AD 2. AERODROMES

VIDP AD 2.1 AERODROME LOCATION INDICATOR AND NAME

VIDP - DELHI / INTERNATIONAL

VIDP AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1.	ARP coordinates and site at AD	283407.42N 0770643.69E 117^0 /321M from intersection RWY 09/27 and 15/33	
2.	Direction and distance from (city)	BRG 228^0 /15KM from Delhi railway station.	
3.	Elevation/Reference temperature	237.1M (777FT)/ 41^0C	
4.	MAG VAR/Annual change	0.25^0E(1985)/ 0.02 increasing.	
5.	AD Administration, VEPT Address, telephone, Telefax, telex, AFS	Chief operating Officer Delhi international Airport Private Limited, IGI Airport, New Delhi – 110037.	
		Tele	011-25696579
		EAPBX	011-25675126 Ext 2206
		Fax	011-25675456
		Sita	DELOPXH
		E_mail	Andrew.Harrison@gmrgroup.co.in
		Web	www.newdelhiairport.in
6.	Types of traffic permitted (IFR/VFR)	VFR/IFR	
7.	Remarks	Btn 0330-0530 UTC daily General Aviation and Military acft including Helicopters are not permitted to operate. Only VIP & Sked flts are permitted. All international Non-Sked flights shall obtain night parking approval from flight data unit, DIAL (flight.data@gmrgroup.co.in) at least 5 days in advance and shall arrange Tow Bar themselves.	

VIDP AD 2.3 OPERATIONAL HOURS

1.	AD Administration	MON-FRI : 0400-1200UTC (0930-1730IST) SAT: 0400-0730UTC (0930-1300IST) SUN+HOL : NIL
2.	Custom and immigration	H-24
3.	Health and sanitation	H-24
4.	AIS Briefing office	H-24
5.	ATS Reporting Office(ARO)	H-24
6.	MET Briefing office	H-24
7.	ATS	H-24
8.	Fuelling	H-24
9.	Handling	H-24
10.	Security	H-24
11.	De-icing	Nil
12.	Remarks	Nil

VIDP AD 2.4 HANDLING SERVICES AND FACILITIES

1.	Cargo-handling facilities	Upto B747	
2.	Fuel/oil types	Jet A1, AVTUR, AVGAS, 100LL/Oil :All types	
3.	Fuelling facilities/capacity	Hydrant: Discharge Rate 67 Liters/ Sec	
		Refullers	45000 Liters, 33 Liters/Sec
			27000 Liters, 25 Liters/Sec
			16000 Liters, 17 Liters/Sec
			10000 Liters, 12 Liters/Sec
			6000 Liters, 10 Liters/Sec
4.	De-icing facilities	Nil	
5.	Hanger space for visiting aircraft	Nil	
6.	Repair facilities for visiting aircraft	Nil	
7.	Remarks	Nil	

VIDP AD 2.5 PASSENGER FACILITIES

1.	Hotels	At AD and in the city.
2.	Restaurants	At AD and in the city
3.	Transportation	Buses, taxis and car hire from AD
4.	Medical Facilities	First aid at AD. Hospital in the city.
5.	Bank and post office	At AD H-24
6.	Tourist office	At AD and in the city
7.	Remarks	Nil

VIDP AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1.	AD category for fire fighting	CAT-9
2.	Rescue equipment	Available as per category.
3.	Capability for removal of disabled aircraft	Fork lift 5/12 tons portable generator of 32.5Kg. Crane 5/10 capacities. Recovery van 1.5 tons
4.	Remarks	Nil

VIDP AD 2.7 SEASONAL AVAILABILITY – CLEARING

Nil

VIDP AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1.	Apron surface and strength	Surface	Ref aerodrome chart
		Strength	Ref aerodrome chart
2.	Taxiway width, surface and strength	Width	Ref parking / docking chart
		Surface	Ref parking / docking chart
		Strength	Ref parking / docking chart
3.	ACL and elevation	Location	---
		Elevation	---
4.	VOR/INS checkpoints	VOR	On TWYs ‘C’, ‘C1’, ‘P’, ‘N’, ‘A’, IAF Tech. area, T
		INS	---
5.	Remarks	---	

VIDP AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1.	Use of aircraft stand ID signs, TWY guidelines and visual docking / parking guidance system of aircraft stands	Taxiing guidance sign at all intersections with TWY and RWY and at all holding position. Guidelines at Aprons. Nose-in-Guidance at Apron stand.		
2.	RWY and TWY markings and LGT	RWY	Marked	Designation, THR, TDZ, Center Line, Edge, Ends
			Lighted	Designation, THR, TDZ, Center Line, Edge, Ends
		TWY	Marked	Centerline, Holding position
			Lighted	Edge
3.	Stop bars	At TWY C, D, M, N and P		
4.	Remarks	Nil		

