

**CHANGE**

**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

8260.46D  
CHG 2

Effective Date:  
09/30/11

National Policy

**SUBJ: Departure Procedure (DP) Program**

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**1. Purpose.** This order provides policy, guidance, and standardization for initiating, developing, processing, and managing the Departure Procedure program.

**2. Who this change affects.** The primary audience for this Order is AeroNav Products, who has the responsibility to develop instrument departure procedures. The secondary audience includes other Air Traffic Organization (ATO) Service Area offices and Flight Standards headquarters and regional office Divisions/Branches.

**3. Where You Can Find This Order.** You can find this order on the Federal Aviation Administration's (FAA) Web site at [http://www.faa.gov/regulations\\_policies/orders\\_notices](http://www.faa.gov/regulations_policies/orders_notices).

**4. Explanation of changes.**

**a. Chapter 2.**

(1) Paragraph 2-1b(13). Editorial change to indicate VCOA is not mandatory at airport where ATC cannot allow the maneuver. Also added statement to say that Form 8260-15B will contain this information when the ODP is in a graphic.

(2) Paragraph 2-1e. Revised guidance on documenting crossing altitudes.

(3) Paragraph 2-1e(2). Revised paragraph to support the revision of paragraph 2-1e(1) that eliminates the need to differentiate between climb gradients for either ATC purposes or obstacle clearance. There is no way to determine if the altitude depicted on the chart is for obstacle clearance or to meet an ATC requirement; therefore, the crossing altitude/climb gradient must be complied with unless ATC intervenes and assumes responsibility for obstacle avoidance.

(4) Paragraph 2-2e(12). Added requirement to include "T" symbol on SIDs and clarified in the Note that the "T" symbol will not be placed on graphic ODPs.

**b. Appendix A.**

(1) Paragraph 5e(5) examples. Revised graphics for "Elemo Two Departure," "Micky Four Departure," "Shemp One Departure (RNAV)," and "Shemp Two Departure (RNAV)" to support text revisions.

**c. Appendix D.**

(1) Paragraph 3. Revised guidance on documenting crossing altitudes.

(2) Figure D-7. Revised FAA Form 8260-15B for “Micky Four Departure,” to support revised application guidance.

**g. Appendix E.**

(1) Paragraph 3. Revised guidance on documenting crossing altitudes.

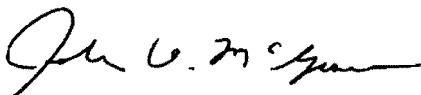
(2) Figure E-2. Revised FAA Form 8260-15B for “Shemp One Departure (RNAV),” to support revised application guidance.

(3) Figure E-3. Revised FAA Form 8260-15B for “Shemp Two Departure (RNAV),” to support revised application guidance.

(4) Figure E-7. Revised FAA Form 8260-15C for “Shemp Two Departure (RNAV),” to support revised application guidance.

**PAGE CHANGE CONTROL CHART**

<b>Remove Pages</b>	<b>Dated</b>	<b>Insert Pages</b>	<b>Dated</b>
<b>Chapter 2</b>		<b>Chapter 2</b>	
2-3 thru 2-16	04/14/11	2-3 thru 2-16	MM/DD/YY
<b>Appendix A</b>		<b>Appendix A</b>	
A-7 thru A-8	04/14/11	A-7 thru A-8	MM/DD/YY
<b>Appendix D</b>		<b>Appendix D</b>	
D-17 thru D-22	04/14/11	D-17 thru D-22	MM/DD/YY
D-25 thru D-26	04/14/11	D-25 thru D-26	MM/DD/YY
<b>Appendix E</b>		<b>Appendix E</b>	
E-1 thru E-8	04/14/11	E-1 thru E-8	MM/DD/YY
E-11 thru E-14	04/14/11	E-11 thru E-14	MM/DD/YY
E-21 thru E-32	04/14/11	E-21 thru E-30	MM/DD/YY



John M. Allen  
Director  
Flight Standards Service

(13) The VCOA requirement in table 1 is not mandatory at airports where ATC **cannot** allow the maneuver. In this case, annotate the exception and rationale in the “Reasons” portion of Form 8260-15A (**Form 8260-15B when a graphic ODP**).

(14) Textual ODPs may be designed to terminate at a fix/NAVAID located within the IFR en route structure and/or at an altitude that will allow random (diverse) IFR flight.

(15) Graphic ODPs must be designed to terminate at a fix/NAVAID located within the IFR en route structure.

Table 1. ODP Development Combinations.	
SITUATION	ACTION
1) TERPS diverse departure obstacle assessment does not identify any obstacle penetrations.	Complete Form 8260-15A documenting standard takeoff minimums apply.
2) TERPS diverse departure obstacle assessment identifies obstacles within the initial climb area (ICA) that require a CG greater than 200 ft per NM to an altitude of 200 ft or less, above <b>Departure End of Runway (DER)</b> (commonly referred to as “low, close-in obstacles”).	Establish a DP that provides the pilot a NOTE identifying the obstacle(s) type, location relative to DER, height (AGL), and elevation (MSL). See appendix D for recommended publication text available.
3) TERPS diverse departure obstacle assessment identifies obstacles that require a CG greater than 200 ft per NM, to an altitude greater than 200 ft above DER.	<p><b>A) Obstacles located within the ICA (extended) 3 SM or less from DER:</b> Establish a DP using one of the following options (listed in order of preference):</p> <p>1) Publish a textual or graphic route/sector to avoid the obstacle(s) with standard takeoff minimums and standard CG, <b><u>OR</u></b></p> <p>2) Publish a ceiling and visibility to see and avoid the obstacle(s) with the option of standard takeoff minimums with a minimum CG to a specified fix or altitude that provides obstacle clearance with a standard CG, <b><u>AND</u></b>:</p> <p>a) Provide a NOTE identifying the obstacle(s), which specifies the obstacle description, location relative to the DER, height (AGL), and elevation (MSL), <b><u>AND</u></b></p> <p>b) For obstacles that penetrate the 40:1 OCS by 35 ft or less, provide an option to reduce takeoff runway length to accommodate the most penetrating obstacle based on a standard 200 ft per NM climb gradient, <b><u>OR</u></b></p>

3) A combination of options 1) and 2) above.

**B) All Other Obstacles:** Establish a DP using one of the following options (listed in order of preference):

1) Publish a graphic or textual route/sector to avoid the obstacle with standard takeoff minimums and standard climb, **OR**

2) Publish standard takeoff minimums with a minimum CG to a specified fix or altitude that provides obstacle clearance with a standard CG, **AND**

a) For obstacles that penetrate the 40:1 OCS by 35 ft or less, provide an option to reduce takeoff runway length to accommodate the most penetrating obstacle based on a standard 200 ft per NM CG, **AND/OR**

b) Provide a ceiling and visibility sufficient to allow a visual climb over the airport (VCOA) to an altitude that will provide obstacle clearance [see paragraph 2-1b(11) and (12)], **OR**

3) A combination of options 1 and 2 above.

