

**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.
Ceilings are in feet above airport elevation. Distances are in nautical miles. Visibilities are in statute miles or feet RVR unless otherwise indicated.

<u>DP NAME</u>	<u>NUMBER</u>	<u>DP COMPUTER CODE</u>	<u>SUPERSEDED NUMBER</u>	<u>DATED</u>	<u>ACTUAL EFFECTIVE DATE</u>
HHOWE	FOUR	HHOWE4.HHOWE	THREE	12/05/2019	
<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 type="checkbox"/>	<input checked="" type="checkbox"/>

DP ROUTE DESCRIPTION:

DETROIT METRO WAYNE COUNTY (KDTW):

TAKEOFF RWY 3L: CLIMB ON HEADING 035.71 TO INTERCEPT COURSE 057.40 TO WNNGZ, THEN ON TRACK 107.99 TO CROSS PLYOF AT OR BELOW 7000, THEN ON TRACK 109.71 TO CROSS MCART AT OR BELOW 9000, THEN ON TRACK 109.78 TO CROSS MALTB AT OR ABOVE 2200...

TAKEOFF RWY 3R: CLIMB ON HEADING 035.71 TO INTERCEPT COURSE 054.43 TO WNNGZ, THEN ON TRACK 107.99 TO CROSS PLYOF AT OR BELOW 7000, THEN ON TRACK 109.71 TO CROSS MCART AT OR BELOW 9000, THEN ON TRACK 109.78 TO CROSS MALTB AT OR ABOVE 2200...

TAKEOFF RWY 4L: CLIMB ON HEADING 035.68 TO INTERCEPT COURSE 061.86 TO WNNGZ, THEN ON TRACK 107.99 TO CROSS PLYOF AT OR BELOW 7000, THEN ON TRACK 109.71 TO CROSS MCART AT OR BELOW 9000, THEN ON TRACK 109.78 TO CROSS MALTB AT OR ABOVE 2200...

TAKEOFF RWY 4R: CLIMB ON HEADING 035.70 TO INTERCEPT COURSE 060.77 TO WNNGZ, THEN ON TRACK 107.99 TO CROSS PLYOF AT OR BELOW 7000, THEN ON TRACK 109.71 TO CROSS MCART AT OR BELOW 9000, THEN ON TRACK 109.78 TO CROSS MALTB AT OR ABOVE 2200...

TAKEOFF RWY 21L: CLIMB ON HEADING 215.72 TO INTERCEPT COURSE 172.93 TO CROSS WINRS AT OR ABOVE 2500 AND AT OR BELOW 230 KIAS, THEN ON TRACK 093.68 TO CROSS USSIE AT OR ABOVE 4000, THEN ON TRACK 083.76 TO CROSS SUURF AT OR BELOW 7000, THEN ON TRACK 076.97 TO CROSS MALTB AT OR ABOVE 2200, THENCE...

TAKEOFF RWY 21R: CLIMB ON HEADING 215.72 TO INTERCEPT COURSE 174.91 TO CROSS WINRS AT OR ABOVE 2500 AND AT OR BELOW 230 KIAS, THEN ON TRACK 093.68 TO CROSS USSIE AT OR ABOVE 4000, THEN ON TRACK 083.76 TO CROSS SUURF AT OR BELOW 7000, THEN ON TRACK 076.97 TO CROSS MALTB AT OR ABOVE 2200, THENCE...

TAKEOFF RWY 22L: CLIMB ON HEADING 215.71 TO INTERCEPT COURSE 165.79 TO CROSS WINRS AT OR ABOVE 2500 AND AT OR BELOW 230 KIAS, THEN ON TRACK 093.68 TO CROSS USSIE AT OR ABOVE 4000, THEN ON TRACK 083.76 TO CROSS SUURF AT OR BELOW 7000, THEN ON TRACK 076.97 TO CROSS MALTB AT OR ABOVE 2200, THENCE...

TAKEOFF RWY 22R: CLIMB ON HEADING 215.69 TO INTERCEPT COURSE 160.96 TO CROSS WINRS AT OR ABOVE 2500 AND AT OR BELOW 230 KIAS, THEN ON TRACK 093.68 TO CROSS USSIE AT OR ABOVE 4000, THEN ON TRACK 083.76 TO CROSS SUURF AT OR BELOW 7000, THEN ON TRACK 076.97 TO CROSS MALTB AT OR ABOVE 2200, THENCE...

TAKEOFF RWY 27L: CLIMB ON HEADING 275.73 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THENCE...

TAKEOFF RWY 27R: CLIMB ON HEADING 275.72 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THENCE...

...ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION). MAINTAIN 17000, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.

WILLOW RUN (KYIP):

TAKEOFF RWY 5: CLIMB ON HEADING 052.70 TO 1220, THEN ON HEADING 300.00 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THENCE...

TAKEOFF RWY 9: CLIMB ON HEADING 094.55 TO 1220, THEN ON HEADING 300.00 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THENCE...

TAKEOFF RWY 23: CLIMB ON HEADING 232.72 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THENCE...

TAKEOFF RWY 27: CLIMB ON HEADING 274.56 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THENCE...

...ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION). MAINTAIN ATC ASSIGNED ALTITUDE, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.

