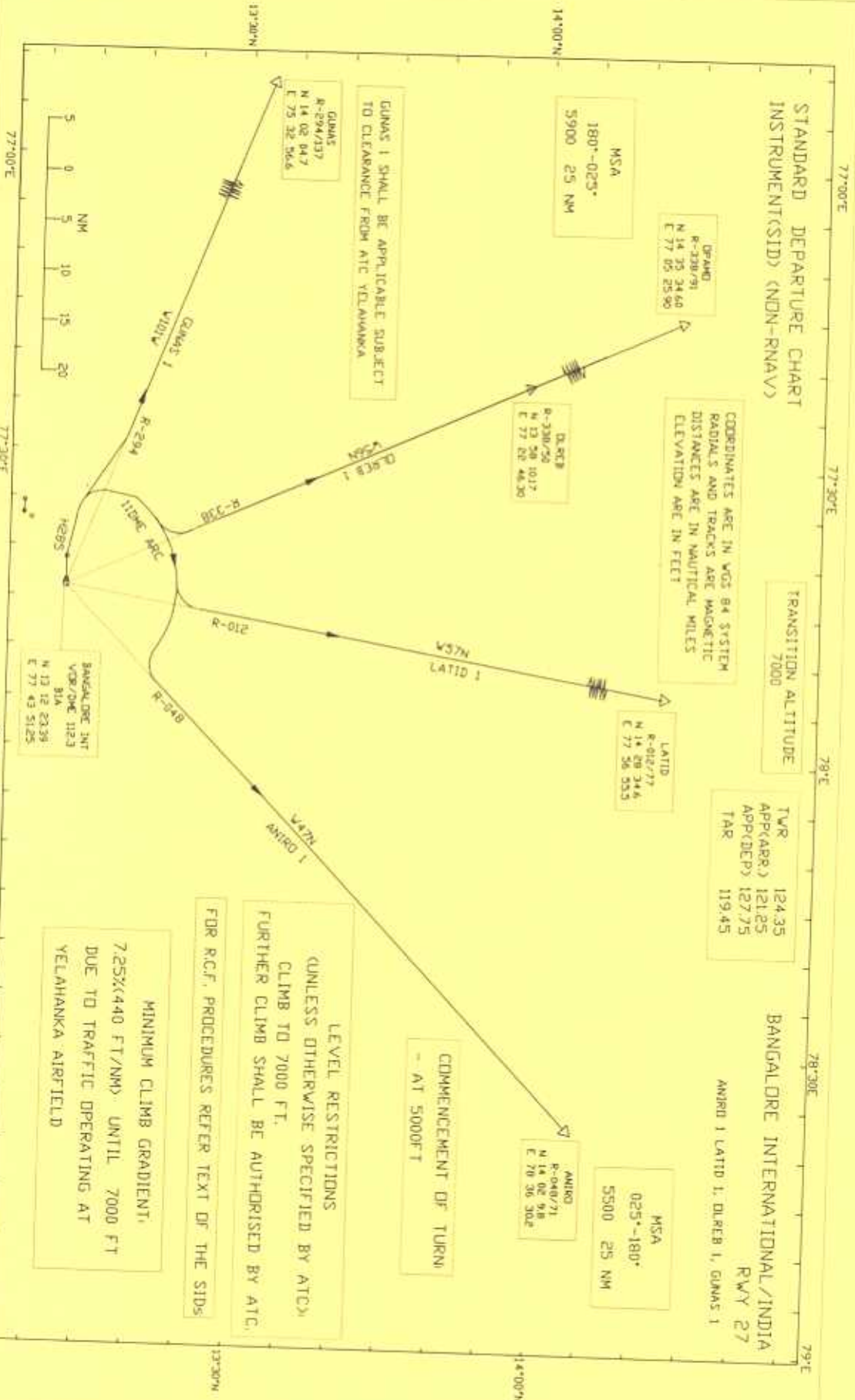
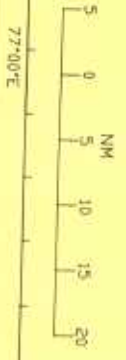
GUNAS  
R-294/137  
N 14 02 04.7  
E 75 32 56.6

LEVEL RESTRICTIONS  
UNLESS OTHERWISE SPECIFIED BY ATIS,  
CLIMB TO 7000 FT.  
FURTHER CLIMB SHALL BE AUTHORIZED BY ATIS.