**C) Both Action A) and B) Obstacles:**

1) If the DP **highest** CG is based on an **obstacle  $\leq 3$  SM from DER** (Action A), establish a DP using one of the following options (listed in order of preference):

a) Publish a graphic or textual route/sector to avoid the obstacle with standard takeoff minimums and standard climb, **OR**

b) Publish standard takeoff minimums **and** the minimum CG required to clear the  **$\leq 3$  SM obstacle** to a specified fix or altitude that will provide subsequent obstacle clearance above all DP obstacles based on a standard 200 ft per NM CG, **AND**

1 Provide a ceiling and visibility to see and avoid the  **$\leq 3$  SM obstacle** **and** the minimum CG required to clear **all other obstacles** outside the ICA (extended) to a

	<p>specified fix or altitude that provides obstacle clearance, <b>AND</b></p> <p><u>2</u> For obstacles that penetrate the 40:1 OCS by 35 ft or less, provide an option to reduce takeoff runway length to accommodate the most penetrating obstacle based on a standard 200 ft per NM climb gradient, <b>AND/OR</b></p> <p><u>3</u> Provide a ceiling and visibility sufficient to allow a VCOA to an altitude that will provide obstacle clearance [see paragraphs 2-1b(11) and (12)],</p> <p>2) If the DP <b>highest CG</b> is based on <b>all other obstacles</b> (Action B), then Action B above applies.</p> <p><b>Note:</b> Where a graphic route/sector is published, include on the chart: takeoff minimums, required CGs, and applicable obstacle data for each runway using the DP.</p> <p><b>D) If none of the above actions are feasible,</b> an IFR departure must not be authorized.</p>
<p>4) TERPS diverse departure obstacle assessment identifies obstacles requiring a CG to 200 ft or less above DER and additional obstacles that require a CG to an altitude greater than 200 ft above DER.</p>	<p>Apply a combination of action items from situations 2) and 3).</p>

**c. Standard Instrument Departures (SIDs).** SIDs are developed to assist in meeting environmental, capacity, and air traffic control requirements. SIDs may be requested by specific ATC facilities, the military services, or other proponents to enhance operations. A SID also provides protection from obstacles and is depicted graphically; however, it will not contain the “(OBSTACLE)” designation following the procedure title on the chart, and may not be flown unless approved by ATC. The following rules apply to SIDs:

(1) SIDs must be designed to terminate at a fix/NAVAID depicted on an IFR en route chart, at an altitude that will allow random IFR flight, or at a position and altitude where ATC radar service is provided.

(2) When a SID is designed to incorporate radar vectors at the termination point, provide a heading for charting and incorporation into the avionics database in the event ATC instructions are not received prior to or at the termination fix.

**d. Design Constraints.** The following design constraints apply to all ODPs and SIDs:

(1) DPs must not require a turn prior to reaching 400 ft above the departure end of runway (DER) elevation. See Order 8260.3, Volume 4, and Order 8260.44 when a turn is required within 2 NM of DER.

(2) DPs requiring a climb gradient (CG) in excess of 500 ft per NM, whether for obstacle clearance or air traffic control restrictions, must be approved by Flight Standards Service or appropriate DoD authority. Approval requests will be assessed by the FAA Flight Technologies and Procedures Division (AFS-400), Procedures Review Board (PRB).

**Note:** Consideration for approval will be based on, but not limited to, potential users/aircraft capability of meeting such a CG, and location of the obstruction along the projected flight track that is causing the CG.

(a) Requests for approval of climb gradients in excess of 500 ft per NM must include documentation showing the calculations used to derive the climb gradient values.

(b) When Flight Standards Service will not approve a climb gradient (CG) in excess of 500 ft per NM and all of the obstacles forcing such a CG are located inside the ICA (extended) 3 SM or less from DER, a ceiling and visibility may be applied to see and avoid the obstruction(s) as the only option available.

(c) When Flight Standards will not approve a climb gradient (CG) in excess of 500 ft per NM and any of the obstacles forcing such a CG are located outside the ICA (extended) greater than 3 SM from DER; a stand-alone VCOA procedure may be used as the only option available for obstacle avoidance.

(3) Speed restrictions may be specified only when absolutely necessary to ensure obstacle clearance, airspace efficiency during turns, or when necessary to achieve an operational advantage. Refer to applicable DP criteria directives.

(a) ATC required speed restrictions are only allowed in SID design and must not be included in ODPs.

(b) Speed restrictions (except as noted in paragraph 2-1d(3)(c)) must be limited to one restriction per fix/waypoint. In this instance, a minimum altitude based on the minimum required climb gradient must also be specified at the fix/waypoint.

(c) Avoid using multiple speed restrictions at the same fix for different aircraft types, insofar as possible; e.g., "Turbo-props do not exceed 160 KIAS until passing GARVY; Turbo-jets do not exceed 230 KIAS until passing GARVY." When multiple restrictions must be applied to support ATC operations, apply only one restriction for each aircraft type.

(4) Fan markers must not be used as a fix to designate a turning point on a SID or ODP.

- (5) Do not establish VCOA procedures in conjunction with a SID.

**e. Charting Constraints.** The following charting constraints apply to all DPs:

- (1) Charting Altitudes. Document altitudes for charting as follows:

(a) Graphic departure procedures may require depiction of a minimum altitude at a fix established along the departure route. SIDs may require altitudes to support ATC requirements; however, ATC required altitudes must not be depicted on ODPs. When the obstacle clearance and ATC altitudes at the same fix/waypoint are different values, the higher ATC required altitude then becomes the minimum altitude that will support obstacle clearance/procedure design constraints.

(b) Only a single, at or above altitude will be published at a fix. However, when ATC requires publication of a maximum, “at or below” altitude to support an operational requirement, a minimum “at or above” altitude must also be specified. This will make the actual charted altitude appear as a mandatory “at” altitude or as a block altitude; i.e., a combination of both an “at or above” and “at or below” altitude. Government and civil charting organizations will depict these altitudes according to their individual specifications.

(c) When an altitude restriction is requested by ATC for a fix located on a transition route, it must be at or above the specified minimum en route altitude (MEA) for the route.

(d) Enter altitudes to be charted on the appropriate 8260-15 series form (see appendix D or E).

(2) Charting Minimum Climb Gradients. All Graphic DPs must depict minimum climb gradient(s) that exceed 200 ft per NM whenever required for obstruction clearance and/or RNAV or RNP operational limitations (LNAV engagement altitude). Order 8260.3 allows only one climb gradient for obstacle clearance on any DP (ODP or SID). Multiple ATC climb gradients are permitted on SIDs; however, the ATC climb gradient must not be less than that required for obstacle clearance. When RNAV/RNP operational (equipment requirements) climb gradients are required on SIDs, these climb gradients must not be less than that required for obstruction clearance. Enter minimum climb gradients for charting on the appropriate 8260-15 series form (see appendix D or E).

(3) Charting Speed Restrictions. Required speed restrictions must be identified per Interagency Air Cartographic Committee (IACC) specifications.

(a) Speed restrictions for textual ODPs will follow the departure instructions; e.g., “...climbing right turn direct XXX VOR. Do not exceed 200 KIAS until XXX VOR.”

(b) Speed restrictions for graphic ODPs will be annotated on the chart at the restriction point.

(c) ATC SID speed restrictions will be identified by placing “(ATC)” at the end of the stated restriction; e.g., “Do not exceed 230 KIAS until passing BRAVO (ATC).” This will indicate to the pilot and the controller that this restriction is for ATC purposes and can be deleted by ATC. The absence of “(ATC)” at the end of a speed restriction indicates that it is there to support a TERPS criteria design constraint and **CANNOT** be modified or deleted by ATC.

(4) ODPs that are depicted graphically must have the term “(OBSTACLE)” printed on the graphic (see appendix D or E). This will be indicated by the word “OBSTACLE” adjacent to the “Type” line on Form 8260-15B. U.S. Government charts will include this immediately following the procedure title; e.g., TETON ONE DEPARTURE (OBSTACLE).