ANN ARBOR MUNI (KARB):

TAKEOFF RWY 6: CLIMB ON HEADING 059.53 OR AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 24: CLIMB ON HEADING 239.53 OR AS ASSIGNED BY ATC, THENCE...

...FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THEN ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION). MAINTAIN ATC ASSIGNED ALTITUDE, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.



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COLEMAN A YOUNG MUNI (KDET):

TAKEOFF RWY 15: CLIMB ON HEADING 148.32 OR AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 33: CLIMB ON HEADING 328.33 TO 1800 THEN AS ASSIGNED BY ATC, THENCE...

...FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THEN ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION). MAINTAIN ATC ASSIGNED ALTITUDE, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.

CUSTER (KTTF):

TAKEOFF RWY 3: CLIMB ON HEADING 027.49 OR AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 21: CLIMB ON HEADING 207.50 OR AS ASSIGNED BY ATC, THENCE...

...FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THEN ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION). MAINTAIN ATC ASSIGNED ALTITUDE, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.

GROSSE ILE MUNI (KONZ):

TAKEOFF RWY 4: CLIMB ON HEADING 037.34 TO 1200 THEN AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 17: CLIMB ON HEADING 173.78 OR AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 22: CLIMB ON HEADING 217.34 OR AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 35: CLIMB ON HEADING 005.78 TO 1800 THEN AS ASSIGNED BY ATC, THENCE...

...FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THEN ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION). MAINTAIN ATC ASSIGNED ALTITUDE, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.

LIVINGSTON COUNTY SPENCER J HARDY (KOZW):

TAKEOFF RWY 13: CLIMB ON HEADING 132.35 OR AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 31: CLIMB ON HEADING 312.36 OR AS ASSIGNED BY ATC, THENCE...

...FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THEN ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION). MAINTAIN ATC ASSIGNED ALTITUDE, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.

OAKLAND COUNTY INTL (KPTK):

TAKEOFF RWY 9L: CLIMB ON HEADING 094.66 OR AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 9R: CLIMB ON HEADING 094.63 OR AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 27L: CLIMB ON HEADING 274.65 OR AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 27R: CLIMB ON HEADING 274.68 OR AS ASSIGNED BY ATC, THENCE...

...FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THEN ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION). MAINTAIN ATC ASSIGNED ALTITUDE, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.

OAKLAND/TROY (KVLL):

TAKEOFF RWY 10: CLIMB ON HEADING 095.71 TO 1400 THEN AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 28: CLIMB ON HEADING 275.72 TO 1500 THEN AS ASSIGNED BY ATC, THENCE...

...FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THEN ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION). MAINTAIN ATC ASSIGNED ALTITUDE, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.



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SELFRIDGE ANGB (KMTC):

TAKEOFF RWY 1: CLIMB ON HEADING 007.47 OR AS ASSIGNED BY ATC, THENCE...

TAKEOFF RWY 19: CLIMB ON HEADING 187.47 OR AS ASSIGNED BY ATC, THENCE...

...FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THEN ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION). MAINTAIN ATC ASSIGNED ALTITUDE, 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>
BROKK	HHOWE4.BROKK	HHOWE	BROKK	TRACK 090.20	39.73	10000	2200	
LNCON	HHOWE4.LNCON	HHOWE	LNCON	TRACK 097.71	42.37	10000	2200	

PBN REQUIREMENT NOTES:

RNAV 1 - DME/DME/IRU OR GPS.

EQUIPMENT REQUIREMENT NOTES:

RADAR REQUIRED

PROCEDURAL DATA NOTES:

NOTE: TURBOJET DEPARTURES AT/ABOVE 10000, MAINTAIN 280K UNTIL ADVISED BY ATC.

NOTE: BROKK TRANSITION: FOR USE BY FLIGHTS FILED AT OR BELOW FL270, OR AS ASSIGNED BY ATC.

TAKEOFF MINIMUMS:

DETROIT METRO WAYNE COUNTY (KDTW):

RWY 27L, 27R: STANDARD.

RWY 3L, 3R, 4L, 4R, 21L, 21R, 22L, 22R: STANDARD WITH MINIMUM CLIMB OF 500 FT/NM TO 1146.

WILLOW RUN (KYIP):

RWY 23: STANDARD.

RWY 5, 9: STANDARD WITH MINIMUM CLIMB OF 500 FT/NM TO 1220.

RWY 27: STANDARD WITH MINIMUM CLIMB OF 209 FT/NM TO 1000.

ANN ARBOR MUNI (KARB):

RWY 12, 30: NA - ENVIRONMENTAL.

RWY 6, 24: STANDARD.

COLEMAN A YOUNG MUNI (KDET):

RWY 15, 33: STANDARD.

CUSTER (KTTF):

RWY 3, 21: STANDARD.

GROSSE ILE MUNI (KONZ):

RWY 4, 17, 22: STANDARD.

RWY 35: STANDARD WITH MINIMUM CLIMB OF 500 FT/NM TO 1100.

LIVINGSTON COUNTY SPENCER J HARDY (KOZW):

RWY 13, 31: STANDARD.



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OAKLAND COUNTY INTL (KPTK):
RWY 18, 36: NA - ENVIRONMENTAL.
RWY 9L, 9R, 27L, 27R: STANDARD.

OAKLAND/TROY (KVLL):
RWY 10: STANDARD.
RWY 28: STANDARD WITH MINIMUM CLIMB OF 476 FT/NM TO 1500.

