

US Department of Transportation Federal Aviation Administration		STAR - Standard Terminal Arrival				1. Bearings, headings, courses and radials are listed to the nearest hundredth (e.g. 360.00) 2. Distances are in nautical miles to nearest hundredth (e.g. 00.00) 3. Altitudes are minimum altitudes unless otherwise indicated		
(1) Transition Routes								
(a) Transition Name	(b) Transition Computer Codes	(c) From RNAV WP / FIX / NAVAID	(d) To RNAV WP / FIX / NAVAID	(e) Mag Course / Distance	(f) MEA	(g) MOCA	(h) MAA	(i) Crossing Altitudes / Fixes
LEGGO	LEGGO.GRAVZ1	LEGGO	LEGGO					
			GRAVZ	219.36/25.14	12000	4000		
PHILIPSBURG	PSB.GRAVZ1	PSB VORTAC	PSB VORTAC					
			GRAVZ	162.00/67.38	12000	4900		
(2) Arrival Route Description: FROM GRAVZ ON TRACK 228.11/6.00 TO CROSS RIKTR AND AT/ABOVE 10000 AT/BELOW 12000 (MEA 10000), THEN ON TRACK 228.06/13.40 TO CROSS FSTER AT 10000 (MEA 10000). LANDING RWY 01C, RWY 1L: FROM FSTER ON TRACK 189.75/6.71 TO ADAAR (MEA 7000), THEN ON TRACK 190.89/9.45 TO CROSS IDORE AT 7000 (MEA 7000), THEN ON TRACK 191.11/15.00 TO CROSS KUKSE AT 5000 (MEA 5000), THEN ON TRACK 191.11/12.77 TO ELISN (MEA 3000), THEN ON TRACK 190.55/18.10 TO MIKEJ (MEA 3000), THEN ON TRACK 190.55. EXPECT RADAR VECTORS TO FINAL APPROACH COURSE. Continued on block 16...								
(3) Procedural Data Notes: NOTE: RADAR REQUIRED. NOTE: RNAV 1. NOTE: DME/DME/IRU OR GPS REQUIRED. NOTE: TURBOJET AIRCRAFT ONLY. NOTE: MAINTAIN LAST ASSIGNED ALTITUDE UNTIL CLEARED TO DESCEND VIA GRAVZ ONE STAR.								
(4) Fixes and/or Holding Patterns: CHART HOLDING AT GRAVZ, N, LT, 162.00 INBOUND, 7 NM LEGS, 210 KIAS.								
(5) Communications: POTOMAC APP CON: 133.0/288.35 WASHINGTON DULLES INT'L ATIS: 134.85								
								
(6) Arrival Name GRAVZ RNAV	(7) Number ONE	(8) STAR Computer Code GRAVZ.GRAVZ1	(9) Superseded Nr. NONE	(10) Dated	(11) Effective Date 18 SEP 2014			

(12) Airports Served					
Airport Name WASHINGTON DULLES INTL		City/State WASHINGTON, DC			
Airport Name		City/State			
Airport Name		City/State			
Airport Name		City/State			
Airport Name		City/State			
Airport Name		City/State			
(13) Lost Communications Procedure:					
(14) Remarks: THE AREA BETWEEN LITEY AND DADEY IS KNOWN AS A MOUNTAINOUS AREA BUT NOT PRECIPITOUS AND THERE HAVE BEEN NO REPORTABLE WIND ABNORMALITIES; THEREFORE WE ARE TAKING A 500' ROC REDUCTION FROM THE ROC TO MAKE THE MEA 3000. SEE FIG FOR GRAPHIC DEPICTION.					
(15) Additional Flight Data: DME/DME ASSESSMENT: SAT (RNP 2.0). REFERENCE MAGNETIC VARIATION = KIAD 10W/2000 CHART: R-4009					
					
(6) Arrival Name GRAVZ RNAV	(7) Number ONE	(8) STAR Computer Code GRAVZ.GRAVZ1	(9) Superseded Nr. NONE	(10) Dated	(11) Effective Date 18 SEP 2014