(5) ODPs developed for RNAV use must have the terms (OBSTACLE) and (RNAV) printed on the graphic. This will be indicated by the words “OBSTACLE” and “RNAV” adjacent to the “Type” line on Form 8260-15B. U.S. Government charts will include this immediately following the procedure title; e.g., LASCH ONE DEPARTURE (OBSTACLE) (RNAV).

(6) All Graphic DPs must include applicable takeoff minimums, climb gradients, obstacle data (see table 1), on the graphic chart, even if redundant to information published textually.

(7) A Radar Vector Area (RVA) used in conjunction with an RNAV SID may be published on the same chart with an RNAV route departure from a different runway; however, both must contain the same common segment prior to reaching the end of the departure (see appendix E, section 2 for unique database coding requirements).

**f. Equipment Requirements.** DPs are also categorized by equipment requirements as follows:

(1) Non-RNAV DP. A DP established for aircraft equipped with conventional avionics using ground-based NAVAIDs; e.g., nondirectional beacon (NDB), very high frequency omni-directional range (VOR), VHF omni-directional range/tactical air navigation (VORTAC), localizer (LOC), etc. These DPs may also be designed using dead reckoning navigation.

(2) RNAV DP. A DP established for aircraft equipped with RNAV avionics; e.g., global positioning system (GPS), FMS, etc. Automated vertical navigation must not be required.

(3) Radar SID. A SID established when ATC has a need to vector aircraft on departure to a particular ATS Route, NAVAID, or fix. Radar vectors may also be used to join conventional or RNAV navigation SIDs. SIDs requiring radar vectors must be annotated “RADAR REQUIRED.”

**g. Terminology.** The following terminology applies for initial climb instructions:



(1) When required, departure instructions must specify the actual heading to be flown after takeoff. Example: “Climb heading 350.10....” Some existing procedures specify “Climb runway heading.” Over time, these procedures will be updated, changing the terminology to specify the actual heading being flown.

**Note:** For database coding, heading/track/course values must be in hundredths of a degree. For charting purposes, these heading/track/course values will be rounded to the nearest whole degree. Additionally, hundredths of a degree must not be used in ATC communications.

(2) If departure instructions require a heading to be assigned by ATC, use: “Climb on assigned heading for radar vectors to (name of fix/airway, etc.).”

(3) If departure instructions require a specific altitude to climb to after takeoff, do not use the terminology “Climb to (altitude) ...” without including a heading to fly. Example: “Climb heading 310.25 to 1500 ...”

(4) Do not use the terminology “Climb straight ahead...” or “Maintain runway track...,” as there is no guidance or reference definition of this phraseology for the pilot to apply.

(5) Ensure initial departure instructions that require altitude restrictions are written clearly and in order to be flown so as to lessen the possibility of pilot deviations. For example, “Climb heading 240.15 to 1500, cross TEB 4.5 DME at 1500, then climb and maintain 2000, thence...” or, “Climb heading 195.47 to 900, then climbing right turn heading 280 to maintain 2000, thence...”

(6) A departure procedure requiring a turn does not require an initial climb heading to be specified. For example, “Climbing right turn direct XYZ VOR...” Direction of turn must be specified when turn exceeds 15 degrees.

(7) Do not use the word “immediate/immediately” in any type of departure instructions; e.g., turning instruction or speed restrictions. Old “early turn” departure procedures may contain instructions to “Turn left (right) as soon as practicable.” This terminology is only to be used on non-standard departure procedures approved by Flight Standards or the appropriate military authority.

## **2-2. Responsibilities.**

**a. General.** The following guidance outlines procedures for DP requests, processing, and cancellation.

(1) **Procedure Requests.** SIDs are normally requested by the ATC facility responsible for departure control at the airport where the procedure is proposed, or by another proponent. All requests for new or amended SIDs must be processed through the Service Area Operations Support Group (OSG), Flight Procedures Team (FPT) and will forward to the appropriate Regional Airspace and Procedures Team (RAPT) in accordance with Order 8260.43.

(2) **Requirements.** ATC must provide the OSG, FPT, detailed operational requirements and restrictions for inclusion in the SID design. AeroNav Products must make every effort to meet ATC identified operational requirements and constraints using current criteria and policy. When current criteria and policy will not support a design to meet ATC requirements, AeroNav Products, AFS-420, and other ATO organizations/involved parties must work together to find an acceptable solution.

(3) **Cancellation.** All proposed SID cancellations must be approved by the RAPT. AeroNav Products has sole responsibility for canceling ODPs.

**b. Proponent.** A proponent's request to develop a DP must include the information in appendices B and C. This information must be completed and forwarded to the ATC facility providing departure control service to the airport for acceptance, prior to development. The DP request package must include the following:

- (1) An outline of the type of procedure and expected benefits.
- (2) A proposed ground track, including associated fixes and any proposed altitude or speed restrictions.
- (3) A request (if required) for development assistance from the servicing ATC facility.

**c. ATC.** When assisting a proponent or requesting a SID, the ATC facility providing departure control service must:

- (1) Evaluate the proponent's request to ascertain preliminary operational feasibility and to determine/verify that significant benefits (see appendix B) will be derived.
- (2) Assist in designing the procedure by providing the proponent with information pertaining to traffic flow and operational constraints; e.g., routes, minimum IFR altitudes, facility/sector lateral and vertical airspace boundaries, special use airspace, etc.

**Note:** When an ATC facility proposes SID development from an airport served primarily by air carriers, it may attempt to solicit the assistance of a "lead carrier" in the design and flyability of the proposed procedure.

- (3) Coordinate with other ATC facilities affected by the procedure.
- (4) Act as the focal point for all ATC coordination and provide appropriate assistance in resolving any problems identified during the development process.
- (5) Ensure that a DME/DME screening model has been run on RNAV SIDs to determine if the procedure is useable by suitably equipped aircraft, prior to submission.

**Note:** The DME/DME assessment process is contained in Order 7470.1, DME/DME Infrastructure Evaluation for Area Navigation (RNAV) Routes and Procedures.

(6) Coordinate with the servicing ARTCC to obtain a 5-letter pronounceable name for all fixes in the graphic DP. Complete Form 8260-2 data worksheet for each fix being established, modified, or canceled (see appendix C). Include the worksheet(s) as part of the graphic DP request package. Existing fixes/NAVAIDs should be used where conveniently located.

(7) Coordinate with the servicing ARTCC to obtain a name and computer code for the SID as specified in appendix A.

(8) Complete the DP requirements data worksheet (see appendix B), when applicable.

(9) Forward the requested package to the applicable Service Area Operations Support Group. The package must contain worksheets for all fixes, the DP requirements data worksheet, and a sketch of procedures requiring graphic publication (see appendix D or E).

(10) Review SIDs at least biennially for continued need. Coordinate requested changes through the applicable Service Area Operations Support Group, Flight Procedures Team.

**d. The Service Area Flight Procedures Team (FPT) must:**

(1) Review the DP package for completeness.

(2) Review DPs for impact by current or proposed Obstacle Evaluation/Airport Airspace Analysis (OE/AAA), Facilities and Equipment, National Change Proposal (NCP), or other applicable projects.

**Note:** The point-of-contact (POC) and telephone number for the ATC facility is listed on the Graphic DP requirements worksheet. The FPT must contact the POC to resolve any problems in developing the requested procedure and provide appropriate alternatives. The POC must be responsible for additional coordination of changes required for development. The FPT should coordinate with the Regional NextGen Branch (RNGB) for assistance where necessary.

(3) Facilitate discussion of the procedure at the RAPT.

(4) Forward the DP package to AeroNav Products.

(5) Provide one copy of each 8260-2 and 8260-15 series form(s) to all affected ATC facilities.

