

**FEDERAL AVIATION ADMINISTRATION  
FLIGHT STANDARDS SERVICE  
GRAPHIC DEPARTURE PROCEDURES (DP)**

Bearings, headings, courses, tracks and radials are magnetic. Elevations and altitudes are in feet, MSL. Altitudes are minimum altitudes unless otherwise indicated.  
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<u>DP NAME</u>	<u>NUMBER</u>	<u>DP COMPUTER CODE</u>	<u>SUPERSEDED NUMBER</u>	<u>DATED</u>	<u>EFFECTIVE DATE</u>
ECHHO	ONE	ECHHO1.ECHHO	NONE		2 MARCH 2017
<u>TYPE:</u>	<u>OBSTACLE</u>	<u>COPTER</u>	<u>SID</u>	<u>SPECIAL</u>	<u>RNAV</u>
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**DP ROUTE DESCRIPTION:**

TAKEOFF RWY 9: CLIMB HEADING 094.99 TO 4000, THEN LEFT TURN DIRECT BAUCA, THEN ON TRACK 307.40 TO ECHHO, THENCE...

TAKEOFF RWY 27: CLIMB HEADING 275.00 TO 520, THEN RIGHT TURN DIRECT LANDN, THEN ON TRACK 330.30 TO ECHHO, THENCE...

...ON (TRANSITION). MAINTAIN 15000. EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.

**TRANSITION ROUTES (GRAPHIC DEPICTION ONLY):**

<u>TRANSITION NAME</u>	<u>TRANSITION COMPUTER CODE</u>	<u>FROM FIX/NAVAID</u>	<u>TO FIX/NAVAID</u>	<u>COURSE</u>	<u>DISTANCE</u>	<u>MEA</u>	<u>MOCA</u>	<u>CROSSING ALTITUDE/FIXES</u>
IKAYE	ECHHO1.IKAYE	ECHHO	GOFUR	TRACK 307.69	16.59	8500		GOFUR AT/ABOVE 14000
		GOFUR	MMOTO	TRACK 306.12	7.74	12000		MMOTO AT/ABOVE 15000
		MMOTO	TEDEY	TRACK 310.06	20.66	15000		
		TEDEY	GEEGN	TRACK 287.60	45.40	16000		
		GEEGN	IKAYE	TRACK 307.85	19.53	16000		
SEAL BEACH	ECHHO1.SLI	ECHHO	GOFUR	TRACK 307.69	16.59	8500		GOFUR AT/ABOVE 14000
		GOFUR	MMOTO	TRACK 306.12	7.74	12000		MMOTO AT/ABOVE 15000
		MMOTO	SLI VORTAC	TRACK 318.73	35.66	15000		

**PROCEDURAL DATA NOTES:**

NOTE: RADAR REQUIRED.

NOTE: RNAV-1

NOTE: DME/DME/IRU OR GPS REQUIRED.

NOTE: IF UNABLE ALTITUDE RESTRICTION AT GOFUR, ADVISE ATC ON INITIAL CONTACT.

**TAKEOFF MINIMUMS:**

RWY 9: 400-1 WITH MINIMUM CLIMB OF 610 FT PER NM TO 1900 OR STANDARD WITH MINIMUM CLIMB OF 687 FT PER NM TO 1900.

RWY 27: STANDARD WITH MINIMUM CLIMB OF 500 FT PER NM TO 4000.



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ECHHO	ONE	ECHHO1.ECHHO	NONE		2 MARCH 2017