SELFRIDGE ANGB (KMTTC):
RWY 1: STANDARD.
RWY 19: STANDARD WITH MINIMUM CLIMB OF 235 FT/NM TO 1500.

TAKEOFF OBSTACLES NOTES:
 SEE FORM 8260-15A, TAKEOFF MINIMUMS AND OBSTACLE DEPARTURE PROCEDURES (ODP).

CONTROLLING OBSTACLES:
WILLOW RUN (KYIP):
RWY 27: 903 FT MSL TOWER 421431.80N/0833411.49W.

COLEMAN A YOUNG MUNI (KDET):
 OBSTACLES MANDATING ODP ROUTE DEVELOPMENT:
RWY 33: 1749 FT MSL TOWER 422653.00N/0831023.00W.

GROSSE ILE MUNI (KONZ):
RWY 35: 1146 FT MSL STACK 420718.61N/0831050.62W.

OAKLAND/TROY (KVLL):
RWY 28: 905 FT MSL BUILDING 423232.54N/0831234.07W.
 OBSTACLES MANDATING ODP ROUTE DEVELOPMENT:
RWY 10, 28: 1724 FT MSL TOWER 422858.46N/0831218.94W.

SELFRIDGE ANGB (KMTTC):
RWY 19: 1246 FT MSL TOWER 423312.00N/0825315.00W.

MSA:
 KDTW: MSA FROM KDTW, 2800.
 KYIP: MSA FROM KYIP, 3000.
 KARB: MSA FROM KARB, 3000.
 KDET: MSA FROM KDET, 2800.
 KTTF: MSA FROM KTTF, 3100.
 KONZ: MSA FROM KONZ, 3100.
 KOZW: MSA FROM KOZW, 3000.
 KPTK: MSA FROM KPTK, 2900.
 KVLL: MSA FROM KVLL, 2900.
 KMTTC: MSA FROM KMTTC, 2800.

LOST COMMUNICATIONS PROCEDURES:

ADDITIONAL FLIGHT DATA:
DME/DME ASSESSMENT: SAT (RNP 2.0)
AIRPORT MV: DTW (P) 7W/2020, ARB 5W/1985, DET 5W/1980, MTC 6W/1985, ONZ 7W/2010, OZW 5W/1990, PTK 7W/2020, TTF 5W/1980, VLL 6W/1995, YIP 6W/1995.
DETROIT METRO WAYNE COUNTY - CHART: TOP ALTITUDE: 17000
ALL OTHER AIRPORTS - CHART: TOP ALTITUDE: ASSIGNED BY ATC.
CHART SPEED ICON MAXIMUM SPEED 230 KIAS AT WINRS.



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AIRPORTS SERVED:

<u>AIRPORT ID</u>	<u>CITY</u>	<u>STATE</u>
KDTW	DETROIT	MI
KYIP	DETROIT	MI
KARB	ANN ARBOR	MI
KDET	DETROIT	MI
KTTF	MONROE	MI
KONZ	DETROIT/GROSSE ILE	MI
KOZW	HOWELL	MI
KPTK	PONTIAC	MI
KVLL	TROY	MI
KMTC	MOUNT CLEMENS	MI

COMMUNICATIONS:

CHART: ATIS, AWOS/ASOS, CLNC DEL, GND CON, TWR, CTAF, CPDLC.

FIXES AND/OR NAVAIDS:

REMARKS:

- 100 FT MAXIMUM VEGETATION HEIGHT UTILIZED PER FPT CHECKLIST.
- WAIVER ON FILE: AFS-420 MEMORANDUM "WAIVER TO FAA ORDER 8260.58C PARAGRAPH 1-2-5.C.(3), MAXIMUM BANK ANGLE" DATED 01/31/2023.
- CHANGES TO THIS PROCEDURE MUST BE COORDINATED WITH NAVCANADA, AERONAUTICAL INFORMATION MANAGEMENT (AIM), AIMDATA@NAVCANADA.CA (CURRENT POC IS CHARLES SIMARD, 613-248-3819, SIMACHA@NAVCANADA.CA).
- ATC APPROVAL FOR 45 DEGREE MAX INTERCEPT AT FIX MALTB ABOVE FL245.
- KDTW CHART NOTE:** SEE ADDITIONAL REQUIREMENTS ON AAUP.
- KDTW RWY 3L, 3R, 4L, 4R, 21L, 21R, 22L, 22R DEPARTURES EARLY TURN AND SHORTENED ICA REQUIRED DUE TO SIMULTANEOUS DEPARTURES.
- KYIP RWY 5, 9 DEPARTURES EARLY TURN AND SHORTENED ICA REQUIRED DUE TO KDTW AIR TRAFFIC FLOW.
- MEA BASED ON LOWEST DME/DME COVERAGE.