(6) The OSG FPT will notify the requesting ATC facility of the anticipated publication date and any delay in the publication and cause.

**e. AeroNav Products must:**

(1) Develop and process textual ODPs on FAA Form 8260-15A, Takeoff Minimums and Obstacle Departure Procedures, under applicable directives.

(2) Develop and process graphic ODPs and SIDs on FAA Form 8260-15B, Graphic Departure Procedure.

(3) Develop and process a FAA Form 8260-15C, Departure Data Record, for all RNAV DPs.

(4) Ensure that a DME/DME screening model has been run on RNAV “obstacle” departures (The Service Area OSG is responsible for DME/DME screening of SIDs) to determine if the procedure is useable by suitably equipped aircraft, prior to submission for flight inspection.

**Note:** The DME/DME assessment process is contained in separate guidance.

(5) Submit DPs to Flight Inspection Operations Division, AJW-33, for necessary action.

(6) Ensure that textual ODPs submitted “concurrent” with a “proposed” SIAP are flight inspected prior to assigning an effective date for the SIAP via .26 messages.

(7) After satisfactory flight inspection, forward the original Form(s) 8260-2, Radio Fix and Holding Data Record, and original 8260-15 series forms to NFDC. Copies will be provided to Service Area Flight Procedures Team for distribution to all affected ATC facilities (see paragraph 2-2d(5)).

(8) Develop, review, track, and cancel NOTAMs relating to ODPs and SIDs.

(9) Review ODPs periodically for continued need, obstacle clearance, and compliance with current criteria and policy; and coordinate proposed changes with the appropriate ATC facility. When application of new criteria or a new obstacle affects an ODP/SID that requires adjustment to an obstacle-driven CG, all DPs must be evaluated to determine if other CGs require adjustment. If CG adjustments are required, they must be updated simultaneously in the same charting cycle.

(10) When a location currently has standard takeoff minimums and circumstances now require non-standard takeoff minimums and/or an ODP development, amend the current Form 8260-15A for the airport accordingly.

(11) When it is necessary to cancel a DP, process the appropriate Form 8260-15 as directed in paragraph 2-5d.

(12) Add the “T” symbol to the instrument approach procedure (IAP) **and SID** charts whenever the Form 8260-15A indicates any data entries other than Standard Takeoff Minimums.

**Note:** The “T” symbol **will not be placed** on graphic ODPs.

(13) Delete the “T” symbol from the IAP charts based on receipt of a Form 8260-15A that has “Standard” in the “Takeoff Minimums” and it applies to all runways. This symbol deletion applies when a Textual ODP is not published or when removal of textual ODP information is necessary based on a revised Form 8260-15A.

**Note:** The basic rule is that if an ODP is published (Text or Graphic), the “T” symbol is required on all approach charts to that airport. If an ODP is not published, a “T” symbol will not appear on approach charts.

(14) Issue P-NOTAMs to correct United States Government charting discrepancies and compilation errors required (see Order 8260.19, chapter 2, section 6).

**f. Aviation Systems Standards must:**

(1) Coordinate and execute Flight Validation and Flight Inspection for FAA developed procedures and under a reimbursable agreement with third party procedure developers,

(2) Provide flight inspection results and archived reports upon request, and

(3) Verify DME/DME coverage when applicable.

**g. The NFDC must:**

(1) Conduct a pre-publication review of submitted forms to ensure compatibility with the National Airspace System Resources, National Database, and compliance with applicable directives relative to form entries.

(2) Assign an effective date and publish textual and graphic ODPs in the transmittal letter (TL) authorizing charting agencies to publish the procedure.

(3) Assign an effective date and publish graphic DPs, and associated fixes, in the daily National Flight Data Digest (NFDD) authorizing charting agencies to publish the procedure.

(4) Coordinate to ensure the Form 8260-15B supporting graphic ODPs is published in the NFDD to be effective and charted concurrently with the associated Form 8260-15A.

(5) Monitor and track the status of concurrent instrument approach procedure (IAP) packages to ensure that the entire package is published with the same effective date.

(6) Notify AeroNav Products of delays in publication if the associated proposed procedures have not been flight checked or the associated docket has not received a final date by the applicable cutoff.

(7) Resolve data conflicts, form discrepancies, etc., with AeroNav Products.

(8) Review and track FDC NOTAMs relating to textual ODPs.

(9) File and maintain the original signed copy of the forms.

**2-3. Accuracy Verification and Responsibilities.** Any ATC facility, DoD, proponent, charting agency, procedure user, concerned individual, organization, or office must:

**a. Notify AeroNav Products** of published errors (including omissions) that affect safety of flight by the fastest means available. AeroNav Products must take appropriate NOTAM action under Order 8260.19.

**b. Notify the NFDC** whenever pre-publication errors are discovered in the TL or NFDD. The NFDC will coordinate corrective actions with AeroNav Products and promulgate corrected data/forms.

**c. Notify AeroNav Products** whenever charting discrepancies/compilation errors are detected in United States government published aeronautical products. AeroNav Products will coordinate corrective actions with AeroNav Products and NFDC.

**2-4. Military Departure Procedures.**

**a. Military DPs** are not handled or published in the same manner as civil DPs. Approval authority for DPs at military airports rests with the military. The FAA develops United States Army DPs under Order 8260.15, United States Army Terminal Instrument Procedures Service. The FAA develops United States Air Force DPs at domestic civil airports under Order 8260.32, United States Air Force Terminal Instrument Procedures Service. The National Geospatial-Intelligence Agency (NGA) publishes all military DPs.

**Note:** Military DPs must be named and numbered in accordance with the criteria outlined in this order.

**b. The FAA requires that all military DPs** be coordinated with FAA ATC facilities or regions when such DPs affect the NAS. The Air Traffic Facility providing the departure service must assist the military in coordinating the procedures and in obtaining computer codes to ensure that the procedures are properly interfaced with the NAS. United States Air Force and Navy procedures are NOT sent to NFDC.

**c. When military DPs** affect airspace under the jurisdiction of FAA facilities, those affected ATC facilities/ARTCCs must maintain copies of the applicable military or FAA procedure approval forms.

**d. When a military DP** has a climb gradient established to clear obstruction(s) that uses the “DoD Option” provision (see Order 8260.3, Volume 4, paragraph 1-4), the procedure must be annotated “NOT FOR CIVIL USE.”

**2-5. FAA 8260-15 Series Forms** (see appendices E and F).

**a. The 8260-15 series forms** document and facilitate transmittal of nonstandard takeoff minimums and/or departure procedures. These forms will be the basis for charting agencies to publish non-standard takeoff minimums, departure procedures, and/or to add/delete charting icons used to denote that other than standard takeoff minimums and/or specific obstacle departure procedures are published.

(1) Use Form 8260-15A.

(a) To document standard takeoff minimums.

(b) To document nonstandard takeoff minimums and/or higher than standard climb gradients for a runway.

(c) To document textual ODPs.

(d) To document that the ODP for a runway is published graphically.

(e) To document other pertinent textual data for publication; e.g., obstacle data notes, VCOA data, etc.

(2) Use Form 8260-15B.

(a) To document graphically depicted complex ODPs and all SIDs.

(b) To document other pertinent procedural data; e.g., fixes, NAVAIDs, routes, vectoring areas, altitudes, etc. required for charting database development on RNAV DPs.

(3) Use Form 8260-15C to document RNAV DPs in a manner consistent with and which aids in charting and database coding. Specifically use 8260-15C to document:

(a) The RNAV route of flight in terms of a series of segments defined by fix name, positions, waypoint type, leg types, course, and distance.

