

US DEPARTMENT of TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

STANDARD TERMINAL ARRIVAL (STAR)

Bearings, headings, courses, tracks and radials are magnetic. Elevations and altitudes are in feet. MSL. Altitudes are minimum altitudes unless otherwise indicated.

Distances are in nautical miles (NM). Graphic depiction attached.

Arrival Name	Number	STAR Computer Code	Superseded Number	Dated	Effective Date
SMUKE (RNAV)	TWO	RAYCR.SMUKE2	ONE	5 Mar 2015	10 NOV 2016

TRANSITION ROUTES:

Transition Name	Transition Computer Codes	From FIX/NAVAID	To FIX/NAVAID	Mag Course	Distance	MEA	MOCA	MAA	Crossing Altitudes / Fixes
EMBRR	EMBRR.SMUKE2	EMBRR	EMBRR						
			WOOTE	035.20	12.41	10000	2100		
			GAMLE	035.27	08.62	10000	2000		BETWEEN 15000 AND FL210
			RACYR	034.38	10.77	7000	2100		BETWEEN 12000 AND FL190
TERGE	TERGE.SMUKE2	TERGE	TERGE						
			EMBRR	034.63	49.99	13000	2100		
			WOOTE	035.20	12.41	10000	2100		
			GAMLE	035.27	08.62	10000	2000		BETWEEN 15000 AND FL210
			RACYR	034.38	10.77	7000	2100		BETWEEN 12000 AND FL190
WIDAM	WIDAM.SMUKE2	WIDAM	WIDAM						
			PAAAM	085.76	12.43	7000	2200		
			OLIPE	085.98	07.46	7000	2200		BETWEEN FL240 AND FL260
			ATOTE	085.92	40.48	7000	2200		
			RACYR	086.48	14.59	7000	2100		BETWEEN 12000 AND FL190

ARRIVAL ROUTE DESCRIPTION:

FROM RACYR ON TRACK 036.15/10.40 TO SMUKE (MEA 2400), THEN ON TRACK 040.41/10.48 TO FIIRE (MEA 2400).

LANDING RWY 05L: FROM FIIRE ON TRACK 035.22/4.74 TO CROSS WESLE AT OR ABOVE 6000 (MEA 2300), THEN ON TRACK 043.22/5.97 TO CROSS WAAYN AT OR ABOVE 5000 AND AT 210 KIAS (MEA 2300). EXPECT RNAV(RNP), RNAV(GPS) OR ILS OR LOC RWY 05L OR RADAR VECTORS TO FINAL APPROACH COURSE.

LANDING RWY 05R: FROM FIIRE ON TRACK 035.22/4.74 TO CROSS WESLE AT OR ABOVE 6000 (MEA 2300), THEN ON TRACK 050.80/6.37 TO CROSS IIUUU AT OR ABOVE 5000 AND AT 210 KIAS (MEA 2300). EXPECT RNAV(RNP), RNAV(GPS) OR ILS OR LOC RWY 05R OR RADAR VECTORS TO FINAL APPROACH COURSE.

LANDING RWY 14: FROM FIIRE ON TRACK 042.95/2.20 TO CROSS EDIIE AT OR ABOVE 11000 (MEA 2300), THEN ON TRACK 042.97/2.19 TO CROSS COCOO AT OR ABOVE 10000 (MEA 2300), THEN ON TRACK 044.74/11.00 TO CROSS CIRAM AT OR ABOVE 7000 AND AT 230 KIAS (MEA 2300), THEN ON TRACK 049.46/5.91 TO CROSS PNFLD AT 6000 AND AT 210 KIAS (MEA 2300), THEN ON TRACK 319.61/7.00 TO WONOK (MEA 2200), THEN ON TRACK 319.61. EXPECT RADAR VECTORS TO FINAL APPROACH COURSE.

LANDING RWY 23L: FROM FIIRE ON TRACK 060.39/4.50 TO CROSS CHERZ AT OR ABOVE 11000 (MEA 2300), THEN ON TRACK 060.44/4.28 TO CROSS TTKAY AT OR ABOVE 10000 (MEA 2300), THEN ON TRACK 055.89/11.47 TO CROSS EDODE AT OR ABOVE 7000 AND AT 230 KIAS (MEA 2300), THEN ON TRACK 056.47/6.00 TO CROSS KNIGT AT 6000 AND AT 210 KIAS (MEA 2300), THEN ON TRACK 049.60/6.50 TO RAMEY (MEA 2300), THEN ON TRACK 049.60. EXPECT RADAR VECTORS TO FINAL APPROACH COURSE.