**TAKEOFF OBSTACLES NOTES:**

NOTE: RWY 09, FENCE, TERRAIN, BEGINNING 14 FEET FROM DER, 67 FEET LEFT OF CENTERLINE, UP TO 14 FEET AGL/35 FEET MSL. POLE, BLDG, TERRAIN, FENCE, BEGINNING 21 FEET FROM DER, 8 FEET RIGHT OF CENTERLINE, UP TO 35 FEET AGL/50 FEET MSL. SIGN, TERRAIN, BEGINNING 268 FEET FROM DER, 137 FEET LEFT OF CENTERLINE, UP TO 50 FEET AGL/77 FEET MSL. TREE, BLDG, BEGINNING 781 FEET FROM DER, 265 FEET RIGHT OF CENTERLINE, UP TO 91 FEET MSL. BLDG, TERRAIN, BEGINNING 877 FEET FROM DER, 180 FEET LEFT OF CENTERLINE, UP TO 66 FEET AGL/106 FEET MSL. BLDG 1385 FEET FROM DER, 356 FEET RIGHT OF CENTERLINE, 55 FEET AGL/95 FEET MSL. ELEC SYS, TERRAIN, BEGINNING 1395 FEET FROM DER, 319 FEET LEFT OF CENTERLINE, UP TO 44 FEET AGL/138 FEET MSL. TREE, TERRAIN, BEGINNING 1822 FEET FROM DER, 561 FEET LEFT OF CENTERLINE, UP TO 196 FEET MSL. TREE 1857 FEET FROM DER, 45 FEET RIGHT OF CENTERLINE, 45 FEET AGL/144 FEET MSL. TREE, TERRAIN, BLDG, BEGINNING 2140 FEET FROM DER, 119 FEET LEFT OF CENTERLINE, UP TO 198 FEET MSL. BLDG, TERRAIN, BEGINNING 2596 FEET FROM DER, 101 FEET RIGHT OF CENTERLINE, UP TO 89 FEET AGL/158 FEET MSL. TREES, TERRAIN, BEGINNING 2681 FEET FROM DER, 190 FEET LEFT OF CENTERLINE, UP TO 215 FEET MSL. T-L TWR, TERRAIN, BLDG, POLE, TREE, BEGINNING 2948 FEET FROM DER, 40 FEET LEFT OF CENTERLINE, UP TO 67 FEET AGL/272 FEET MSL. TREE, TERRAIN, BLDG, BEGINNING 2965 FEET FROM DER, 30 FEET RIGHT OF CENTERLINE, UP TO 211 FEET MSL. BLDG, TERRAIN, BEGINNING 3857 FEET FROM DER, 39 FEET RIGHT OF CENTERLINE, UP TO 44 FEET AGL/216 FEET MSL. BLDG 4376 FEET FROM DER, 1295 FEET LEFT OF CENTERLINE, 117 FEET AGL/364 FEET MSL. BLDG, TERRAIN, BEGINNING 4410 FEET FROM DER, 322 FEET LEFT OF CENTERLINE, UP TO 128 FEET AGL/389 FEET MSL. BLDG, BEGINNING 4433 FEET FROM DER, 1207 FEET RIGHT OF CENTERLINE, UP TO 165 FEET AGL/296 FEET MSL. ANT ON OL BLDG 4460 FEET FROM DER, 1482 FEET LEFT OF CENTERLINE, 403 FEET MSL. TERRAIN, BLDG, TREE, POLE, BEGINNING 4510 FEET FROM DER, 213 FEET LEFT OF CENTERLINE, UP TO 132 FEET MSL. TREE, BLDG, BEGINNING 5159 FEET FROM DER, 325 FEET RIGHT OF CENTERLINE, UP TO 113 FEET AGL/301 FEET MSL. BLDG 6023 FEET FROM DER, 1934 FEET RIGHT OF CENTERLINE, 224 FEET AGL/370 FEET MSL. BLDG 1 NM FROM DER, 1543 FEET RIGHT OF CENTERLINE, 234 FEET AGL/372 FEET MSL. BLDG, TREE, BEGINNING 1 NM FROM DER, 21 FEET RIGHT OF CENTERLINE, UP TO 287 FEET AGL/401 FEET MSL. MONUMENT 1.3 NM FROM DER, 1339 FEET LEFT OF CENTERLINE, 53 FEET AGL/310 FEET MSL. POLE 1.3 NM FROM DER, 1721 FEET LEFT OF CENTERLINE, 35 FEET AGL/306 FEET MSL. STACK, TREE, BEGINNING 1.4 NM FROM DER, 501 FEET LEFT OF CENTERLINE, UP TO 170 FEET AGL/374 FEET MSL. TREE 1.9 NM FROM DER, 490 FEET LEFT OF CENTERLINE, 330 FEET MSL.