(b) Altitude and airspeed restrictions associated with fixes.

**b. Use Form 8260-15A/B** to deny lower than standard takeoff minimums. When touchdown and rollout runway visual range (RVR) are available on runways with centerline lights and either RVR is installed on a baseline GREATER than 250 ft, deny takeoff minimums lower than RVR 1200 by adding the following example standard NOTE on Form 8260-15:

**“RWY 27R, Air Carrier reduction below RVR 1200 NA.”**

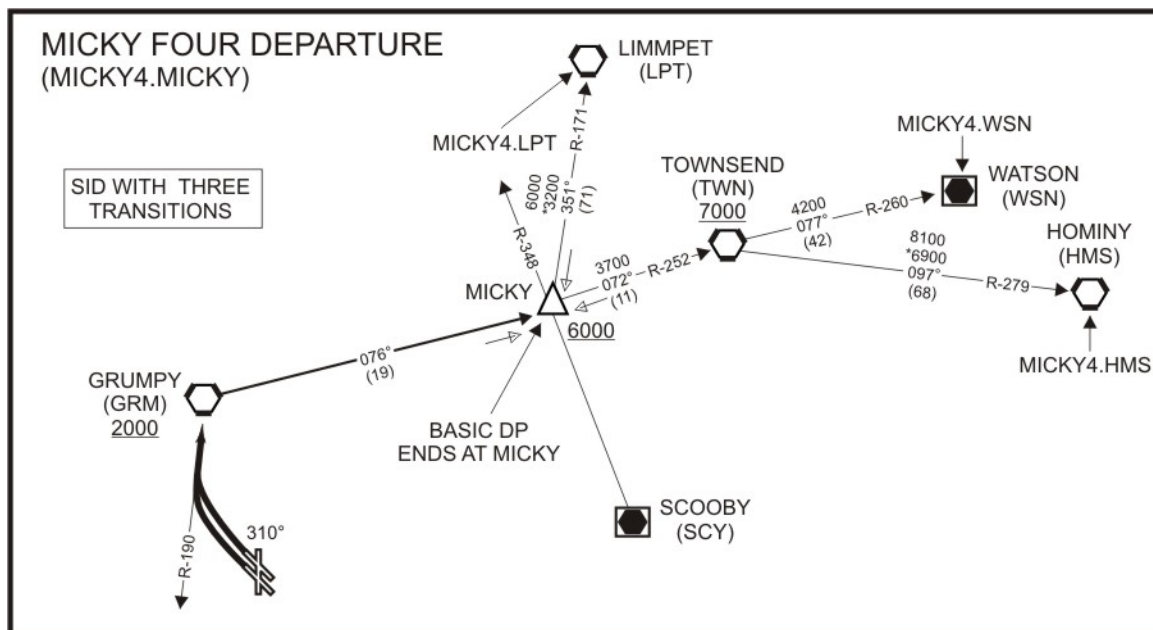
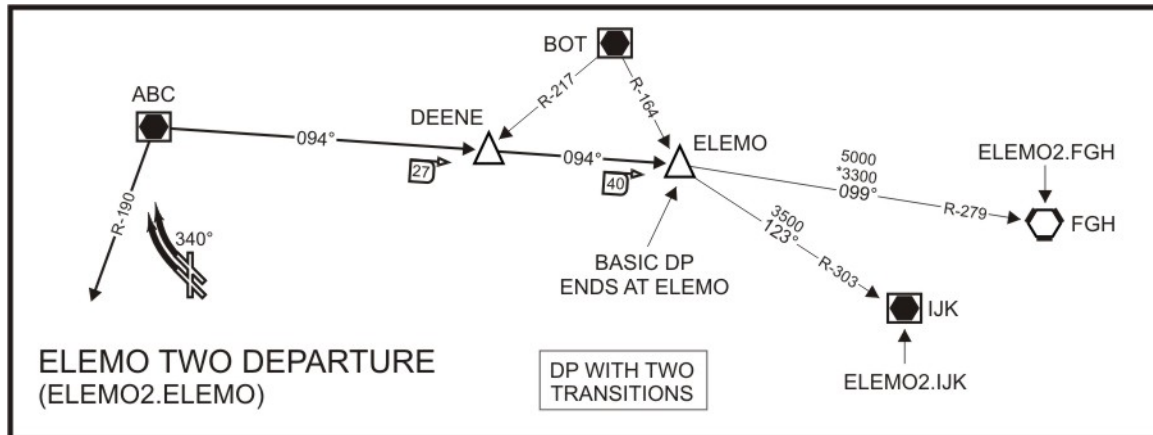
**c. Administratively process the 8260-15 series forms** as specified in Order 8260.19, chapter 8. Additionally, when submitting procedures for waiver and/or Flight Standard approvals, include supporting documentation; e.g., for excessive climb gradient approval, submit documentation showing calculations.

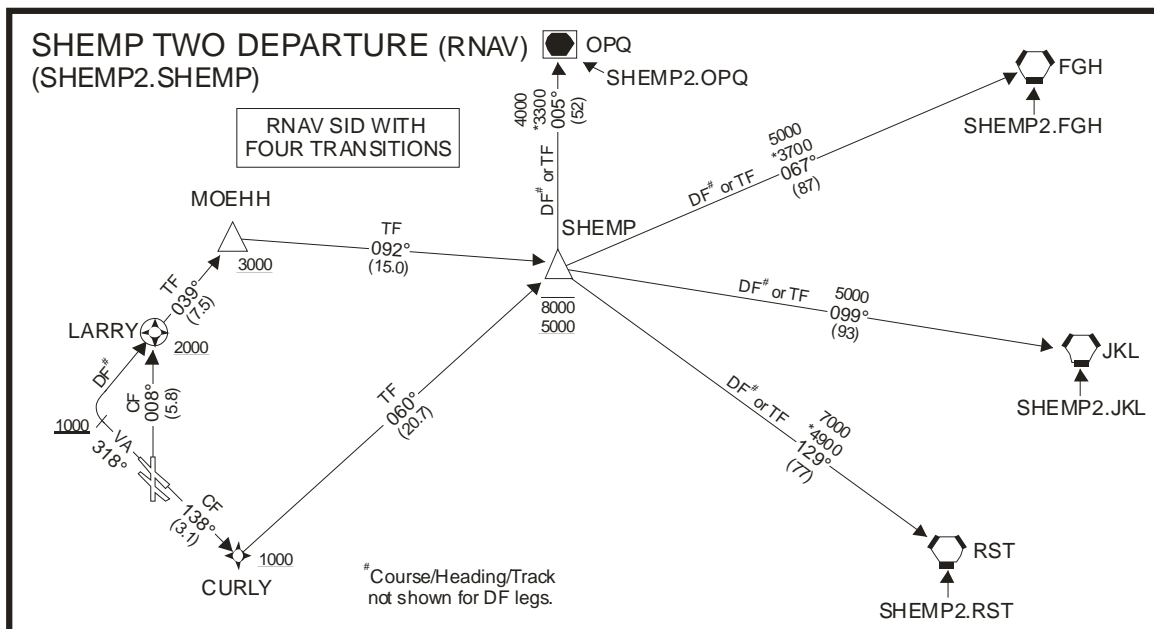
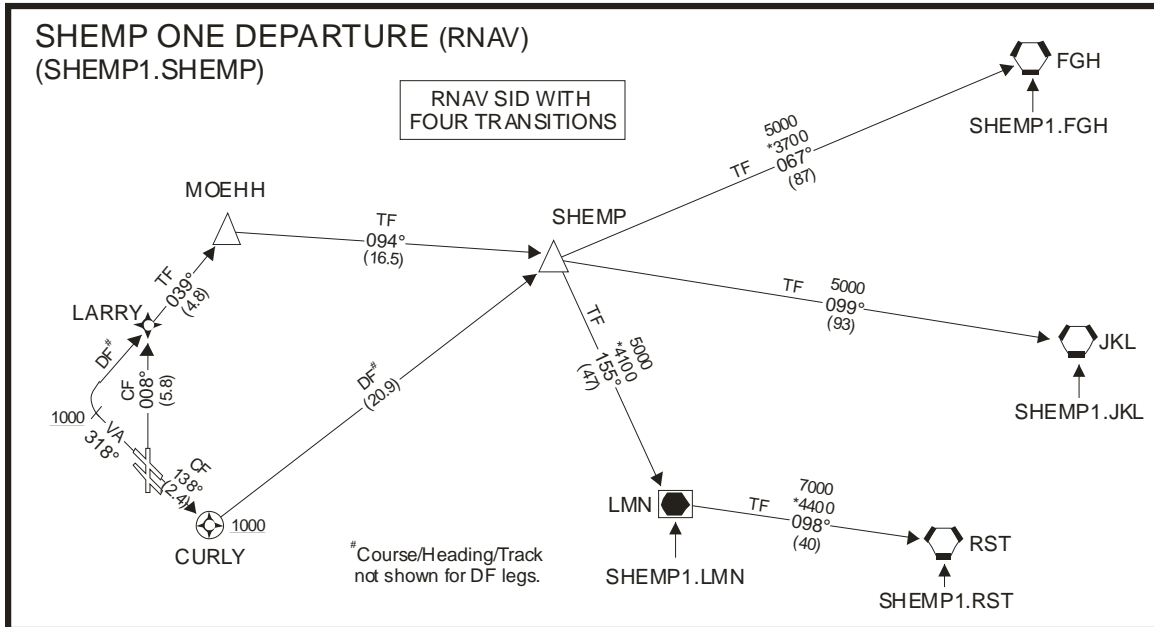
**d. Cancellation of Form 8260-15(s).** Cancel specific takeoff minimums for an airport or cancel any textual or graphical DP(s) no longer required, as follows:

(1) Enter the current information from the top line of page 1 of Form 8260-15A/B and into the corresponding blocks on blank Forms 8260-15A and/or B. Additionally, on Form 8260-15B; complete the “Airports Served” section.

(2) Enter/Overprint “Canceled effective \_\_\_\_” in the “Takeoff Minimums” section on Form 8260-15A and/or “DP Route Description” section of Form 8260-15B (a stamp may be used for this purpose). This effective date will “normally” be entered by NFDC. The only time the “canceled effective” date must be entered by AeroNav Products is when a specific effective date is required.



**EXAMPLES (Continued):**

**EXAMPLES (Continued):**

## Section 2. Instructions for Completing FAA Form 8260-15B, Graphic Departure Procedure (DP) [Non-RNAV Departure Procedures] and Sample Forms

**1. Title Line:** The Title Line consists of the six following elements and will be filled in as noted.

**a. DP Name.** Enter name of departure procedure. For example, the CATHEDRAL SEVEN DEPARTURE is entered as CATHEDRAL.

**b. Number.** Enter departure procedure number (spelled out); e.g., EIGHT.

**c. DP Computer Code.** Enter computer identification code as coordinated with by ATC (see appendix A).

**d. Superseded Number.** Departure procedure number (spelled out) superseded by this procedure. Enter “None” for a new procedure.

**e. Dated.** Date of superseded procedure. Format: DD MMM YY.

**f. Effective Date.** Leave blank. The effective date will normally be added by NFDC. Enter an effective date only when a specific effective date is required; e.g., Mag Var rotation. If the procedure is a “Special,” enter “Special” on this line.

**2. Type:** Specify whether the procedure is a default obstacle departure procedure (see paragraph 2-1b) by placing “Obstacle” on this line **or** specify that the procedure is a “SID” when the procedure is initiated by ATC (see paragraph 2-1c).

**Note:** Attach an up-to-date, clear graphic depiction of the procedure. DO NOT include a textual description of transitions or departure route text.

**3. DP Route Description.** Provide the initial climb out instructions for each runway and a textual description of the departure route to the DP termination fix. Include only information pertinent to the departure procedure. If the DP route can be clearly understood from a graphic depiction, a complete textual description is not necessary. Simply state, “...then on depicted route.” Define crossing altitudes at fixes as follows:

**a. Document ODP/SID crossing altitude restrictions in** plain text; e.g., “**CROSS GRM VORTAC AT OR ABOVE** (altitude)”; **CROSS SHEMP AT OR ABOVE** (altitude), **AT OR BELOW** (altitude); “**CROSS EDDIE AT** (altitude).”

**b. When an altitude restriction has been requested by ATC (not authorized for ODPs) at a fix in an initial SID routing (prior to reaching the SID termination fix) that is higher than the “minimum altitude” at the same fix/waypoint, the higher requested ATC altitude then becomes the minimum altitude that will support all requirements (i.e., obstacle clearance/procedure design constraints and the ATC requirement(s)).**

**c. When an “at or below” altitude restriction at a fix is necessary, compute the “minimum altitude” by applying a 200 ft per NM or the actual required nonstandard “minimum” climb gradient for obstruction clearance until reaching an altitude suitable for en route flight (refer to 14 CFR Part 91.177); then apply the provisions of TERPS Volume 1, paragraph 1730.**

**4. Transition Routes.** (Not Authorized for ODPs)

**a. Transition Name.** Name each transition according to the name of the fix at the transition termination point entered in appendix D, paragraph 4d. Do not include the word “Transition.”

**b. Transition Computer Codes.** Enter computer code as coordinated with ATC (see appendix A).

**c. From FIX/NAVAID.** Fix/NAVAID where the basic DP ends; e.g., **DANNY INT, BICKR.**

**d. To FIX/NAVAID.** En route fix/NAVAID where each transition ends; e.g., **DANNY, BICKR.** If a transition has multiple segments, enter one line for each segment.

**e. Course.** Specify the course for each transition segment. Enter the actual magnetic course to the hundredth of a degree (see Order 8260.19, chapter 8). When documenting the course between facilities, provide this information for both facilities.

**Example:**

076.56 & 080.47 (TWN R-077 & WSN R-260)

**Note:** AeroNav Products will round for publication.

**f. Distance.** Specify the distance for each transition segment. Enter the distance to the hundredth of a mile (see Order 8260.19, chapter 8). When documenting the course/distance between facilities, provide this information for both facilities.

**Example:**

41.61

**Note:** AeroNav Products will round for publication.

**g. MEA.** Enter MEA along transition route. By definition, the MEA also encompasses the MRA. If transitions share a common segment, make sure the MEA for that segment is the same for each transition.

**h. MOCA.** Enter MOCA along transition route. To reduce chart clutter, MOCAs less than 500 ft below MEAs should not be published.

**i. Crossing Altitudes/Fixes.** When a **SID Transition(s)** must accommodate an ATC required altitude at a specified fix, only document the ATC altitude; e.g., **“BECKY at/above 9000.”** No secondary altitude is required on transition routes since an MEA is specified that will provide obstacle clearance and ensure design constraints are met. The ATC altitude must not be lower than the MEA.

## **5. Procedural Data Notes/Takeoff Minimums.**

**a. List any procedural data information that is to appear in note form on the graphic depiction;** e.g., DME required, minimum climb rate information, etc. Also, depict all restrictions and performance requirements to fly the procedure. See Order 8260.19, paragraph 8-71g, for a chart note that is required if the SID/Graphic ODP is a Special.