FLIGHT INSPECTED BY

SCOTT WIEBE	<u>SIGNATURE</u> <i>Digitally signed by</i> ERIC N SUSKI Mar 18, 2024	<u>OFFICE</u> FPO	<u>DATE</u> 03/07/2024
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DEVELOPED BY

MICHAEL MCCARTNEY	<u>SIGNATURE</u> <i>Digitally signed by</i> MICHAEL A MCCARTNEY Jan 25, 2024	<u>OFFICE</u> AJV-A431	<u>DATE</u> 11/28/2023
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APPROVED BY

ERIC N SUSKI	<u>SIGNATURE</u> <i>Digitally signed by</i> BEV L BORDY Jan 26, 2024	<u>OFFICE</u> AJV-A431	<u>DATE</u>	<u>TITLE</u> MANAGER
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DP NAME	NUMBER	DP COMPUTER CODE	SUPERSEDED NUMBER	DATED	ACTUAL EFFECTIVE DATE
HHOWE	FOUR	HHOWE4.HHOWE	THREE	12/05/2019	

REQUIRED EFFECTIVE DATE

ROUTINE

COORDINATED WITH:

A4A ☒ **ALPA** ☒ **AOPA** ☒ **APA** ☒ **HAI** ☐ **NBAA** ☒ **OTHER:**ZOB, DTW APP CON, AMGR, NAVCANADA

CHANGES - REASONS:

1. AIRPORT NAME, CHANGED ALL KDTW AIRPORT NAME REFERENCES FROM DETROIT METROPOLITAN WAYNE COUNTY TO DETROIT METRO WAYNE COUNTY. - OFFICIAL NASR NAME
2. DELETED ALL CYQG DATA FROM DP ROUTE DESCRIPTION, TAKEOFF MINIMUMS, AND AIRPORTS SERVED. - AIRPORT REMOVED FROM SID PER NAVCANADA REQUEST.
3. DELETED KYIP RWY 5L, 23R REFERENCES AND CHANGED RUNWAY NUMBERS FROM RWY 5R TO RWY 5 AND FROM RWY 23L TO RWY 23 IN DP ROUTE DESCRIPTION AND TAKEOFF MINIMUMS. - RUNWAY 5L, 23R DECOMMISSIONED AND RWY 5R, 23L RENUMBERED ON 10/06/2022.
4. DELETED KDET RWY 7, 25 REFERENCES IN DP ROUTE DESCRIPTION, TAKEOFF MINIMUMS AND RWY 25 CONTROLLING OBSTACLE. - RUNWAY IS GOING TO BE DECOMMISSIONED.
5. CHANGED KVLL RWYS FROM RWY 9, 27 TO RWY 10, 28. - RUNWAYS WERE RENUMBERED ON 02/10/2021.
6. DP ROUTE DESCRIPTION, ALL RUNWAY TRANSITIONS, CHANGED FIX MALTB MINIMUM CROSSING ALTITUDE FROM 4000 TO 2200. - LOWERED TO OBSTACLE-BASED PER ATC REQUEST.
7. DP ROUTE DESCRIPTION, CHANGED KDTW RWY 3L, 3R TRANSITION TRACK ON FIX SWNDL TO FIX WERKN SEGMENT FROM TRACK 212.12 TO TRACK 212.11. - UPDATED EVALUATION.
8. DP ROUTE DESCRIPTION, CHANGED KDTW RWY 27L FROM "CLIMB ON HEADING 275.73 TO 1146, THEN ON HEADING 275.71 OR AS ASSIGNED FOR RADAR VECTORS" TO "CLIMB ON HEADING 275.73 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS". - EARLY TURN AND LNAV ENGAGEMENT ALTITUDE NOT REQUIRED, SEGMENTS CHANGED FROM VA-VM LEGS TO VM LEG; FORMAT IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.C.(7).
9. DP ROUTE DESCRIPTION, CHANGED KDTW RWY 27R FROM "CLIMB ON HEADING 275.72 TO 1146, THEN ON HEADING 275.70 OR AS ASSIGNED FOR RADAR VECTORS" TO "CLIMB ON HEADING 275.72 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS". - EARLY TURN AND LNAV ENGAGEMENT ALTITUDE NOT REQUIRED, SEGMENTS CHANGED FROM VA-VM LEGS TO VM LEG; FORMAT IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.C.(7).
10. DP ROUTE DESCRIPTION, DELETED KDTW TOP ALTITUDE VERBIAGE "OR AS ASSIGNED BY ATC". - KDTW HAS A NUMERIC TOP ALTITUDE 17000 CHARTED FOR ALL RUNWAYS.
11. DP ROUTE DESCRIPTION, CHANGED KYIP TAKEOFF RWY 5 FROM "CLIMB ON HEADING 053.70 TO 1220, THEN LEFT TURN HEADING 300.00 FOR RADAR VECTORS" TO "CLIMB ON HEADING 052.70 TO 1220, THEN ON HEADING 300.00 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS". - CLIMB ON HEADING MAG VAR CHANGED FROM KDTW (7W/2020) TO KYIP (6W/1995) IAW AJV-A MEMO "MAGNETIC VARIATION DOCUMENTATION FOR STANDARD INSTRUMENT DEPARTURES AND GRAPHIC OBSTACLE DEPARTURE PROCEDURES" DATED 07/15/2022; ADDED ATC ASSIGNED HEADINGS ON VM LEG PER ATC REQUEST; FORMAT IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.C.(7).
12. DP ROUTE DESCRIPTION, CHANGED KYIP TAKEOFF RWY 9 FROM "CLIMB ON HEADING 095.55 TO 1220, THEN LEFT TURN HEADING 300.00 FOR RADAR VECTORS" TO "CLIMB ON HEADING 094.55 TO 1220, THEN ON HEADING 300.00 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS". - CLIMB ON HEADING MAG VAR CHANGED FROM KDTW (7W/2020) TO KYIP (6W/1995) IAW AJV-A MEMO "MAGNETIC VARIATION DOCUMENTATION FOR STANDARD INSTRUMENT DEPARTURES AND GRAPHIC OBSTACLE DEPARTURE PROCEDURES" DATED 07/15/2022; ADDED ATC ASSIGNED HEADINGS ON VM LEG PER ATC REQUEST; FORMAT IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.C.(7).
13. DP ROUTE DESCRIPTION, CHANGED KYIP TAKEOFF RWY 23 FROM "CLIMB ON HEADING 233.72 TO 1220, THEN ON HEADING 233.70 FOR RADAR VECTORS" TO "CLIMB ON HEADING 232.72 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS". - EARLY TURN AND LNAV ENGAGEMENT ALTITUDE NOT REQUIRED, SEGMENT CHANGED FROM VA-VM TO VM LEG; CLIMB ON HEADING MAG VAR CHANGED FROM KDTW (7W/2020) TO KYIP (6W/1995) IAW AJV-A MEMO "MAGNETIC VARIATION DOCUMENTATION FOR STANDARD INSTRUMENT DEPARTURES AND GRAPHIC OBSTACLE DEPARTURE PROCEDURES" DATED 07/15/2022; ATC REQUESTED TO ADD ATC ASSIGNED HEADINGS ON VM LEG; FORMAT IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.C.(7).
14. DP ROUTE DESCRIPTION, CHANGED KYIP TAKEOFF RWY 27 FROM "CLIMB ON HEADING 275.57 TO 1220, THEN ON HEADING 275.56 FOR RADAR VECTORS" TO "CLIMB ON HEADING 274.56 OR AS ASSIGNED BY ATC, FOR RADAR VECTORS". - EARLY TURN AND LNAV ENGAGEMENT ALTITUDE NOT REQUIRED, SEGMENT CHANGED FROM VA-VM TO VM LEG; UPDATED RUNWAY SURVEY 12/20/2022; CLIMB ON HEADING MAG VAR CHANGED FROM KDTW (7W/2020) TO KYIP (6W/1995) IAW AJV-A MEMO "MAGNETIC VARIATION DOCUMENTATION FOR STANDARD INSTRUMENT DEPARTURES AND GRAPHIC OBSTACLE DEPARTURE PROCEDURES" DATED 07/15/2022; ATC REQUESTED TO ADD ATC ASSIGNED HEADINGS ON VM LEG; FORMAT IAW FAAO 8260.46J APPENDIX E. SECTION 1.2.C.(7).
15. DP ROUTE DESCRIPTION, KARB, KDET, KONZ, KOZW, KTTF, KPTK, KVLL AND KMTC, CHANGED ATC ASSIGNED HEADING VERBIAGE FROM "OR AS ASSIGNED" TO "OR AS ASSIGNED BY ATC", AND MOVED "FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 4000" FROM THE INDIVIDUAL RUNWAY DESCRIPTIONS TO THE SHARED ROUTE DESCRIPTIONS TO READ "...FOR RADAR VECTORS TO CROSS MALTB AT OR ABOVE 2200, THEN ON TRACK 093.88 TO HHOWE, THEN ON (TRANSITION)". - UPDATED VERBIAGE IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.C AND CONSOLIDATED SHARED ROUTINGS VERBIAGE; MALTB ALTITUDE LOWERED TO OBSTACLE-BASED PER ATC REQUEST.
16. TRANSITION ROUTES, ADDED MOCAS AND DELETED REMARK "MOCA(S) NOT CHARTED PER ATC REQUEST TO REDUCE CHART CLUTTER". - MOCA REQUIRED IAW FAAO 8260.46J APPENDIX E. SECTION 1.2.D.(8).
17. MOVED PBN NAV SPEC/SENSORS FROM PROCEDURAL DATA NOTES TO PBN REQUIREMENT NOTES AND UPDATED VERBIAGE FROM "NOTE: RNAV 1" AND "NOTE: DME/DME/IRU OR GPS REQUIRED" TO "RNAV 1 - DME/DME/IRU OR GPS". - DOCUMENTATION IAW FAAO 8260.46J PARAGRAPH 2-1-1.F.
18. MOVED "NOTE: RADAR REQUIRED" FROM PROCEDURAL DATA NOTES TO EQUIPMENT REQUIREMENT NOTES AND DELETED "NOTE:". - DOCUMENTATION IAW FAAO 8260.46J APPENDIX E. SECTION 1.2.F.
19. PROCEDURAL DATA NOTES, DELETED "NOTE: KDTW/KYIP DEPARTURES: IF UNABLE TO ACCEPT 500 FT PER NM CLIMB RATE, ADVISE CLEARANCE DELIVERY ON INITIAL CONTACT". - REDUNDANT AND NO LONGER NEEDED.
20. TAKEOFF MINIMUMS, CHANGED ALL CLIMB GRADIENT FORMATS FROM "FT PER NM" TO "FT/NM". - FORMAT IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.H.
21. TAKEOFF MINIMUMS, CHANGED KDTW RWY 27L AND 27R FROM "500 FT PER NM TO 1146" TO "STANDARD". - EARLY TURN AND LNAV ENGAGEMENT CLIMB GRADIENT NOT REQUIRED; LOWERED