VIDP AD 2.10 AERODORME OBSTACLES

In approach /TKOF areas			In circling area and at AD		Remarks
1.			2.		3.
RWY/Area affected	Obstacle type Elevation Marking/LGT	Coordinates	Obstacle type Elevation Marking/LGT	Coordinates	
a	b	c	a	b	
1.APCH10 TKOF28	STRUCTURE 220.3M/723FT	283407.4N 0770503.8E			
2.APCH28 TKOF10	APP LGTS 237.2M/778FT	283330.9N 0770722.3E			
3.	APP LGTS 237.4M/779FT	283330.6N 0770723.3E			
4.	APP LGTS 237.6M/780FT	283330.4N 0770724.5E			
5.	LLZ ANTENNA 240.8M/790FT	283329.2N 0770729.5E			
6.	LLZ BULIDING 241.9M/794	283327.0N 0770729.2E			
7.	DISUSED HUT 249.0M/817FT	283332.7N 0770745.5E			
8.	HOTEL VASANT ANTENNA 288.5M/947FT	283323.7N 0770951.7E			
9.	AP BND WALL 247.3M/811FT	283331.9N 0770742.2E			
10.	M0BILE RD TRAFFIC 248.9M/817FT	283332.1N 0770742.1E			
11.APCH09 TKOF27	APP LGT 218.9M/718FT	283414.0N 0770515.8E			
12.	APP LGT 218.8M/718FT	283414.0N 0770514.6E			
13.APCH27 TKOF09	GP OF TREES 239.1M/784FT	283413.9N 0770701.0E			

14.	SECURITY HUT 232.1M/761FT	283413.2N 0770700.8E			
15.	MOBILE RD TRAFFIC 234.1M/768FT	283413.1N 0770702.3E			
16.	WIRE FENCING 231.8M/760FT	283413.2N 0770701.8E			
17.	GP OF TREES 234.3M/798FT	283413.9N 0770706.2E			
18.	GP OF TREES 249.0M/817FT	283414.8N 0770710.5E			
19.	PUMP HOUSE 234.4M/769FT	283413.1N 0770708.8E			
20.	GP OF TREES 243.1M/798FT	283413.5N 0770709.5E			
21.	ELECT. POLE 238.3M/782FT	283413.5N 0770711.2E			
22.	PIPAL TREE 246.0M/807FT	283407.6N 0770713.8E			
23.	PIPAL TREE 247.0M/810FT	283406.7N 0770716.8E			
24.	TREE 248.7M/816FT	283414.5N 0770716.3E			
25.	ELECT. POLE 238.9M/784FT	283414.0N 0770716.1E			
26.	TREE 240.0M/787FT	283413.0N 0770716.8E			
27.	ELECT. POLE 239.3M/785FT	283413.5N 0770719.6E			
28.	TREE 244.1M/801FT	283411.7N 0770717.0E			
29.	TREE 243.1M/798FT	283410.7N 0770717.2E			
30.	VENT PIPE 239.3M/786FT	283409.1N 0770718.3E			
31.	TREE 243.4M/799FT	283408.5N 0770719.4E			
32.	BOUND. WALL 238.5M/782FT	283407.7N 0770719.0E			
33.	TREE 247.1M/811FT	283407.7N 0770719.2E			
34.	BULIDING ANTENNA TOP 247.2M/811FT	283413.6N 0770733.4E			
35.	BULIDING 251.1M/824FT	283417.6N 0770739.5E			
36.	TREE 258.1M/847FT	283403.5N 0770742.9E			
37.	GP OFTREE 257.9M/846FT	283405.7N 0770747.2E			

38.	TREE 265.8M/872FT	283418.2N 0770809.5E			
39.	GP OF TREES 257.1M/844FT	283404.2N 0770748.3E			
40.	BLDG. TML1A 238.4M/782FT	283407.5N 0770712.6E			
41.	ELECT.POLE 237.1M/778FT	283414.3N 0770712.1E			
42.	TREE 247.3M/811FT	283320.3N 0770739.5E			