Followed by:

**b. List the runway(s)** that are not authorized for IFR departures. If none of the actions listed in table 1 are feasible, or if another reason(s) precludes DP development (noise abatement, environmental, etc.), an IFR departure must not be authorized.

### **Examples:**

**RWY 27, NA - Obstacles.**

**RWY 35, NA - Environmental.**

**RWY 17, NA - Obstacles and noise abatement.**

Followed by:

**c. List the runway(s) authorized standard takeoff minimums.**

### **Example:**

**RWY 09, 31 Standard.**

Followed by:

**d. List the runway(s)** that have any *deviations* from standard minimums and/or restrictions.

### **Examples:**

(1) TAKEOFF MINIMUMS: RWY 13, 400-2 OR STANDARD WITH MINIMUM CLIMB OF 310 FT PER NM TO 900, OR ALTERNATIVELY, WITH STANDARD TAKEOFF MINIMUMS AND NORMAL 200 FT PER NM CLIMB GRADIENT, TAKEOFF MUST OCCUR NO LATER THAN 1800 FT PRIOR TO DER.

(2) TAKEOFF MINIMUMS: RWY 27, STANDARD WITH MINIMUM CLIMB OF 280 FT PER NM TO 2500, OR ALTERNATIVELY, WITH STANDARD TAKEOFF MINIMUMS AND NORMAL 200 FT PER NM CLIMB GRADIENT, TAKEOFF MUST OCCUR NO LATER THAN 1800 FT PRIOR TO DER. ATC CLIMB OF 310 FT PER NM TO 4000.

(3) TAKEOFF MINIMUMS: RWY 36, ATC CLIMB OF 340 FT PER NM TO 8000.

**Note:** The option to reduce available runway length for takeoff is only applicable to obstacle driven climb gradient and not applied for ATC climb gradients.

## **6. Takeoff Obstacle Notes.**

**a. Enter a Note regarding obstacles** found as a result of applying table 1, Situation 2 action and Situation 3, action “A” (see Form 8260-15A, Takeoff Obstacle Notes).

**Note:** An adverse assumption obstacle (AAO) must not be identified/published as a “takeoff obstacle” because pilots are not familiar with the AAO concept. However, publishing a ceiling and visibility will allow for those situations where the CG cannot be achieved and still afford the pilot the opportunity to visually acquire and avoid any obstruction that could have been built without notice to the FAA.

**b. The note must include the runway affected** and inform the pilot of the obstacle(s) type and location relative to the DER, and height (AGL/elevation (MSL)). When there are obstacles on both sides of the runway centerline extended, note the most significant obstacles left and right of the runway centerline. Phrases such as “multiple antennas, numerous trees, etc.” are acceptable. Specify distances 1 NM or greater to the nearest whole and tenth of a NM (e.g., 2.1 NM FROM DER). Specify distances less than 1 NM in feet (e.g., 1280 FT FROM DER).

### **Examples:**

**NOTE:** RWY 35, TREES 1280 FT FROM DER, 120 FT LEFT OF CENTERLINE, 50 FT AGL/1527 FT MSL.

**NOTE:** RWY 35, BUILDING 2.1 NM FROM DER, 160 FT LEFT OF CENTERLINE, 350 FT AGL/ 1927 FT MSL.

**NOTE:** RWY 17, MULTIPLE BUILDINGS 500 FT FROM DER 350 FT RIGHT OF CENTERLINE, 50 FT AGL/1107 FT MSL. ANTENNA 6000 FT FROM DER, 1235 FT LEFT OF CENTERLINE, 200 FT AGL/ 1257 FT MSL.

**NOTE:** RWY 27, MULTIPLE TREES AND ANTENNAS BEGINNING 500 FT FROM DER, 350 FT RIGHT OF CENTERLINE, UP TO 110 FT AGL/1307 FT MSL.

**c. These obstacle Notes must be published by charting agents.**

## 7. Controlling Obstacles.

a. **Document the controlling obstacle(s)** found as a result of applying table 1, Situation 3 and/or Situation 4.

**Note:** For all DPs, the controlling obstacle is that obstacle which, having penetrated the 40:1 Obstacle Clearance Surface (OCS), causes the most adverse climb gradient and/or ceiling and visibility to be published.

b. **Use the following format** to list the runway affected, elevation and type of obstacle, the coordinates to the nearest 0.01-second; e.g., **"RWY 32: 2049 FT MSL Terrain 341548.01N/ 0862101.05W."**

c. **Document the obstacle(s)** that mandated development of a specific graphic ODP route. These obstacles are not considered the "controlling obstacles" because they are not a factor to the specified route being flown. This information will not be charted on the procedure. Document these obstacles as follows:

**"OBSTACLES MANDATING ODP ROUTE DEVELOPMENT: RWY 36 - 2049 FT MSL Antenna 341658.01N/ 0863108.05W."**

8. **Lost Communications Procedures.** Air Traffic Control (ATC) is responsible for determining the need and content of lost communications instructions. Leave blank when procedures are the same as in 14 CFR Part 91.185 (standard).

9. **Additional Flight Data.** List any additional charting instructions, items essential to clarify charting or information a specialist has determined needs charting as other than a Note. Examples of data may include: terrain features, airports, Special Use Airspace (SUA), holding patterns, or takeoff and departure obstacles; e.g., **CHART \_\_\_\_\_ MOA; CHART HOLDING AT ICT VORTAC, HOLD NE, RT, 222.03 INBOUND (Include Leg Length for RNAV or DME Holding, when applicable and speed, if other than standard).** Ensure that the accompanying Form 8260-2 contains the appropriate documentation for holding patterns supporting the departure procedure.

10. **Airports Served.** List the official airport name(s), city, and 2-letter state code served by the departure procedure.

**Note:** An obstacle DP may only serve one airport.

11. **Communications.** Enter name of radio **"primary"** communications to be charted; e.g., ATIS, CTAF, Clearance Delivery, Departure Control, etc. Specify frequency only if different than what is currently published for the facility, or unique to the procedure.

12. **Fixes and/or NAVAIDs.** Enter only the fixes and/or NAVAIDs for which charting is requested but is not included in the DP route description of the departure or transition routes

13. **Remarks.** List information/data that is NOT to be charted; e.g., administrative data or notes for controller information (requested by ATC).

- 14. Flight Inspected By.** Enter the name of the airspace system inspection pilot who conducted the flight inspection, and date.
- 15. Developed By.** Enter the name of the procedure specialist developing the data, and AeroNav Products branch. This individual must sign in the “developed by” space, and enter the date signed.
- 16. Approved By.** Enter the name of AeroNav Products Manager, or his/her delegated representative. This individual must sign in the “approved by” space and enter the date signed. If the procedure is a “Special,” this line will contain the name of and be signed by AFS-400.
- 17. Coordinated With.** Specify the offices/organizations the procedure was coordinated with. Departure procedure coordination must be identical with the approach procedure coordination as outlined in Order 8260.19 (latest edition), chapter 8.
- 18. Changes.** List changes relating to data entries.
- 19. Reasons.** List reasons for changes relating to data entries.
- 20. Required Effective Date.**

**a. Enter the effective date** as noted in Order 8260.19 (latest edition), chapter 8, except that “Proposed” dates may not be used for graphic DPs. Optimally, submit as “routine.”