NOTE: RWY 27, POLE 192 FEET FROM DER, 347 FEET RIGHT OF CENTERLINE, 17 FEET AGL/29 FEET MSL. NAVAID 284 FEET FROM DER, 317 FEET LEFT OF CENTERLINE, 19 FEET AGL/28 FEET MSL. TREE 754 FEET FROM DER, 156 FEET RIGHT OF CENTERLINE, 24 FEET AGL/34 FEET MSL. TREE 1021 FEET FROM DER, 620 FEET RIGHT OF CENTERLINE, 71 FEET MSL. POLE 2515 FEET FROM DER, 707 FEET LEFT OF CENTERLINE, 103 FEET AGL/118 FEET MSL. TREE 2594 FEET FROM DER, 353 FEET RIGHT OF CENTERLINE, 90 FEET AGL/107 FEET MSL. TREE 3179 FEET FROM DER, 410 FEET RIGHT OF CENTERLINE, 111 FEET MSL. TREE 3494 FEET FROM DER, 947 FEET RIGHT OF CENTERLINE, 169 FEET MSL. TOWER 3675 FEET FROM DER, 14 FEET RIGHT OF CENTERLINE, 60 FEET AGL/115 FEET MSL. TREE 4248 FEET FROM DER, 403 FEET LEFT OF CENTERLINE, 75 FEET AGL/150 FEET MSL. TREE 4441 FEET FROM DER, 1199 FEET RIGHT OF CENTERLINE, 111 FEET AGL/199 FEET MSL. TREES, BEGINNING 5046 FEET FROM DER, 7 FEET LEFT OF CENTERLINE, UP TO 96 FEET AGL/235 FEET MSL. ,TREE, BLDG, BEGINNING 5693 FEET FROM DER, 272 FEET RIGHT OF CENTERLINE, UP TO 227 FEET MSL. TREE 6050 FEET FROM DER, 1703 FEET LEFT OF CENTERLINE, 256 FEET MSL. TREES, BEGINNING 1 NM FROM DER, 532 FEET LEFT OF CENTERLINE, UP TO 65 FEET AGL/261 FEET MSL. BLDG LT, TREE, BEGINNING 1 NM FROM DER, 257 FEET RIGHT OF CENTERLINE, UP TO 40 FEET AGL/238 FEET MSL. TREE 1.9 NM FROM DER, 3367 FEET LEFT OF CENTERLINE, 65 FEET AGL/328 FEET MSL.

**CONTROLLING OBSTACLES:**

RWY 9: 272 FT MSL TOWER (06-027479) 324348.73N/1170953.75W (CLIMB GRADIENT), 403 FT MSL ANTENNA (KSAN0139) 324349.95N/1170934.93W (CEILING), 388 FT MSL TREE (KSANT000081) 324341.29N/1170732.38W (VISIBILITY). 2765 FT MSL AAO 324146.95N/1165610.61W (CG TERM ALT).

RWY 27: 169 FT MSL TREE (KSAN0040) 324432.18W/1171251.95W (CLIMB GRADIENT), 328 FT MSL TREE (KSANT000047) 324413.30N/1171437.39W (CEILING/VISIBILITY).

**LOST COMMUNICATIONS PROCEDURES:****ADDITIONAL FLIGHT DATA:**

REFERENCE MAG VAR: KSAN 11E EPOCH YR: 2020  
CHART: TOP ALTITUDE: 15000.  
DME/DME ASSESSMENT: SAT (RNAV 2.0).  
DO NOT CHART MOCAS.



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ECHHO	ONE	ECHHO1.ECHHO	NONE		2 MARCH 2017

**AIRPORTS SERVED:**

<u>AIRPORT NAME</u>	<u>CITY</u>	<u>STATE</u>
SAN DIEGO INTL	SAN DIEGO	CA

**COMMUNICATIONS:**

ATIS, CLNC DEL, GND CON, LINDBERGH TOWER, SOCAL DEP CON E/W

**FIXES AND/OR NAVAIDS:****REMARKS:**

A WAIVER FOR EXCESSIVE LENGTH OF ICA AND A LETTER OF APPROVAL ARE ON FILE FOR 400 - 1 WITH A MINIMUM CLIMB OF 610 FEET PER NM, AND STANDARD WITH MINIMUM CLIMB GRADIENT OF 687 FEET PER NM.