VIDP 2.11 METEOROLOGICAL INFORMATION PROVIDED

1.	Associated MET office	Delhi
2.	Hours of service Met office outside hours	H24
3.	Office responsible for TAF preparation Periods of validity	Delhi 9 and 24HR
4.	Types of landing forecast Interval of issuance	Trend 30 Min
5.	Briefing / consultation provided	Provided
6.	Flight documentation Language(s) use	Chart form and Tabular form English
7.	Charts and other information available For briefing or consultation	S,U85,U70,U50,U30,U25,U15,U10, P30, P25, P20 SW [UPTO FL460]
8.	Supplementary equipment available for Providing information	Telex, Telefax, Satellite display work station.
9.	ATS units provided with information	Delhi ATC AND ACS
10.	AD Additional information (limitation of service, etc.)	LASER CEILOMETER installed. AVRA Rwy 27 Installed at Rwy 27 gives RVR from 2220M down to 330M. RVR in digital form is available in steps of 220M from 2220M in steps of 100M from 2000M to 800M and in steps of 60M from 750M to 330M. RVR below 330M not available.

VIDP AD 2.12 RUNWAY PHYSICAL CHARACTERSTICS

Designa-tions RWY NR	TRUE & MAG BRG	Dimensions of RWY (M)	Strength (PCN) and surface of RWY and SWY	THR coordinates	THR elevations and highest elevation of TDZ of precision APP RWY
1	**2**	**3**	**4**	**5**	**6**
09	091°15'GEO 091°00'MAG	2813X45M	84/F/B/W/T Upto 570M from beginning Rwy 09 rest 86/F/B/W/T Asphalt Concrete	283413.96N 0770517.26E	THR: 218.5M/717FT TDZ: 219.6M/720.6FT

27	271°15'GEO 271°00'MAG	2813X45M	86/F/B/W/T Upto 2243M from beginning Rwy 27 rest 84/F/B/W/T Asphalt Concrete	283411.61N 0770700.83E	THR: 228.6M/750FT TDZ: 228.56M/749.9FT
10	104°15'GEO 104°00'MAG	3810X45M	106/F/B/W/T Asphalt Concrete	283402.02N 0770505.52E	THR: 219.1M/719FT TDZ: 220.3M/722.9FT
28	284°15'GEO 284°00'MAG	3810X45M	106/F/B/W/T Asphalt Concrete	283330.72N 0770721.26E	THR: 236.6M/777FT TDZ: 236.58M/776.2FT

Slope of RWY-SWY	SWY Dimensions (M)	CWY Dimensions (M)	Strip Dimensions (M)	OFZ	Remarks
7	**8**	**9**	**10**	**11**	**12**
+0.38%	Nil	433 X 152	2933 X 152	Nil	Nil
-0.38%	Nil	700 X 152	2933 X 152	Nil	Nil
+0.46%	Nil	Nil	3930 X 305	Nil	Nil
-0.46%	Nil	274 X 305	3930 X 305	Nil	Nil

VIDP AD 2.13 DECLARED DISTANCES

RWY Designation	TORA (M)	TODA (M)	ASDA (M)	LDA (M)	Remarks
1	**2**	**3**	**4**	**5**	**6**
09	2813	3246	2813	2813	Nil
27	2813	3513	2813	2661	Nil
10	3810	3810	3810	3810	Nil
28	3810	4084	3810	3810	Nil

VIDP AD 2.14 APPROACH AND RUNWAY LIGHTING

Designations RWY	APCH LGT TYPE LEN INTST	THR LGT COLOUR WBAR	VASIS (MEHT) PAPI	TDZ, LGT LEN	RWY Centerline, LGT Length Spacing Color, INTST	RWY Edge , LGT , LEN Spacing Color, INTST
1	2	3	4	5	6	7
09	SALS 420M LIH	Green	PAPI Left/3°	---	---	2813M 60M White LIH

27	CAT-1 570M LIH	Green	PAPI Left/3°	---	---	2813M 60M White LIH
10	CAT-1 600M LIH	Green	PAPI Left/3° 22M	---	3810M, 15M White, LIH	3810M, 60M White LIH
28	CAT-IIIB 900M LIH	Green	PAPI Left/3° 21M	900M, 30M (spacing btn. Pairs and barrettes) White	3810M, 15M White, LIH	3810M, 60M White LIH

RWY END LGT COLOUR WBAR	SWY LGT LEN(M) Colour	Remarks
8	**9**	**10**
Red	Nil	Nil
Red	Nil	
Red	Nil	
Red	Nil	