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HHOWE	FOUR	HHOWE4.HHWE	THREE	12/05/2019	
TO OBSTACLE-BASED CLIMB GRADIENT; MATCHES ODP TAKEOFF MINIMUMS.					
22. TAKEOFF MINIMUMS, CHANGED KYIP RWY 23 FROM "500 FT PER NM TO 1220" TO "STANDARD" AND RWY 27 FROM "500 FT PER NM TO 1220" TO "209 FT/NM TO 1000". - EARLY TURN AND LNAV ENGAGEMENT CLIMB GRADIENT NOT REQUIRED; LOWERED TO OBSTACLE-BASED CLIMB GRADIENT AND MATCHES ODP TAKEOFF MINIMUMS.					
23. TAKEOFF MINIMUMS, KTTF, ADDED "RWY 3, 21:". - LISTED RUNWAYS AUTHORIZED STANDARD TAKEOFF MINIMUMS IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.H.(2).					
24. TAKEOFF MINIMUMS, KOZW, ADDED "RWY 13, 31:". - LISTED RUNWAYS AUTHORIZED STANDARD TAKEOFF MINIMUMS IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.H.(2).					
25. TAKEOFF MINIMUMS, INCREASED KMTC RWY 19 CLIMB GRADIENT FROM 234 FT PER NM TO 235 FT/NM. - UPDATED CALCULATIONS; CONTROLLING OBSTRUCTION 1246 FT MSL TOWER (26-001410) LAT/LONG CHANGED FROM 423315.00N/0825315.00W TO 423312.00N/0825315.00W (MOVED 303.71 FT SOUTH) AND ACCURACY CHANGED FROM 5D TO 4D BY OBSTACLE DATA TEAM.					
26. TAKEOFF OBSTACLE NOTES, ADDED 'COMMA' AFTER "SEE FORM 8260-15A". - FIXED PUNCTUATION IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.I.					
27. CONTROLLING OBSTACLES, KYIP RWY 27, CHANGED CONTROLLING OBSTRUCTION LAT/LONG FROM 421431.78N/0833411.47W TO 421431.80N/0833411.49W (MOVED 2.52 FT NORTHWEST). - UPDATED OBSTACLE DATA; TAKEOFF MINIMUMS DID NOT CHANGE.					
28. CONTROLLING OBSTACLES, KDET, ADDED VERBIAGE TO RWY 33 "OBSTACLES MANDATING ODP ROUTE DEVELOPMENT". - CLIMB GRADIENT IS STANDARD AND THIS OBSTACLE IS REASON FOR EXTENDED ICA; DOCUMENTED IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.J.(3).					
29. CONTROLLING OBSTACLES, KONZ, DELETED COMMA BETWEEN "STACK" AND LAT/LONG. - FIXED TYPO.					
30. CONTROLLING OBSTACLES, KVLL RWY 28, CHANGED CONTROLLING OBSTACLES FROM 940 FT MSL BLDG 423234.20N/0831235.50W (CG), 1749 FT MSL TOWER 422858.00N/0831219.00W (CGTA) TO 905 FT MSL BUILDING 423232.54N/0831234.07W. - UPDATED OBSTACLE EVALUATION AND RETAINED CLIMB GRADIENT AND CLIMB-TO ALTITUDE TO MATCH PUBLISHED ODP AND REDUCE PILOT CONFUSION.					
31. CONTROLLING OBSTACLES, KVLL, ADDED "OBSTACLES MANDATING ODP ROUTE DEVELOPMENT: RWY 10, 28: 1724 FT MSL TOWER 422858.46N/0831218.94W".- THIS UPDATED OBSTACLE IS REASON FOR EXTENDED ICA; DOCUMENTED IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.J.(3).					
32. CONTROLLING OBSTACLES, KMTC, CHANGED CONTROLLING OBSTRUCTION LAT/LONG FROM 423315.00N/0825315.00W TO 423312.00N/0825315.00W (MOVED 303.71 FT SOUTH). - DATABASE COORDINATES UPDATED BY OBSTACLE DATA TEAM.					
33. ADDED MSA AT ALL AIRPORTS. - REQUIRED IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.K.					
34. ADDITIONAL FLIGHT DATA, MAGNETIC VARIATION ADDED FOR ALL AIRPORTS AND UPDATED KDTW FORMAT FROM "REFERENCE MAG VAR; KDTW 7W/2020" TO "AIRPORT MV: DTW (P) 7W/2020". - REQUIRED ALL AIRPORTS AND DOCUMENTED IAW AJV-A MEMO "MAGNETIC VARIATION DOCUMENTATION FOR STANDARD INSTRUMENT DEPARTURES AND GRAPHIC OBSTACLE DEPARTURE PROCEDURES" DATED 07/15/2022.					
35. ADDITIONAL FLIGHT DATA, UPDATED TOP ALTITUDE FORMAT FROM "CHART: TOP ALTITUDE: KDTW 17000" TO " <u>DETROIT METRO WAYNE COUNTY</u> - CHART: TOP ALTITUDE: 17000" AND FROM "CHART: TOP ALTITUDE: ALL OTHER AIRPORTS ASSIGNED BY ATC" TO "ALL OTHER AIRPORTS - CHART: TOP ALTITUDE: ASSIGNED BY ATC". - FORMAT IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.M.(B).					
36. ADDITIONAL FLIGHT DATA, ADDED CHART SPEED ICON MAXIMUM SPEED 230 KIAS AT FIX WINRS. - REQUIRED IAW FAAO 8260.46J PARAGRAPH 2-1-1.E.(4)(B).					
37. AIRPORTS SERVED, DELETED AIRPORT NAMES. - NAMES NOT REQUIRED IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.N.					
38. COMMUNICATIONS, ADDED "CHART:" AND DELETED "DEP CON". - VERBIAGE REQUIRED AND DEP CON CHARTED AUTOMATICALLY IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.O.					
39. ADDED REMARK "ATC APPROVAL FOR 45 DEGREE MAX INTERCEPT AT FIX MALTB ABOVE FL245". - DTA CALCULATION WITH 16 DEGREE BANK ANGLE ABOVE FL245 EXCEEDS LEG LENGTH FROM FIX MALTB TO FIX HHOWE.					
40. MOVED KDTW AAUP FROM ADDITIONAL FLIGHT DATA TO REMARKS AND CHANGED VERBIAGE FROM "KDTW CHART: SEE ADDITIONAL REQUIREMENTS IN RNAV DEPARTURE AAUP" TO "KDTW CHART NOTE: SEE ADDITIONAL REQUIREMENTS ON AAUP". - MOVED AND FORMAT IAW FAAO 8260.46J APPENDIX E.SECTION 1.2.Q.(3).					