(16) Continuation:**(2) Arrival Route Description:**

LANDING RWY 01R: FROM FSTER ON TRACK 158.57/18.03 TO CROSS SIGBE AT 7000 (MEA 7000), THEN ON TRACK 188.92/8.65 TO CROSS MOWAT AT 5000 (MEA 5000), THEN ON TRACK 188.90/6.10 TO CROSS HUSEL AT 4000 (MEA 4000), THEN ON TRACK 189.88/15.37 TO YACKK (MEA 3000), THEN ON TRACK 190.95/13.71 TO TICON (MEA 3000), THEN ON TRACK 190.95. EXPECT RADAR VECTORS TO FINAL APPROACH COURSE.

LANDING RWY 19C: FROM FSTER ON TRACK 189.75/6.71 TO ADAAR (MEA 7000), THEN ON TRACK 166.13/12.85 TO COVUR (MEA 5000), THEN ON TRACK 190.71/7.97 TO CROSS HOOSR AT/ABOVE 5000 (MEA 4000). THEN INTERCEPT RWY 19C LOCALIZER OR AS ASSIGNED BY ATC.

LANDING RWY 19L: FROM FSTER ON TRACK 189.75/6.71 TO ADAAR (MEA 7000), THEN ON TRACK 161.84/13.34 TO LITEY (MEA 5000), THEN ON TRACK 190.68/7.65 TO CROSS DADEY AT/ABOVE 3000 (MEA 3000). THEN INTERCEPT RWY 19L LOCALIZER OR AS ASSIGNED BY ATC.

LANDING RWY 19R: FROM FSTER ON TRACK 189.75/6.71 TO ADAAR (MEA 7000), THEN ON TRACK 169.08/12.57 TO REXOE (MEA 5000), THEN ON TRACK 190.65/7.12 TO CROSS BEEZY AT/ABOVE 4000 (MEA 4000). THEN INTERCEPT RWY 19R LOCALIZER OR AS ASSIGNED BY ATC.

(17) Changes:**(18) Reasons for Changes:****(6) Arrival Name**

GRAVZ RNAV

(7) Number

ONE

(8) STAR Computer Code

GRAVZ.GRAVZ1

(9) Superseded Nr.

NONE

(10) Dated**(11) Effective Date**

18 SEP 2014

US Department of Transportation Federal Aviation Administration							RNAV STAR (Data Record)		
(1) FIX/NAVAID	(2) LAT/LONG	(3) C	(4) FO/FB	(5) LEG	(6) TC	(7) DIST	(8) ALTITUDE	(9) SPEED	(10) REMARKS
En Route Transition									
LEGGO	401716.01N / 0770225.65W	Y		IF					LEGGO.GRAVZ1
GRAVZ	395519.21N / 0771826.94W	Y	FB	TF	209.36	25.14			
En Route Transition									
PSB VORTAC	405458.53N / 0775933.78W	Y		IF					PSB.GRAVZ1
GRAVZ	395519.21N / 0771826.94W	Y	FB	TF	152.00	67.38			
Common Route									
GRAVZ	395519.21N / 0771826.94W	Y		IF					
RIKTR	395035.61N / 0772315.37W	Y	FB	TF	218.11	06.00	AT/ABOVE 10000, AT/BELOW 12000		
FSTER	394001.70N / 0773357.07W	Y	FB	TF	218.06	13.40	AT 10000		
Runway Transition									
FSTER	394001.70N / 0773357.07W	Y		IF			AT 10000		
ADAAR	393318.64N / 0773354.83W	Y	FB	TF	179.75	06.71			
(11) Arrival Name GRAVZ RNAV		(12) Number ONE		(13) STAR Computer Code GRAVZ.GRAVZ1		(14) Superseded Nr. NONE		(15) Dated	(16) Effective Date 18 SEP 2014