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ECHHO	ONE	ECHHO1.ECHHO	NONE		2 MARCH 2017

**FLIGHT INSPECTED BY:***Digitally signed by***BEV L BORDY**

Dec 21, 2016

**OFFICE SYMBOL:**

FIOG

**DATE:**

12/20/2016

**DEVELOPED BY:***Digitally signed by***BEV L BORDY**

Dec 21, 2016

**OFFICE SYMBOL:**

AJV-5433

**DATE:**

09/15/2016

**APPROVED BY:***Digitally signed by***BEV L BORDY**

Dec 21, 2016

**OFFICE SYMBOL:**

AJV-5430

**DATE:****REQUIRED EFFECTIVE DATE:**

ROUTINE

**COORDINATED WITH:****A4A****ALPA****AOPA****APA****HAI****NBAA****OTHER:**

ZLA, SAN TRACON, ATCT, AMGR, WESTERN FPT

**CHANGES - REASONS:**

ORIGINAL PROCEDURE.

12/20/16: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 9/15/16.

1. ADDED DO NOT CHART MOCAS TO ADDITIONAL FLIGHT DATA.



**FEDERAL AVIATION ADMINISTRATION  
FLIGHT STANDARDS SERVICE  
DEPARTURE (DATA RECORD)**

DP NAME							NUMBER	DP COMPUTER CODE	SUPERSEDED NUMBER	DATED	EFFECTIVE DATE
ECHHO							ONE	ECHHO1.ECHHO	NONE		2 MARCH 2017
FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED		REMARKS	
RW09 (AER)*	324411.73N/1171207.80W*	N	-	-	-	-				*DISPL THLD (700.0 FT)	
4000 MSL	-	-	-	VA	105.99	-				400-1 WITH MINIMUM CLIMB OF 610 FT/NM TO 1900 OR STANDARD WITH MINIMUM CLIMB OF 687 TO 1900	
BAUCA	325136.76N/1171538.05W	Y	FB	DF	-	-				LEFT TURN	
ECHHO	325801.44N/1172223.40W	Y	FB	TF	318.40	8.56					
RW27 (AER)*	324352.94N/1171050.26W*	N	-	-	-	-				*DISPL THLD (1810.0 FT)	
520 MSL	-	-	-	VA	286.00	-				CG 500 FT/NM TO 4000	
LANDN	324737.02N/1171812.59W	Y	FB	DF	-	-				RIGHT TURN	
ECHHO	325801.44N/1172223.40W	Y	FB	TF	341.30	10.97					
ECHHO	325801.44N/1172223.40W	Y	-	IF	-	-				ECHHO1.IKAYE	
GOFUR	331029.72N/1173526.14W	Y	FB	TF	318.69	16.59	AT/ABOVE 14000				
MMOTO	331610.43N/1174142.94W	Y	FB	TF	317.12	7.74	AT/ABOVE 15000				
TEDEY	333215.25N/1175714.80W	Y	FB	TF	321.06	20.66					
GEEGN	335352.27N/1184508.16W	Y	FB	TF	298.60	45.40					
IKAYE	340835.00N/1190037.00W	Y	FB	TF	318.85	19.53					
ECHHO	325801.44N/1172223.40W	Y	-	IF	-	-				ECHHO1.SLI	
GOFUR	331029.72N/1173526.14W	Y	FB	TF	318.69	16.59	AT/ABOVE 14000				
MMOTO	331610.43N/1174142.94W	Y	FB	TF	317.12	7.74	AT/ABOVE 15000				
SLI VORTAC	334659.87N/1180317.12W	Y	FB	TF	329.73	35.66					QUALITY

QUALITY  
4  
CHECKED