LANDING RWY 23R: FROM FIIRE ON TRACK 032.51/4.50 TO CROSS WOTSN AT OR ABOVE 11000 (MEA 2400), THEN ON TRACK 032.54/4.81 TO CROSS DUBBX AT OR ABOVE 10000 (MEA 2400), THEN ON TRACK 037.00/11.47 TO CROSS BLSTR AT OR ABOVE 7000 AND AT 230 KIAS (MEA 2400), THEN ON TRACK 036.31/6.01 TO CROSS PETYN AT 6000 AND AT 210 KIAS (MEA 2400), THEN ON TRACK 049.95/6.50 TO ZOSAR (MEA 2400), THEN ON TRACK 049.95. EXPECT RADAR VECTORS TO FINAL APPROACH COURSE.

LANDING RWY 32: FROM FIIRE ON TRACK 042.95/2.20 TO CROSS EDIIE AT OR ABOVE 11000 (MEA 2300), THEN ON TRACK 042.97/2.19 TO CROSS COCOO AT OR ABOVE 10000 (MEA 2300), THEN ON TRACK 044.74/11.00 TO CROSS CIRAM AT OR ABOVE 7000 AND AT 230 KIAS (MEA 2300), THEN ON TRACK 049.46/5.91 TO CROSS PNFLD AT 6000 AND AT 210 KIAS (MEA 2300), THEN ON TRACK 139.49/7.00 TO ZASNI (MEA 2100), THEN ON TRACK 139.49. EXPECT RADAR VECTORS TO FINAL APPROACH COURSE.



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Arrival Name	Number	STAR Computer Code	Superseded Number	Dated	Effective Date
SMUKE (RNAV)	TWO	RAYCR.SMUKE2	ONE	5 Mar 2015	10 NOV 2016

PROCEDURAL DATA NOTES:

NOTE: RADAR REQUIRED

NOTE: RNAV 1

NOTE: DME/DME/IRU OR GPS REQUIRED

NOTE: Expect descend via clearance and landing direction assignment by Indianapolis Center. Approach will assign landing Rwy.

NOTE: For non-GPS equipped aircraft landing Rwy 23L; SHB DME must be operational.

NOTE: For non-GPS equipped aircraft landing Rwy 23R; SHB and VHP DMEs must be operational.

FIXES AND/OR HOLDING PATTERNS:

CHART HOLDING AT RACYR: HOLD SW, LT, 034.38 INBOUND, 10 NM LEGS

CHART HOLDING AT EMBRR: HOLD SW, LT, 034.63 INBOUND, 10 NM LEGS

CHART HOLDING AT GAMLE: HOLD SW, LT, 035.27 INBOUND, 10 NM LEGS

COMMUNICATIONS:

IND APP CON, ATIS

AIRPORTS SERVED:

INDIANAPOLIS INTL , INDIANAPOLIS, IN

LOST COMMUNICATIONS PROCEDURE:

CHART LOST COMMUNICATION: IN THE EVENT OF LOST COMMUNICATION PRIOR TO RUNWAY ASSIGNMENT, EXECUTE ILS OR LOC RWY 23R APPROACH.

REMARKS:ADDITIONAL FLIGHT DATA:

DME/DME ASSESSMENT: SAT (RNP 2.0)

REFERENCE MAGNETIC VARIATION = KIND 05W/2015

FLIGHT INSPECTED BY:

ROBIN CAUDLE

Name

Organization

7/30/2016

Date

Digitally signed by
JACOB POWERS
Sep 12, 2016

Signature

DEVELOPED BY:

Thomas Dury

Name

Airspace and Procedures Manager, Indianapolis
ARTCC

Organization

Date

Digitally signed by
JACOB POWERS
Sep 12, 2016

Signature

APPROVED BY:

TONY LAWSON

Name

AJV-542

Organization

Date

Digitally signed by
JACOB POWERS
Sep 12, 2016

Signature

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SMUKE (RNAV)	TWO	RAYCR.SMUKE2	ONE	5 Mar 2015	10 NOV 2016

CHANGES:

1. Change Altitude restriction at OLIPE from AT/ABOVE FL240 TO FL240BFL260.
2. Change Altitude restriction at GAMLE from 15000BFL230 to 15000BFL210.
3. Change Altitude restriction at RAYCR from AT/ABOVE 12000 to 12000BFL190.
4. Added holding at EMBRR and GAMLE.
5. Added WOOTE to TERGE and EMBRR transitions.
6. Removed LISLE from and added ATOTE to the WIDAM transition.
7. Moved SMUKE WP 0.90 NM SW to the middle of the common route.
8. Moved FIIRE WP 6.72 NM NE to the end of the common route and removed the AT/ABOVE 9000 altitude restriction.
9. Removed AXURE WP and moved its altitude restriction down track to new waypoints.
10. Added CHERZ, EDIIE, WOTSN WPs with altitude restrictions AT/ABOVE 11000 to newly reconfigured runway transitions.
11. Added Lost Communication instructions.
12. Added "Expect descend via" note.

REASONS:

1. ATC request to manage vertical profile more efficiently.
2. ATC request to manage vertical profile more efficiently.
3. ATC request to manage vertical profile more efficiently.
4. Holding patterns needed at EMBRR and GAMLE WPs.
5. ATC request to deconflict with SDF RNAV STARs.
6. ATC request to remove confusing WP name and replace with ATOTE.
7. ATC and industry request to manage vertical profile.
8. ATC and industry request to manage vertical profile and to move the end of the common route further into approach control airspace.
9. ATC and industry request to manage vertical profile.
10. ATC and industry request to manage vertical profile for runways 14, 23L, 23R, and 32 transitions.
11. ATC and industry request to manage crew expectations and provide standard procedures in the event of lost communication.
12. ATC request to mitigate pilot requests for clearance and runway assignments.

08/17/16: This is updated copy of the form developed on 06/10/2016.

1. Added Critical DME notes for non-GPS equipped aircraft landing Rwy 23L/R.

NOTE: For non-GPS equipped aircraft landing Rwy 23L; SHB DME must be operational.

NOTE: For non-GPS equipped aircraft landing Rwy 23R; SHB and VHP DMEs must be operational.



US DEPARTMENT of TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

STAR (DATA RECORD)

Arrival Name SMUKE (RNAV)		Number TWO		STAR Computer Code RAYCR.SMUKE2		Superseded Number ONE		Dated 5 Mar 2015	Effective Date 10 NOV 2016
FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS
En Route Transition									
EMBRR	383908.28N / 0871411.39W	Y		IF					EMBRR.SMUKE2
WOOTE	384952.18N / 0870612.05W	Y	FB	TF	030.20	12.41			
GAMLE	385719.15N / 0870037.91W	Y	FB	TF	030.27	08.62	15000BFL210		
RACYR	390642.57N / 0865350.64W	Y	FB	TF	029.38	10.77	12000BFL190		
En Route Transition									
TERGE	375542.47N / 0874544.19W	Y		IF					TERGE.SMUKE2
EMBRR	383908.28N / 0871411.39W	Y	FB	TF	029.63	49.99			
WOOTE	384952.18N / 0870612.05W	Y	FB	TF	030.20	12.41			
GAMLE	385719.15N / 0870037.91W	Y	FB	TF	030.27	08.62	15000BFL210		
RACYR	390642.57N / 0865350.64W	Y	FB	TF	029.38	10.77	12000BFL190		
En Route Transition									
WIDAM	385513.34N / 0882853.75W	Y		IF					WIDAM.SMUKE2
PAAAM	385712.09N / 0881310.16W	Y	FB	TF	080.76	12.43			
OLIPE	385821.98N / 0880343.09W	Y	FB	TF	080.98	07.46	FL240BFL260		
ATOTE	390434.26N / 0871223.10W	Y	FB	TF	080.92	40.48			
RACYR	390642.57N / 0865350.64W	Y	FB	TF	081.48	14.59	12000BFL190		
Common Route									
RACYR	390642.57N / 0865350.64W	Y		IF			12000BFL190		RACYR.SMUKE2
SMUKE	391536.90N / 0864654.98W	Y	FB	TF	031.15	10.40			
FIIRE	392409.40N / 0863905.13W	Y	FB	TF	035.41	10.48			
Runway Transition									
FIIRE	392409.40N / 0863905.13W	Y		IF					
WESLE	392815.20N / 0863600.37W	Y	FB	TF	030.22	04.74	AT/ABOVE 6000		