US Department of Transportation Federal Aviation Administration							RNAV STAR (Data Record)		
(1) FIX/NAVAID	(2) LAT/LONG	(3) C	(4) FO/FB	(5) LEG	(6) TC	(7) DIST	(8) ALTITUDE	(9) SPEED	(10) REMARKS
IDORE	392351.50N / 0773406.19W	Y	FB	TF	180.89	09.45	AT 7000		
KUKSE	390850.86N / 0773428.65W	Y	FB	TF	181.11	15.00	AT 5000		
ELISN	385604.35N / 0773447.64W	Y	FB	TF	181.11	12.77			
MIKEJ	383757.45N / 0773500.92W	Y	FO	TF	180.55	18.10			
KIAD:RWY 01C				FM	180.55				
Runway Transition									
FSTER	394001.70N / 0773357.07W	Y		IF			AT 10000		
ADAAR	393318.64N / 0773354.83W	Y	FB	TF	179.75	06.71			
IDORE	392351.50N / 0773406.19W	Y	FB	TF	180.89	09.45	AT 7000		
KUKSE	390850.86N / 0773428.65W	Y	FB	TF	181.11	15.00	AT 5000		
ELISN	385604.35N / 0773447.64W	Y	FB	TF	181.11	12.77			
MIKEJ	383757.45N / 0773500.92W	Y	FO	TF	180.55	18.10			
KIAD:RWY 01L				FM	180.55				
Runway Transition									
(11) Arrival Name GRAVZ RNAV		(12) Number ONE		(13) STAR Computer Code GRAVZ.GRAVZ1		(14) Superseded Nr. NONE		(15) Dated	(16) Effective Date 18 SEP 2014

US Department of Transportation Federal Aviation Administration							RNAV STAR (Data Record)		
(1) FIX/NAVAID	(2) LAT/LONG	(3) C	(4) FO/FB	(5) LEG	(6) TC	(7) DIST	(8) ALTITUDE	(9) SPEED	(10) REMARKS
FSTER	394001.70N / 0773357.07W	Y		IF			AT 10000		
SIGBE	392437.20N / 0772149.20W	Y	FB	TF	148.57	18.03	AT 7000		
MOWAT	391557.60N / 0772136.60W	Y	FB	TF	178.92	08.65	AT 5000		
HUSEL	390951.60N / 0772127.60W	Y	FB	TF	178.90	06.10	AT 4000		
YACKK	385428.80N / 0772125.20W	Y	FB	TF	179.88	15.37			
TICON	384045.60N / 0772142.60W	Y	FO	TF	180.95	13.71			
KIAD:RWY 01R				FM	180.95				
Runway Transition									
FSTER	394001.70N / 0773357.07W	Y		IF			AT 10000		
ADAAR	393318.64N / 0773354.83W	Y	FB	TF	179.75	06.71			
COVUR	392132.66N / 0772712.49W	Y	FB	TF	156.13	12.85			
HOOSR	391334.29N / 0772720.15W	Y	FB	TF	180.71	07.97	AT/ABOVE 5000		
KIAD:RWY 19C									
Runway Transition									
(11) Arrival Name GRAVZ RNAV		(12) Number ONE		(13) STAR Computer Code GRAVZ.GRAVZ1		(14) Superseded Nr. NONE		(15) Dated	(16) Effective Date 18 SEP 2014

US Department of Transportation Federal Aviation Administration							RNAV STAR (Data Record)		
(1) FIX/NAVAID	(2) LAT/LONG	(3) C	(4) FO/FB	(5) LEG	(6) TC	(7) DIST	(8) ALTITUDE	(9) SPEED	(10) REMARKS
FSTER	394001.70N / 0773357.07W	Y		IF			AT 10000		
ADAAR	393318.64N / 0773354.83W	Y	FB	TF	179.75	06.71			
LITEY	392131.86N / 0772547.63W	Y	FB	TF	151.84	13.34			
DADEY	391352.68N / 0772554.59W	Y	FB	TF	180.68	07.65	AT/ABOVE 3000		
KIAD:RWY 19L									
Runway Transition									
FSTER	394001.70N / 0773357.07W	Y		IF			AT 10000		
ADAAR	393318.64N / 0773354.83W	Y	FB	TF	179.75	06.71			
REXOE	392133.17N / 0772807.54W	Y	FB	TF	159.08	12.57			
BEEZY	391425.81N / 0772813.81W	Y	FB	TF	180.65	07.12	AT/ABOVE 4000		
KIAD:RWY 19R									
(11) Arrival Name GRAVZ RNAV		(12) Number ONE		(13) STAR Computer Code GRAVZ.GRAVZ1		(14) Superseded Nr. NONE		(15) Dated	(16) Effective Date 18 SEP 2014