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

DP NAME					NUMBER	DP COMPUTER CODE	SUPERSEDED NUMBER	DATED	ACTUAL EFFECTIVE DATE
HHOWE					FOUR	HHOWE4.HHOWE	THREE	12/05/2019	
FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS
	DETROIT METRO WAYNE COUNTY (KDTW)								
RW03L (AER)	421228.21N/0832104.39W	N	-	-	-	-			CG 500 FT PER NM TO 1146
-	421436.03N/0831930.16W	-	-	VI	028.71	2.43			
WNNGZ	422003.77N/0831037.55W	Y	FB	CF	050.40	8.56			
PLYOF	421827.96N/0825936.51W	Y	FB	TF	100.99	8.33	AT/BELOW 7000		
MCCART	421726.01N/0825327.61W	Y	FB	TF	102.71	4.68	AT/BELOW 9000		
MALTB	421457.48N/0823851.48W	Y	FB	TF	102.78	11.12	AT/ABOVE 2200		
RW03R (AER)	421144.21N/0832106.49W	N	-	-	-	-			CG 500 FT PER NM TO 1146
-	421404.99N/0831922.74W	-	-	VI	028.71	2.67			
WNNGZ	422003.77N/0831037.55W	Y	FB	CF	047.43	8.83			
PLYOF	421827.96N/0825936.51W	Y	FB	TF	100.99	8.33	AT/BELOW 7000		
MCCART	421726.01N/0825327.61W	Y	FB	TF	102.71	4.68	AT/BELOW 9000		
MALTB	421457.48N/0823851.48W	Y	FB	TF	102.78	11.12	AT/ABOVE 2200		
RW04L (AER)	421207.82N/0832302.40W	N	-	-	-	-			CG 500 FT PER NM TO 1146
	421427.54N/0832119.53W	-	-	VI	028.68	2.65			
WNNGZ	422003.77N/0831037.55W	Y	FB	CF	054.86	9.72			
PLYOF	421827.96N/0825936.51W	Y	FB	TF	100.99	8.33	AT/BELOW 7000		
MCCART	421726.01N/0825327.61W	Y	FB	TF	102.71	4.68	AT/BELOW 9000		
MALTB	421457.48N/0823851.48W	Y	FB	TF	102.78	11.12	AT/ABOVE 2200		

QUALITY
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CHECKED

DP NAME				NUMBER		DP COMPUTER CODE		SUPERSEDED NUMBER		DATED		ACTUAL EFFECTIVE DATE	
HHOWE				FOUR		HHOWE4.HHOWE		THREE		12/05/2019			
FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS				
RW04R (AER)*	421212.78N/0832213.32W*	N	-	-	-	-	*DISPL THLD (509 FT) CG 500 FT PER NM TO 1146						
-	421446.08N/0832020.37W	-	-	VI	028.70	2.91							
WNNGZ	422003.77N/0831037.55W	Y	FB	CF	053.77	8.94							
PLYOF	421827.96N/0825936.51W	Y	FB	TF	100.99	8.33	AT/BELOW 7000						
MCCART	421726.01N/0825327.61W	Y	FB	TF	102.71	4.68	AT/BELOW 9000						
MALTB	421457.48N/0823851.48W	Y	FB	TF	102.78	11.12	AT/ABOVE 2200						
RW21L (AER)	421310.86N/0832002.65W	N	-	-	-	-	CG 500 FT PER NM TO 1146						
-	421050.18N/0832146.27W	-	-	VI	208.72	2.67							
WINRS	420542.02N/0832002.39W	Y	FB	CF	165.93	5.29	AT/ABOVE 2500	AT/BELOW 230K					
USSIE	420556.34N/0831427.74W	Y	FB	TF	086.68	4.16	AT/ABOVE 4000						
SUURF	420657.51N/0830837.76W	Y	FB	TF	076.76	4.46	AT/BELOW 7000						
MALTB	421457.48N/0823851.48W	Y	FB	TF	069.97	23.53	AT/ABOVE 2200						
RW21R (AER)	421341.86N/0832010.11W	N	-	-	-	-	CG 500 FT PER NM TO 1146						
-	421134.56N/0832143.90W	-	-	VI	208.72	2.42							
WINRS	420542.02N/0832002.39W	Y	FB	CF	167.91	6.01	AT/ABOVE 2500	AT/BELOW 230K					
USSIE	420556.34N/0831427.74W	Y	FB	TF	086.68	4.16	AT/ABOVE 4000						
SUURF	420657.51N/0830837.76W	Y	FB	TF	076.76	4.46	AT/BELOW 7000						
MALTB	421457.48N/0823851.48W	Y	FB	TF	069.97	23.53	AT/ABOVE 2200						