VIDP AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1.	ABN/IBN location, characteristics and Hours of operation	ABN	At Terminal Building IB, FLG W&G EV2SEC. H24
		IBN	Nil
2.	LDI location and LGT Anemometer location and LGT	LDI	Nil
		Anemometer	1. 390M from THR28, Lighted 2. 300M from THR10, Lighted 3. 780M from THR27, Lighted.
3.	TWY edge and center line lighting	Edge	All TWY.
		Center line	TWY P, N, M, M1, L, L1, R, R1, R2, R3, R4, S, W, D, D1, C, C1, B, B3, E2, E1, E3, E4, E5, A. [A—D], on 27/09 RWY
4.	Secondary power supply/switch-over Time	Secondary Power supply to all lighting at AD. Switch-over time : CAT II / III 1Sec CAT I 15 SEC.	
5.	Remarks	---	

VIDP AD 2.16 HELICOPTER LANDING AREA

Not established

VIDP AD 2.17 ATS AIRSPACE

1.	Designation and lateral limits	Delhi CTR : Area bounded by 290200.0N 0771455.4E, then along greater arc of circle of radius 30NM centered at DPN VOR to 283600.2N 0772855.2N to 283700.2N 0772955.3E to 283700.2N 0771555.4E, and then along river jamuna to 285600.0N 0771155.4E to 290200.0N 0771455.4E.
2.	Vertical limits	SFC to FL50

3.	Airspace classification	D
4.	ATS unit call sign Language(s)	Delhi Approach English
5.	Transition altitude	4000 FT MSL
6.	Remarks	---

VIDP AD 2.18 ATS COMMUNICATION FACILITIES

Service Designator	Call Sign	Frequency	Hours of operation	Remarks
1	**2**	**3**	**4**	**5**
APP	Delhi Approach	127.9MHz 119.3MHz	H-24	--- SDBY
TWR	Delhi Tower	118.1MHz 118.75MHz	H-24	--- Additional
SMC	Delhi Ground	121.9MHz 121.75MHz	H-24	--- Additional
TAR	Delhi Radar	127.9 MHz/ 119.3 MHz	H-24	--- SDBY
RSR (East)	Delhi Radar	120.9 MHz 124.2MHz	H-24	--- SDBY
RSR (West)	Delhi Radar	124.55MHz 124.2MHz	H-24	--- SDBY
DATIS	Delhi Information	126.4 MHz	H-24	---
FLOW	Delhi flow control	119.5MHz	H-24	---
Clearance Delivery		125.7MHz	During two RWY operation	Stack control
Emergency Frequency		121.5MHz	H-24	---

VIDP AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid CAT of ILS/MLS (for VOR/ILS/MLS, give VAR)	ID	Frequency	Hours of operation	Site of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	**2**	**3**	**4**	**5**	**6**	**7**
DVOR	DPN	116.1MHz	H-24	283400.26N 0770542.14E	---	---
DME (DVOR)	DPN	1132/1195MHz	H-24	283400.26N 0770542.14E	760FT	Collocated with DVOR
NDB	DP	274KHz	H-24	283511.55N 0765952.55E	---	---
NDB	DH	202KHz	H-24	283403.44N 0771209.23E	---	---
LLZ28 ILS CAT-IIIB	IPLM	110.3MHz	H-24	283405.16N 0770451.86E	---	---
GP28		335.0MHz	H-24	283336.88N 0770709.74E	---	3°,RDH 50FT
DME (ILS28)	IPLM	1001/1064MHz	H-24	283336.88N 0770709.74E	760FT	Collocated with GP28.
LLZ10 ILS CAT-I	IDEL	109.5MHz	H-24	283328.22N 0770732.07E	---	---
GP 10		332.6MHz	H-24	283402.57N 0770516.37E	---	3°,RDH 50FT
DME (ILS10)	IDEL	993/1056MHz	H-24	283402.57N 0770516.37E	737FT	Collocated with GP10.

LLZ27 ILS CAT-I	IDLH	110.5MHz	H-24	283414.41N 0770456.50E	---	---
GP27	---	329.6MHz	H-24	283409.10N 0770644.68E	---	3°,RDH 50FT
DME (ILS27)	---	1066/1003MHz	H-24	283409.10N 0770644.68E	761FT	Colocated with GP27.
OM28	---	75MHz	H-24	283227.20N 0771156.55E	---	---
LO	PL	303KHz	H-24	283227.20N 0771156.55E	---	Colocated with OM28.
MM28	---	75MHz	H-24	283321.54N 0770801.94E	---	
ML	LM	320KHz	H-24	283321.54N 0770801.94E	---	Colocated with MM28.
ASR/MSSR	2765,2766,2795,2796 MHz 1030/1090 MHz		H-24	283357.75N 0770615.32E	---	---
RSR/MSSR	1290,1291,1320,1321 MHz 1030/1090 MHz		H-24	283142.49N 0770316.80E	---	---
ASMGCS	---	9170/9438MHz	H-24	283329.48N 0770538.85E	---	---