QUALITY
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CHECKED

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STAR (DATA RECORD)

Arrival Name SMUKE (RNAV)		Number TWO		STAR Computer Code RAYCR.SMUKE2		Superseded Number ONE		Dated 5 Mar 2015	Effective Date 10 NOV 2016
FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS
WAAYN	393257.00N / 0863113.67W	Y	FB	TF	038.22	05.97	AT/ABOVE 5000	AT 210K	
KIND:RWY 05L									
Runway Transition									
FIIRE	392409.40N / 0863905.13W	Y		IF					
WESLE	392815.20N / 0863600.37W	Y	FB	TF	030.22	04.74	AT/ABOVE 6000		
IUUU	393241.79N / 0863006.06W	Y	FB	TF	045.80	06.37	AT/ABOVE 5000	AT 210K	
KIND:RWY 05R									
Runway Transition									
FIIRE	392409.40N / 0863905.13W	Y		IF					
EDIIE	392553.56N / 0863720.36W	Y	FB	TF	037.95	02.20	AT/ABOVE 11000		
COCOO	392737.17N / 0863536.05W	Y	FB	TF	037.97	02.19	AT/ABOVE 10000		
CIRAM	393604.77N / 0862630.19W	Y	FB	TF	039.74	11.00	AT/ABOVE 7000	AT 230K	
PNFLD	394017.94N / 0862108.52W	Y	FB	TF	044.46	05.91	AT 6000	AT 210K	
WONOK	394512.96N / 0862736.21W	Y	FO	TF	314.61	07.00			
KIND:RWY 14				FM	314.61				RECOMMENDED NAVAID: ROD VORTAC
Runway Transition									
FIIRE	392409.40N / 0863905.13W	Y		IF					
CHERZ	392642.81N / 0863418.28W	Y	FB	TF	055.39	04.50	AT/ABOVE 11000		
TTKAY	392908.48N / 0862945.24W	Y	FB	TF	055.44	04.28	AT/ABOVE 10000		
EDODE	393622.38N / 0861814.30W	Y	FB	TF	050.89	11.47	AT/ABOVE 7000	AT 230K	
KNIGT	394006.75N / 0861209.40W	Y	FB	TF	051.47	06.00	AT 6000	AT 210K	
RAMEY	394444.58N / 0860614.30W	Y	FO	TF	044.60	06.50			
KIND:RWY 23L				FM	044.60				RECOMMENDED NAVAID: ROD VORTAC
Runway Transition									
FIIRE	392409.40N / 0863905.13W	Y		IF					
WOTSN	392809.05N / 0863624.10W	Y	FB	TF	027.51	04.50	AT/ABOVE 11000		

QUALITY
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SMUKE (RNAV)	TWO	RAYCR.SMUKE2	ONE	5 Mar 2015	10 NOV 2016

FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS
DUBBX	393225.01N / 0863331.72W	Y	FB	TF	027.54	04.81	AT/ABOVE 10000		
BLSTR	394208.88N / 0862539.26W	Y	FB	TF	032.00	11.47	AT/ABOVE 7000	AT 230K	
PETYN	394717.16N / 0862136.14W	Y	FB	TF	031.31	06.01	AT 6000	AT 210K	
ZOSAR	395153.24N / 0861538.30W	Y	FO	TF	044.95	06.50			
KIND:RWY 23R				FM	044.95				RECOMMENDED NAVAID: ROD VORTAC

Runway Transition

FIIRE	392409.40N / 0863905.13W	Y		IF					
EDIIE	392553.56N / 0863720.36W	Y	FB	TF	037.95	02.20	AT/ABOVE 11000		
COCOO	392737.17N / 0863536.05W	Y	FB	TF	037.97	02.19	AT/ABOVE 10000		
CIRAM	393604.77N / 0862630.19W	Y	FB	TF	039.74	11.00	AT/ABOVE 7000	AT 230K	
PNFLD	394017.94N / 0862108.52W	Y	FB	TF	044.46	05.91	AT 6000	AT 210K	
ZASNI	393523.19N / 0861440.95W	Y	FO	TF	134.49	07.00			
KIND:RWY 32				FM	134.49				RECOMMENDED NAVAID: ROD VORTAC