**US Department of Transportation
Federal Aviation Administration**

STAR (Data Record)

ARINC PACKET - 424-18 - STAR

[illegible][illegible][illegible][illegible]

(11) Arrival Name GRAVZ RNAV	(12) Number ONE	(13) STAR Computer Code GRAVZ.GRAVZ1	(14) Superseded Nr. NONE	(15) Dated	(16) Effective Date 18 SEP 2014
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STAR (Data Record)

[illegible]Page 6 of 10

**US Department of Transportation
Federal Aviation Administration**
STAR (Data Record)

SUSAP KIADK6GRW01L	0094000107	N38564188W077282932-0200	+0058300296000054150IIIOIU3
SUSAP KIADK6GRW01R	0115000107	N38552553W077261122-0200	+0063200312000053150IIAD3
SUSAP KIADK6GRW19C	0115001907	N38581431W077273355+0200	+0049900269000054150IIDLX3
SUSAP KIADK6GRW19L	0115001907	N38571919W077260953+0200	+0057500293000056150IISGC2
SUSAP KIADK6GRW19R	0094001907	N38581478W077282798+0200	+0052500277000055150IISU3

(11) Arrival Name	(12) Number	(13) STAR Computer Code	(14) Superseded Nr.	(15) Dated	(16) Effective Date
GRAVZ RNAV	ONE	GRAVZ.GRAVZ1	NONE		18 SEP 2014

**US Department of Transportation
Federal Aviation Administration**
STAR (Data Record)

ARINC SUMMARY - 424-18 - STAR

ROUTES	TRANSITION	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG (TRUE)	DISTANCE	ALTITUDE	SPEED
	LEGGO	LEGGO	010		IF		FB					
	LEGGO	GRAVZ	020		TF		FB	1.0				
	PSB	PSB	010		IF		FB					
	PSB	GRAVZ	020		TF		FB	1.0				
		GRAVZ	010		IF		FB					
		RIKTR	020		TF		FB	1.0			BT 1200010000	
		FSTER	030		TF		FB	1.0			AT 10000	
	RW01C	FSTER	010		IF		FB				AT 10000	
	RW01C	ADAAR	020		TF		FB	1.0				
	RW01C	IDORE	030		TF		FB	1.0			AT 07000	
	RW01C	KUKSE	040		TF		FB	1.0			AT 05000	
	RW01C	ELISN	050		TF		FB	1.0				
	RW01C	MIKEJ	060		TF		FO	1.0				
	RW01C	MIKEJ	070		FM		FB		190.6()			
	RW01L	FSTER	010		IF		FB				AT 10000	
	RW01L	ADAAR	020		TF		FB	1.0				
	RW01L	IDORE	030		TF		FB	1.0			AT 07000	
	RW01L	KUKSE	040		TF		FB	1.0			AT 05000	
	RW01L	ELISN	050		TF		FB	1.0				
	RW01L	MIKEJ	060		TF		FO	1.0				
	RW01L	MIKEJ	070		FM		FB		190.6()			
	RW01R	FSTER	010		IF		FB				AT 10000	
	RW01R	SIGBE	020		TF		FB	1.0			AT 07000	
	RW01R	MOWAT	030		TF		FB	1.0			AT 05000	
	RW01R	HUSEL	040		TF		FB	1.0			AT 04000	
	RW01R	YACKK	050		TF		FB	1.0				
	RW01R	TICON	060		TF		FO	1.0				
	RW01R	TICON	070		FM		FB		191.0()			
	RW19C	FSTER	010		IF		FB				AT 10000	
	RW19C	ADAAR	020		TF		FB	1.0				
	RW19C	COVUR	030		TF		FB	1.0				
	RW19C	HOOSR	040		TF		FB	1.0			AA 05000	
	RW19L	FSTER	010		IF		FB				AT 10000	
	RW19L	ADAAR	020		TF		FB	1.0				
	RW19L	LITEY	030		TF		FB	1.0				
	RW19L	DADEY	040		TF		FB	1.0			AA 03000	
	RW19R	FSTER	010		IF		FB				AT 10000	
	RW19R	ADAAR	020		TF		FB	1.0				