VIDP AD 2.20 LOCAL TRAFFIC REGULATIONS

I The TWY 'E1' and TWY 'B3' available for taxiing of Code letter 'C' aircraft only.
II. ITH marking provided for aircraft exiting from parking stands 31 to 40C facing west and TWY 'E'.
III. Taxiway centreline marking / guidelines connecting TWY 'E' with Twy 'C' are provided. Simultaneous use of TWY 'B3' and 'E1' (Dotted yellow line is available for code letter C aircraft.
IV. Access to Twy 'B3' and Twy 'E1' will be available via dotted yellow line. In case of head on situation aircraft will hold on Twy 'E' or Twy 'C'.
V. North side of disused Rwy 15/33 available for taxiing of IAF aircraft for operation
VI. All aircraft taxiing in/out from dumbel 15 are to follow new taxi line marked away from VIP bay towards fencing. All aircraft to contact base operations for taxi procedure positively on 121.2MHz.

VII. <u>FRONT BAYS PUSHBACK PROCEDURES - SALIENT FEATURES:</u>

A. The Apron layout in the front two rows of parking stands is divided into 05 blocks as under:

Block	Bay Nos.	Break Away Area
01	1-4	X1 & Y1
02	5-9	X2 & Y2
03	10-14	X3 & Y3
04	15-17	
05	18	

B. "BREAK AWAY" areas have ground marking of two yellow triangles with three white dots in between on the left side of the centerline. The nose wheel should be aligned in between the triangles ion the center line.

C. The 'BREAK AWAY" areas have been designated as:

Designation Location Meant for

X1	Behind stand 04	acft.facing South
X2	Behind stand 09	acft.facing North
X3	Behind stand 14	acft.facing South
Y1	Behind stand 05	acft.facing North
Y2	Behind stand 05	acft.facing North
Y3	Behind stand 10	acft.facing North

D. These shall be only one aircraft per block in one break away area.

E. Aircraft have to be pushed / and or pulled to one of the mentioned Break away areas for commencing taxiing, as per the direction of push back (in X's if aircraft pushing back facing South and Y's if aircraft is pushing back facing North)

F. Aircraft holding on "BREAK AWAY AREA" will be blocking 02 (Two bays infront of it.

G. Push back clearance in the same direction is to be separated by 03 stands and if in opposite direction should be separated by four (04)stands.

H. The New Apron taxi lane behind the bays 1-14, is designated as 'A' Apron Taxi land, suitable upto code letter 'C' aircraft.

I. Twy 'A' is north of stand No.1 joining Rwy 27/09.

J. A second departing aircraft likely to obstruct taxiing path of earlier push back aircraft normally cannot be given push back, hence considerable delay for departing aircraft.

K. Arrivals coming for bays 1-14, can only be hold on 'Break Away Areas' on 'A' Apron taxi lane.

L. Separation between arrivals going to bay 1-14 and departure holding on break away area for taxi is of two (02) bays. (i.e arriving aircraft can taxi uninterrupted, if the allotted bay is separated by 02 bay, from the departing aircraft holding on break away area).

Hence, there will be considerable delay for arrivals going to front brays as well.

M. For code letter 'D' aircraft entry to stand 15-17 will be through Twy 'C' but departure will be with push back arrangement on Twy C1 facing North or South depending upon Rwy in use.

N. Power in / Power out arrangement on stand 15-17 is for aircraft upto code letter 'C'

O. Twy E1 and B3 can be used simultaneously upto code letter 'C' aircraft only.

P. Access to Twy 'C' / C1 from Twy B3 and E1 shall be available via dotted yellow lines.

Q. Entry /Exit of aircraft on bays 31-40C will be via E1

R. Apron taxi lane behind stand 1-14 is 'A' Apron taxi lane.

S. Push back and taxi instructions will be issued by SMC Controller as Per the Rwy-in-use and present traffic scenario.

VIDP AD 2.21 NOISE ABATEMENT PROCEDURES

VIDP AD 2.22 FLIGHT PROCEDURES

I SURVEILLANCE RADAR APPROACH PROCEDURES
IGI AIRPORT, NEW DELHI

(1)