<u>DP NAME</u>		<u>NUMBER</u>		<u>DP COMPUTER CODE</u>		<u>SUPERSEDED NUMBER</u>		<u>DATED</u>	<u>ACTUAL EFFECTIVE DATE</u>
HHOWE		FOUR		HHOWE4.HHOWE		THREE		12/05/2019	
<u>FIX/NAVAID</u>	<u>LAT/LONG</u>	<u>C</u>	<u>FO/FB</u>	<u>LEG TYPE</u>	<u>TC</u>	<u>DIST (NM)</u>	<u>ALTITUDE</u>	<u>SPEED</u>	<u>REMARKS</u>
RW22L (AER)	421352.36N/0832059.97W	N	-	-	-	-			CG 500 FT PER NM TO 1146
-	421114.77N/0832256.02W	-	-	VI	208.71	2.99			
WINRS	420542.02N/0832002.39W	Y	FB	CF	158.79	5.95	AT/ABOVE 2500	AT/BELOW 230K	
USSIE	420556.34N/0831427.74W	Y	FB	TF	086.68	4.16	AT/ABOVE 4000		
SUURF	420657.51N/0830837.76W	Y	FB	TF	076.76	4.46	AT/BELOW 7000		
MALTB	421457.48N/0823851.48W	Y	FB	TF	069.97	23.53	AT/ABOVE 2200		
RW22R (AER)	421334.48N/0832158.61W	N	-	-	-	-			CG 500 FT PER NM TO 1146
-	421115.08N/0832341.20W	-	-	VI	208.69	2.65			
WINRS	420542.02N/0832002.39W	Y	FB	CF	153.96	6.18	AT/ABOVE 2500	AT/BELOW 230K	
USSIE	420556.34N/0831427.74W	Y	FB	TF	086.68	4.16	AT/ABOVE 4000		
SUURF	420657.51N/0830837.76W	Y	FB	TF	076.76	4.46	AT/BELOW 7000		
MALTB	421457.48N/0823851.48W	Y	FB	TF	069.97	23.53	AT/ABOVE 2200		
RW27L (AER)	421158.34N/0831949.33W	N	-	-	-	-			
-	-	-	-	VM	268.73	-			
RW27R (AER)	421303.02N/0831951.71W	N	-	-	-	-			
-	-	-	-	VM	268.72	-			
WILLOW RUN (KYIP)									
RW05 (AER)	421350.25N/0833223.46W	N	-	-	-	-			
1220 MSL	-	-	-	VA	046.70	-	AT/ABOVE 1220		CG 500 FT PER NM TO 1220
-	-	-	-	VM	294.00	-			

QUALITY
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CHECKED

<u>DP NAME</u>		<u>NUMBER</u>		<u>DP COMPUTER CODE</u>		<u>SUPERSEDED NUMBER</u>		<u>DATED</u>	<u>ACTUAL EFFECTIVE DATE</u>
HHOWE		FOUR		HHOWE4.HHOWE		THREE		12/05/2019	
<u>FIX/NAVAID</u>	<u>LAT/LONG</u>	<u>C</u>	<u>FO/FB</u>	<u>LEG TYPE</u>	<u>TC</u>	<u>DIST (NM)</u>	<u>ALTITUDE</u>	<u>SPEED</u>	<u>REMARKS</u>
RW09 (AER)	421438.22N/0833235.98W	N	-	-	-	-			
1220 MSL	-	-	-	VA	088.55	-	AT/ABOVE 1220		CG 500 FT PER NM TO 1220
-	-	-	-	VM	294.00	-			
RW23 (AER)	421441.34N/0833110.47W	N	-	-	-	-			
-	-	-	-	VM	226.72	-			
RW27 (AER)	421439.47N/0833129.51W	N	-	-	-	-			
-	-	-	-	VM	268.56	-			CG 209 FT PER NM TO 1000
MALTB	421457.48N/0823851.48W	Y	-	IF	-	-	AT/ABOVE 2200		
HHOWE	421523.12N/0822806.06W	Y	FB	TF	086.88	8.00			
HHOWE	421523.12N/0822806.06W	Y	-	IF	-	-			HHOWE4.BROKK
BROKK	421953.00N/0813454.98W	Y	FB	TF	083.20	39.73			
HHOWE	421523.12N/0822806.06W	Y	-	IF	-	-			HHOWE4.LNCON
LNCON	421437.39N/0813103.36W	Y	FB	TF	090.71	42.37			