COMMENCEMENT OF TURN  
- AT 5000FT

FOR R.C.F. PROCEDURES REFER TEXT OF THE SIDS  
MINIMUM CLIMB GRADIENT,  
7.25%(440 FT/NM) UNTIL 7000 FT  
DUE TO TRAFFIC OPERATING AT  
YELAHANKA AIRFIELD

COORDINATES ARE IN WGS 84 SYSTEM  
RADIALS AND TRACKS ARE MAGNETIC  
DISTANCES ARE IN NAUTICAL MILES  
ELEVATION ARE IN FEET



STANDARD DEPARTURE CHART  
INSTRUMENT (SID) (NON-RNAV)

TRANSITION ALTITUDE  
7000

TWR 12435  
APP(ARR) 12125  
APP(DEP) 12775  
TAR 11945

BANGALORE INTERNATIONAL/INDIA  
RWY 27

TEBAM I, MANGALDRE I, MANGALDRE 1A  
DMUKA 1, APGUN I

COORDINATES ARE IN WGS 84 SYSTEM  
RADIALS AND TRACKS ARE MAGNETIC  
DISTANCES ARE IN NAUTICAL MILES  
ELEVATION ARE IN FEET

MSA  
180°-025°  
5900 25 NM

R-268(BIA) M MANGALDRE 1A  
TO MANGALDRE  
VOR/DME

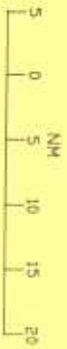
MANGALDRE 1A SHALL BE APPLICABLE SUBJECT  
TO CLEARANCE FROM ATC YELAHANKA

MANGALDRE  
VOR/DME 1142  
M M  
N 12 27 43.0  
E 74 55 17.9

LEVEL RESTRICTIONS

(UNLESS OTHERWISE SPECIFIED BY ATC)  
CLIMB TO 7000 FT.  
CROSS 7D AT 5000FT OR BELOW  
FURTHER CLIMB SHALL BE AUTHORIZED BY ATC

MINIMUM CLIMB GRADIENT  
7.25%(440 FT/NM) UNTIL PASSING 7000 FT  
DUE TO TRAFFIC OPERATING AT  
YELAHANKA AIRFIELD



COMBATORE  
VOR/DME 11279  
C C  
N 11 02 01.6  
E 77 02 50.0

TRICHY  
VOR/DME 11311  
T T  
N 10 45 44.7  
E 78 42 48.2



BANGALORE (GAL)  
VOR/DME 1155  
M M  
N 12 54 59.1  
E 77 40 51.6

BANGALORE INT  
VOR/DME 1123  
R R  
N 13 12 23.9  
E 77 43 51.25

DMUKA  
R-190/40  
N 12 32 32.25  
E 77 38 41.31

APGUN  
R-190/69  
N 12 03 39.9400  
E 77 34 57.7600

TEBAM  
R-111/45  
N 12 57 58.1  
E 78 27 51.3

COMMENCEMENT OF TURN  
- AT 5000FT  
MANGALDRE 1A, APGUN 1, DMUKA 1  
- AT 7000 FT

FOR RCF PROCEDURES REFER TEXT OF THE SIDS



STANDARD DEPARTURE CHART  
INSTRUMENT(SID) (NDN-RNAV)

TRANSITION ALTITUDE  
7000

TUR 124.35  
APP/ARR> 121.25  
APP/DEP> 127.75  
TAR 119.45

BANGALORE INTERNATIONAL/INDIA  
RWY 09

ANIRD 2, LATID 2, DLREB 2, GUNAS 2

COORDINATES ARE IN WGS 84 SYSTEM  
RADIALS AND TRACKS ARE MAGNETIC  
DISTANCES ARE IN NAUTICAL MILES  
ELEVATION ARE IN FEET