RWY	THR ELEV	Inbound Track	IF (Dist. From Touch Down)	Altitude over IF	FAF (Dis. From touch down)	Altitude over FAF	MAPT (Dist. From touch down)	OCA (Straight-in)
	Ft	Deg	NM	Ft	NM	Ft	NM	Ft
28	777	284	11	2600	5.7	2600	2	1420
27	750	271	11	2600	5.8	2600	2	1390
10	719	104	11	2600	5.9	2600	2	1360
09	717	091	11	2600	5.9	2600	2	1360

(2) Missed Approach procedure

(1)Rwy 28 :- Climb straight ahead to F65, crossing NDB (274 DP) or 5 DME DPN turn right on heading 345ºM to intercept R-316 (116.1 DPN) to join holding at SAMPLA VOR (117.0 SAM) at F65 or as instructed by ATC.

(2)Rwy 27 :- Climb straight ahead to F65 crossing abeam NDB (274 DP) or 5 DME DPN turn right on heading 345ºM to intercept R-316 (116.1DPN) to join holding at SAMPLA VOR (117.0 SAM) at F65 or as instructed by ATC.

(3)Rwy 10 :- Climb straight ahead to 2600 ft. Climbing turn right on heading 120ºM to intercept R-107(116.1DPN) to join holding at SSB VOR (112.4 SSB) at F65 or as instructed by ATC.

(4)Rwy 09 :- Climb straight ahead to 2600 ft., climbing turn right on heading 130ºM to intercept R-107(116.1DPN) to join holding at SSB VOR (112.4 SSB) at F65 or as instructed by ATC.

(3) Distance from touch down/altitude information

RWY	Distance/Altitude Information						Descent Gradient
28	Dist. (NM)	5.7	5	4	3	2	5.27% (3 Deg)
	Altitude (Ft)	2600	2380	2060	1740	1420	

27	Dist. (NM)	5.8	5	4	3	2	5.26% (3 Deg)
	Altitude (Ft)	2600	2350	2030	1710	1390	
10	Dist. (NM)	5.9	5	4	3	2	5.25% (3 Deg)
	Altitude (Ft)	2600	2320	2000	1680	1360	
09	Dist. (NM)	5.9	5	4	3	2	5.25% (3 Deg)
	Altitude (Ft)	2600	2320	2000	1680	1360	

(4) OCA For visual circling : Cat A/B : 1470 ft.
Cat C/D : 1570 ft.

(5) Minimum Radar vectoring Altitude : 2600ft. within 25 NM in all sectors.

(6) Holding procedures

a) SAMPLA VOR (117.0 SAM)
One minute left hand pattern inbound track 136º (M). Minimum holding level F65.

b) SAKRAS VOR (117.2 SKA)
One minute right hand pattern inbound track 006º (M). Minimum holding level F65.

c) SIKANDARABAD VOR (112.4SSB)
One minute right hand pattern inbound track 288º (M). Minimum holding level F65. Maximum holding level F140.

(7) Radio communication failure procedure :

1. (I) In case radio communication failure takes place prior to establishing on final approach track, maintain the last assigned level or F65 whichever is higher and proceed to SKA VOR (117.2) via the shortest route to join holding procedure as specified at Para 6.

(II) In case radio communication failure takes place after establishing the final approach track, aircraft may continue the approach and land if visual or climb straight ahead to 2600 ft then climbing turn left/right to join SKA VOR (117.2) holding procedure at F65 as specified at para6.

2. After joining the holding procedure carry out the instrument approach procedure for the RWY for which SRA was being provided.

NOTE : If required by ATC the length of intermediate segment may be reduced to less then 5 NM.

II STANDARD INSTRUMENT DEPARTURE PROCEDURES (SIDs)

1. SIDs are designed based on the statistical data for average flight path of Cat D aircraft as given in the attachment A to ICAO DOC 8168 Part II. Bank angle considered as 15 Deg upto height of 1000 feet above Departure End of Runway (DER), 20 Deg between 1000 feet and 3000 feet and 25 Deg above 3000 feet.

2. Turn points specified in SIDs are advisory only and pilots are expected to use operational judgment for commencing the turn based on the actual ground speed of the aircraft.

3. Pilots are required to fly tracks specified in SIDs by taking into account for known and estimated wind effect.

4. Wherever Procedure Design Gradient (PDG) higher than nominal (3.3%) is used, the same has been indicated on the chart. In case, the pilot is unable to follow the PDG higher than 3.3%, the same shall be intimated to ATC and consequently alternate departure instructions will be passed.

5. After airborne, pilot shall advise the SID identifier and last level vacated to the nearest 100 feet on the first contact to the approach.