**(11)
Arrival Name**
GRAVZ RNAV

**(12)
Number**
ONE

**(13)
STAR Computer Code**
GRAVZ.GRAVZ1

**(14)
Superseded Nr.**
NONE

**(15)
Dated**

**(16)
Effective Date**
18 SEP 2014

**US Department of Transportation
Federal Aviation Administration**
STAR (Data Record)

RW19R	REXOE	030	TF	FB	1.0	
RW19R	BEEZY	040	TF	FB	1.0	AA 04000

POINT DATA	WAYPOINT	LAT IN SECS	LONG IN SECS	LAT IN MINS	LONG IN MINS
	ADW	N384825.99	W0765158.52	N3848.433	W07651.975
	PSB	N405458.53	W0775933.78	N4054.976	W07759.563
	ADAAR	N393318.64	W0773354.83	N3933.311	W07733.914
	BEEZY	N391425.81	W0772813.81	N3914.430	W07728.230
	COVUR	N392132.66	W0772712.49	N3921.544	W07727.208
	DADEY	N391352.68	W0772554.59	N3913.878	W07725.910
	ELISN	N385604.35	W0773447.64	N3856.073	W07734.794
	FSTER	N394001.70	W0773357.07	N3940.028	W07733.951
	GRAVZ	N395519.21	W0771826.94	N3955.320	W07718.449
	HOOSR	N391334.29	W0772720.15	N3913.572	W07727.336
	HUSEL	N390951.60	W0772127.60	N3909.860	W07721.460
	IDORE	N392351.50	W0773406.19	N3923.858	W07734.103
	KUKSE	N390850.86	W0773428.65	N3908.848	W07734.478
	LEGGO	N401716.01	W0770225.65	N4017.267	W07702.428
	LITEY	N392131.86	W0772547.63	N3921.531	W07725.794
	MIKEJ	N383757.45	W0773500.92	N3837.958	W07735.015
	MOWAT	N391557.60	W0772136.60	N3915.960	W07721.610
	REXOE	N392133.17	W0772807.54	N3921.553	W07728.126
	RIKTR	N395035.61	W0772315.37	N3950.594	W07723.256
	SIGBE	N392437.20	W0772149.20	N3924.620	W07721.820
	TICON	N384045.60	W0772142.60	N3840.760	W07721.710
	YACKK	N385428.80	W0772125.20	N3854.480	W07721.420
	RW01C	N385620.64	W0772735.20	N3856.344	W07727.587
	RW01L	N385641.88	W0772829.32	N3856.698	W07728.489
	RW01R	N385525.53	W0772611.22	N3855.426	W07726.187
	RW19C	N385814.31	W0772733.55	N3858.239	W07727.559
	RW19L	N385719.19	W0772609.53	N3857.320	W07726.159
	RW19R	N385814.78	W0772827.98	N3858.246	W07728.466

RUNWAY DATA	RWY	THRESHOLD ELEVATION	TCH
	RW01C	00286	54
	RW01L	00296	54
	RW01R	00312	53
	RW19C	00269	54
	RW19L	00293	56
	RW19R	00277	55

(11)
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NONE

(15)
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