M S A  
180°-025°  
5900 25NM

M S A  
025°-180°  
5500 25NM

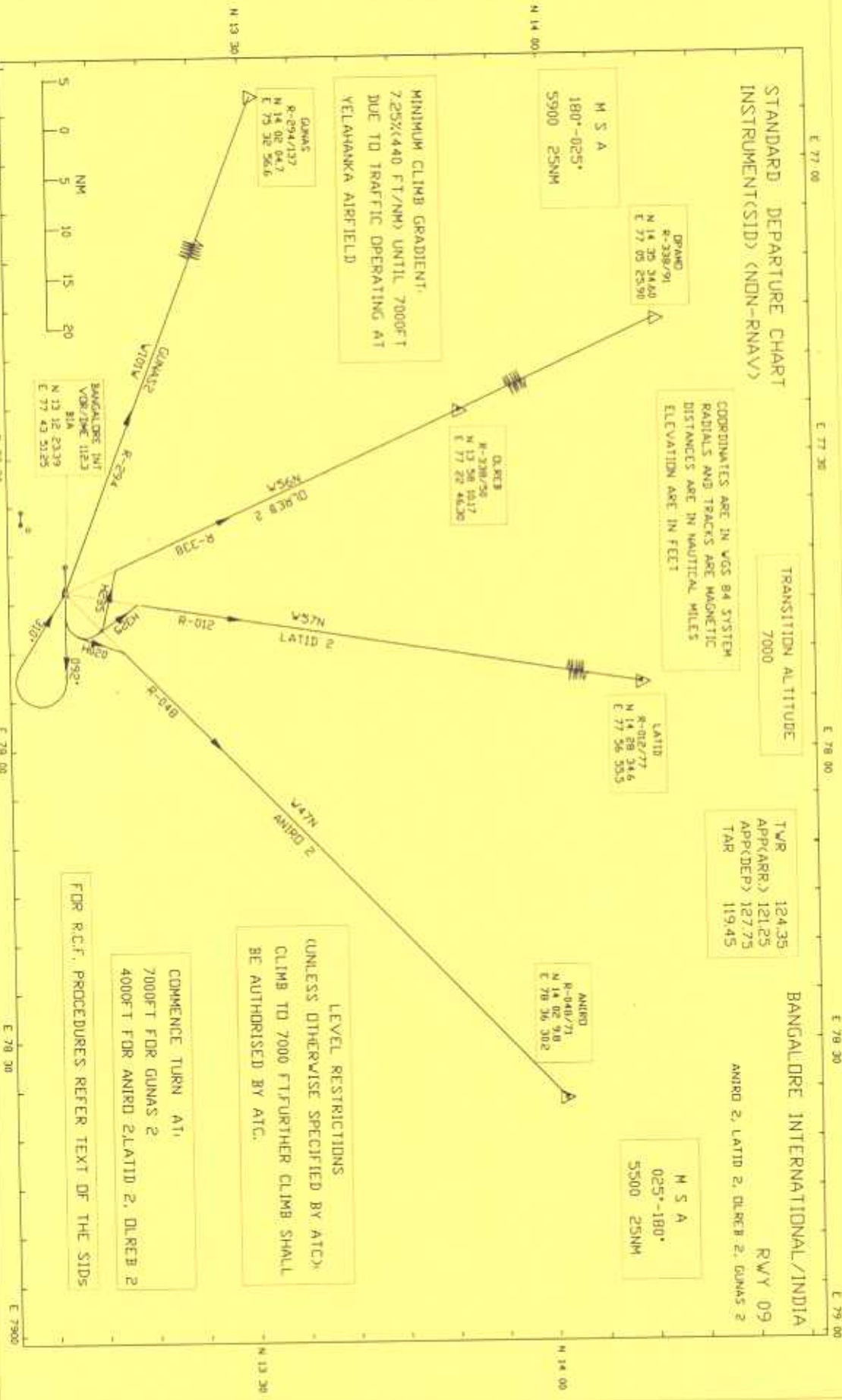
MINIMUM CLIMB GRADIENT:  
7.25%(440 FT/NM)  
DUE TO TRAFFIC OPERATING AT  
YELAHANKA AIRFIELD

LEVEL RESTRICTIONS  
(UNLESS OTHERWISE SPECIFIED BY ATIS)  
CLIMB TO 7000 FT/FURTHER CLIMB SHALL  
BE AUTHORISED BY ATIS.

COMMENCE TURN AT:  
7000FT FOR GUNAS 2  
4000FT FOR ANIRD 2,LATID 2, DLREB 2

FOR R.C.F. PROCEDURES REFER TEXT OF THE SIDS

BANGALORE INT  
VOR/DME (112.3)  
MHA 814  
N 13 12 23.39  
E 77 43 51.25



STANDARD DEPARTURE CHART  
INSTRUMENT(SID) (IND-RNAV)

COORDINATES ARE IN WGS 84 SYSTEM  
RADIALS AND TRACKS ARE MAGNETIC  
DISTANCES ARE IN NAUTICAL MILES  
ELEVATION ARE IN FEET

TRANSITION ALTITUDE  
7000

TWR 124.35  
APP(GARR) 121.25  
APP(DDP) 127.75  
TAR 119.45

BANGALORE INTERNATIONAL/INDIA  
RWY 09

TEBAM 2, DHUKA 2  
APQUN 2, MANGALDRE 2  
MANGALDRE 2A

MSA  
180°-025°  
5900 25 NM

MANGALDRE 2A SHALL BE APPLICABLE SUBJECT  
TO CLEARANCE FROM YELAHANKA ATC

MANGALDRE  
VOR/DME 114.2  
MNL  
N 12 27 43.0  
E 74 55 17.0

MANGALDRE(DUAL)  
VOR/DME 112.3  
N 12 56 59.1  
E 77 46 51.6

COMMENCE TURN AT 7000FT

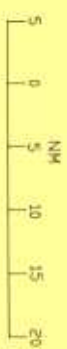
MSA  
025°-180°  
5500 25 NM

TEBAM  
R-111/45  
N 16 57 24.1  
E 78 27 51.3

LEVEL RESTRICTIONS:  
UNLESS OTHERWISE SPECIFIED BY ATIS  
CLIMB TO 7000FT.  
FURTHER CLIMB SHALL BE AUTHORIZED BY ATIS

FOR R.C.F. PROCEDURES REFER TEXT OF THE SIDS

MINIMUM CLIMB GRADIENT:  
7.25%/440 FT/NM) UNTIL PASSING 7000FT  
DUE TO TRAFFIC OPERATING AT  
YELAHANKA AIRFIELD



COMBATDRE  
VOR/DME 112.9  
CCB  
N 11 02 01.5  
E 77 02 53.2

TRICHY  
VOR/DME 113.1  
TTR  
N 10 45 44.7  
E 78 42 49.2

APQUN  
R-190/69  
N 22 03 39.94  
E 77 24 57.76

DHUKA  
R-190/45  
N 12 32 32.25  
E 77 38 41.21

DHUKA 2  
VOR/DME 112.9  
SCM  
N 11 02 01.5  
E 77 02 53.2