6. Non instructions shall be given to the aircraft, which would bring the flight path of the aircraft closer to the aerodrome than prescribed in the SID.

7. SID shall not be cancelled by ATC until aircraft reaches the minimum radar vectoring altitude (2600 feet)

8. The cancellation of SID is pre-requisite for radar vectoring. On completion of radar vectoring aircraft shall not be re-cleared to intercept SID.

9. Below Standard instrument departure procedures (SIDs) aircraft departing from Rwy 09/10 shall take right turn only unless otherwise specified by ATC.

10. RADIO COMMUNICATION FAILURE (RCF) PROCEDURE (Common to all SIDs)

"Maintain FL55 or last assigned level whichever is higher and heading; if given, until 20 DME (DPN) then follow 25 DME (DPN) arc to join flight plan ATS route and climb to flight plan level when established on route".

III STANDARD INSTRUMENT ARRIVAL ROUTES (STARS) I.G.I. AIRPORT, DELHI

1. For each STAR a starting fix has been defined either by a navigational aid (VOR) or an intersection fix (VOR/DME). In addition wherever necessary a transition fix based on VOR/DME intersection has been designated. the arrival route commences either at starting fix or at the transition fix on the ATS route as appropriate.

2. Specific clearance from ATC would be required for execution of instrument Approach procedure for aircraft following the STAR.

3. ATC at its discretion may impose additional vertical restrictions or relax the restrictions provided in the procedure depending upon the traffic.

4. (i) Radar controller shall provide radar monitoring to aircraft following STAR. Aircraft may be vectored away from the STAR, if needed, for sequencing, spacing, delaying or separation with respect to other traffic.
Aircraft may also be vectored to join an arrival route.

(ii) In case radar controller intends to provide tactical vectoring to aircraft following the STAR, specific instruction should be given to aircraft to cancel STAR.

5. STAR terminates on the interception of final approach of applicable instrument approach procedure.

RADIO COMMUNICATION FAILURE(RCF) PROCEDURE

1. Ttransponder equipped aircraft experiencing radio communication failure will Operate transponder on mode 'A' code 7600.

2. Aircraft flying outside control zone of Delhi shall maintain last assigned level Or FL065 whichever is higher.

RADIO COMMUNICATION FAILURE (RCF) PROCEDURES IGI AIRPORT , NEW DELHI

1. FOR FLIGHTS LANDING AT DELHI NOT FOLLOWING STARS

A) Transponder equipped aircraft experiencing Radio Communication failure will operate transponder on Mode A Code 7600.

B) Aircraft flying outside control zone of Delhi shall maintain last assigned level or F065 whichever is higher.

C) I) RCF Procedure for aircraft under own navigation of flight crew on following ATS route.

a) R594, W37: After SSB VOR proceed direct to SKA VOR maintaining last assigned level or F065 whichever is higher. If above F065 descend in SKA VOR hold and then follow STAR/IAL procedure for the Rwy-in-use.

b) W33N, W10N, L760: After GURTI proceed direct to SKA VOR and follow procedure as given in Para C) I) a).

c) W20N: After OSRAM proceed direct to SKA VOR and follow procedure as given in Para C) I) a).

d) A347, R462, W13N, W65N : After REBON proceed direct to SKA VOR and follow procedure as given in Para C) I) a).

e) G452: After AVGON proceed direct to SKA VOR and then follow procedure as given in Para C) I) a).

f) A466, W30E, W31E : After IGINO proceed direct to SKA VOR and then follow procedure as given in C) I) a).

g) W39, W35: Proceed to SKA VOR via DP NDB and then follow procedure as given in Para C) I) a).

ii) RCF procedure for aircraft under Radar Vector.

a) After clearance for Instrument Approach Procedures has been issued the aircraft should continue the procedure and land.

b) Prior to clearance for Instrument Approach Procedure has been issued, proceed direct to SKA VOR maintaining the last assigned level or F065 whichever is higher. If above F065 descend in SKA VOR hold and then follow STAR/IAL procedure for the Rwy-in-use.

2. FOR FLIGHTS LANDING AT DELHI FOLLOWING STARS

A) Transponder equipped aircraft experiencing Radio communication failure will operate transponder on Mode A Code 7600.

B) Aircraft flying outside control zone of Delhi shall maintain last assigned level or F065 whichever is higher.

C) Radio communication failure Procedure when following the STAR under pilot's own navigation or under Radar Vectors :

I) After the clearance for the Instrument Approach Procedure has been issued, the aircraft should continue via STAR and land.

II) Prior to clearance for Instrument Approach Procedure is issued, the aircraft shall maintain last assigned level or F065, whichever is higher and

a) Proceed to SKA VOR (117.2) to join holding via shortest route (Except for aircraft coming from BASOT.

b) Aircraft coming from BASOT to route via DP NDB (274) to join SKA VOR (117,2) holding then follow STAR/IAL procedure for the Rwy-in-use.

IV DEPARTURE PROCEDURE

1.1 All departures should request for start up within five minutes of the field EOBT. The aircraft, which failed to request, start up within five minutes of the field EOBT will loose its priority and be considered for start up depending upon the traffic situation and subject to delay.

1.2 The aircraft should be in a position to commence its taxi not more than five minutes after the issue of start up clearance failing which the start up clearance will be cancelled and the aircraft will lose its priority and be considered for start up depending upon the traffic situation and subject to delay.

1.3 Taxiing aircraft should maintain a minimum taxiing speed of not less than 15 Knots on the straight portion of taxiways and between 8-12Kts during turning maneuvers.

1.4 Any aircraft if observed, by the Controller, to be too slow n taxiing and thereby adversely affecting the efficient aircraft movement shall be taken out of the sequence and will be considered for departure as a last priority depending upon the traffic situation subject to delay.

1.5 Based on the aircraft type and its performance characteristics, ATC will issue Taxiing instructions so as to depart from the nearest runway intersection from where adequate take off run is available for departure.
Pilots unable to accept departure from intersection may request ATC for Alternate take off position or from the beginning of runway at the time of Push back/Startup. However, such request will be considered by ATC subject to Delay.

1.6 Procedures for departure from intersections specific to Delhi are given in para 1.12.

17. Pilot shall complete all mandatory pre-departure checks before entering the Active runway for departure so that the aircraft is in a position to take off Immediately upon receipt of take-off clearance.

1.8 When the aircraft is issued with a line-up and take-off clearance at the taxi Holding position it shall be in a position to line p and affect an immediate Take off in one continuous movement.

1.9 When the aircraft is issued with a take off clearance after lining up on the runway it shall commence take off roll immediately upon receipt of take of Clearance.

1.10 If the Controller observes a delay in respect of the departing aircraft in Commencing its take off run after issuance of take off clearance, the take off clearance will be cancelled and the aircraft be advised to vacate the Runways immediately at the nearest taxiway to make way for the subsequent arrival or departure. Necessary entries in this regard shall be recorded in the Log Book.

1.11 No ATC speed restriction will be applicable for departing aircraft except when specifically required by ATC.

1.12 INTERSECTION DEPARTUES SPECIFIC TO DELHI

Airport (i)	Runway (ii)	Taxiway (iii)	TORA from Taxiway given in (iii) (iv) Metres	Cat of Acft (v)
DELHI	28	C & W	3350	D
	10	E4	3235	D
		M	2760	C
	27	A	2813	D
		C1	2661	D
		E	2085	C
	09	E3	2673	D

NOTE: With the objective of expediting the flow of traffic, ATC may authorize

Departure from other intersections also.

2. SPEED CONTROL PROCEDURES IN THE PROVISION OF RADAR CONTROL SERVICE VOR ARRIVALS

2.1All arriving aircraft operating below 10000 ft shall maintain IAS not greater than 250 kt.

2.2Arriving acft below 10,000 ft and between 30NM and 15NM from VOR/NDB shall maintain IAS 220 Kt or less.

2.3Arriving aircraft within 15NM of VOR serving the airport or below FL65 shall maintain IAS as per acft category specified below:

Aircraft Cat.	A	B	C	D/E
Within 15NM excluding final App. Track	110Kt	140Kt	170Kt	185Kt
10NM to 4NM on final app. track	90Kt	120Kt	150Kt	160Kt

NOTE1: If required, Radar Controller may suggest a different speed (but not less than the speed specified above) to be maintained for a particular period of time/segment of flight or issue specific instructions as per traffic situation.

NOTE 2: Acft unable to maintain the speed specified above shall advise ATC and request for alternate instructions. Such request will be considered by ATC but may result in re-sequencing and delay.

2.4When traffic condition permit, ATC may suspend speed control by using the phrase "No ATC Speed Restrictions".

2.5Non-compliance of above provisions will be treated as violation of ATC instructions and the aircraft will be taken out of sequence for repositioning.

2.6ATC may advise/suggest the arriving acft, while on final approach, the requirement to vacate the runway on landing via specific exit taxiway. Acft unable to comply with this requirement shall immediately inform ATC.