**Note:** En route data submission cutoff dates must apply for graphic DPs.

**b. If the Form 8260-15B represents a concurrent action,** enter “CONCURRENT” followed by the necessary information; e.g., Airport ID, IAP name and amendment number; airspace action, or other event.



Figure D-7.

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION  
**GRAPHIC DEPARTURE PROCEDURE (DP)**

Bearings, headings, courses, tracks, and radials are magnetic. Elevations and altitudes are in feet, MSL. Altitudes are minimum altitudes unless otherwise indicated. Crossings are in feet above airport elevation. Distances are in nautical miles (NM). Visibilities are in statute miles (SM) or feet RVR unless otherwise indicated. Graphic depiction attached.

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
MICKY	FOUR	MICKY4.MICKY	THREE		

Type: SID

**DP ROUTE DESCRIPTION:**

TAKEOFF Rwy 31L/R: CLIMB ON HEADING 309.71 AND GRM R-190 TO CROSS GRM VORTAC AT OR ABOVE 2000, THEN RIGHT TURN TO INTERCEPT GRM R-076 TO CROSS MICKY AT OR ABOVE 6000. MAINTAIN 9000, EXPECT CLEARANCE TO FILED ALTITUDE AT MICKY.

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

Transition Name	Computer Codes	FIX/NAVAID	From	To FIX/NAVAID	Course	Distance	MEA	MOCA	Crossing Altitudes/Fixes
HOMINY	MICKY4.HMS	MICKY	TWN VORTAC	HMS VORTAC	71.64 (TWN R-072)	10.89	3700	TWN AT/ABOVE 7000	
					097.22 & 088.54	68.47	8100	6900	
					(TWN R-097 7 HMS R-279)				
LIMMPET	MICKY4.LPT	MICKY	LPT VORTAC	LPT VORTAC	351.19 (LPT R-171)	70.98	6000	3200	
WATSON	MICKY4.WSN	MICKY	TWN VORTAC	TWN VORTAC	071.64 (TWN R-072)	10.89	3700	TWN AT/ABOVE 7000	
					076.56 & 080.47	41.61	4200		

**PROCEDURAL DATA NOTES/TAKEOFF MINIMUMS:**

NOTE: THIS SID TO BE USED ONLY UPON ASSIGNMENT BY METRO TOWER, NORMALLY BETWEEN THE HOURS OF 2100-0600 LOCAL TIME.  
TAKEOFF MINIMUMS: Rwy 31L, 13R, 18.36 NA FOR THIS SID - NOISE ABATEMENT. Rwy 31L: MINIMUM CLIMB OF 310 FT PER NM TO 2000.  
Rwy 31R: 300-1 3/4 OR STANDARD WITH MINIMUM CLIMB OF 310 FT PER NM TO 2000 OR ALTERNATIVELY, WITH STANDARD TAKEOFF MINIMUMS AND A NORMAL 200 FT PER NM CLIMB GRADIENT, TAKEOFF MUST OCCUR NO LATER THAN 2100 FT PRIOR TO DER.

**TAKEOFF OBSTACLE NOTES:**

**CONTROLLING OBSTACLES:**

Rwy 31L: 1049 FT MSL TOWER, 325304.00N/0965428.00W.  
Rwy 31R: 739 FT MSL BUILDING, 325245.67N/0965221.00W.

**LOST COMMUNICATIONS PROCEDURES:**

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION  
**GRAPHIC DEPARTURE PROCEDURE (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 (NM). Visibilities are in statute miles (SM) or feet RVR unless otherwise indicated. Graphic depiction attached.

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
MICKY	FOUR	MICKY4.MICKY	THREE		

ADDITIONAL FLIGHT DATA:AIRPORTS SERVED:

METRO JETPORT, DALLAS, TX

COMMUNICATIONS:

ATIS, CLNC DEL, GND CON, TWR, DEP CON

FIXES AND/OR NAVAIDS:

SCY VOR/DME

REMARKS:FLIGHT INSPECTED BY:

Johnathan P. Doe

DEVELOPED BY:Timothy S. Wisenheimer  
(John Q. Public)APPROVED BY:

David P. Specialist

COORDINATED WITH:

ATA, ALPA, AOPA, NBAA, ARPT MGR, MET ATCT, REG ATCT, ZFW

CHANGES:

ADDED HMS TRANSITION

REASONS:

RAPT REQUEST

REQUIRED EFFECTIVE DATE:

CONCURRENT WITH AIRSPACE DOCKET 10-ASW-28

**Appendix E. Section 1. Instructions for Completing  
FAA Form 8260-15B, Graphic Departure Procedures (DP)  
[RNAV Departure Procedures] and Sample Forms**

**1. Title Line:** The title line consists of the following six elements and will be filled in as noted.

**a. DP Name.** Enter name of departure procedure. For example, the CATHEDRAL SEVEN DEPARTURE is entered as CATHEDRAL.

**b. Number.** Enter departure procedure number (spelled out); e.g., EIGHT.

**c. DP Computer Code.** Enter computer identification code coordinated with ATC (see appendix A).

**d. Superseded Number.** Departure procedure number (spelled out) superseded by this procedure. Enter “None” for a new procedure.

**e. Dated.** Date of superseded procedure. Format: DD MMM YY.

**f. Effective Date.** Leave blank. The effective date will normally be added by NFDC. Enter an effective date only when a specific effective date is required; e.g., Mag Var rotation. If the procedure is a “Special,” enter “Special” on this line.

**2. Type:** Specify “RNAV” on this line to indicate that this is an RNAV departure. Additionally, specify “OBSTACLE” when the procedure is the default obstacle departure procedure (see paragraph 2-1b), **or** specify “SID” when the procedure is initiated by ATC (see paragraph 2-1c).

**Note:** Attach an up-to-date, clear graphic depiction of the procedure. DO NOT include a textual description of transitions or departure route text.

**3. DP Route Description.** Provide the initial climb out instructions for each runway and a textual description of the departure route to the DP termination fix. Include only information pertinent to the departure procedure. If the DP route can be clearly understood from a graphic depiction, a complete textual description is not necessary. Simply state, “...then on depicted route.” Define crossing altitudes at fixes as follows:

**a. Document ODP/SID crossing altitude restrictions in** plain text; e.g., “**CROSS GRM VORTAC AT OR ABOVE** (altitude)”; **CROSS SHEMP AT OR ABOVE** (altitude), **AT OR BELOW** (altitude); “**CROSS EDDIE AT** (altitude).”

**b. When an altitude restriction has been requested by ATC (not authorized for ODPs) at a fix in an initial SID routing (prior to reaching the SID termination fix) that is higher than the “minimum altitude” at the same fix/waypoint, the higher requested ATC altitude becomes the**

minimum altitude that will support all requirements (i.e., obstacle clearance/procedure design constraints and the ATC requirement(s)).

**c. When an “at or below” altitude restriction at a fix is necessary, compute the “minimum altitude” by applying a 200 ft per NM or the actual required nonstandard “minimum” climb gradient for obstruction clearance until reaching an altitude suitable for en route flight (refer to 14 CFR Part 91.177); then apply the provisions of TERPS Volume 1, paragraph 1730.**

**Note:** Information in this section must match the corresponding information in the Altitude column of the Form 8260-15C.

**d. See table E-1 for specific wording and required information. Specify the turn direction as either “Left/Right” as follows:**

- (1) DF legs. For all course changes exceeding 15 degrees.
- (2) CF and TF legs. For all course changes exceeding 90 degrees.

**Note:** If the DP route becomes a series of consecutive TF legs with turns less than or equal to 90 degrees, a complete textual description from that point is not necessary. Simply state, “...then on depicted route.” (See example, “TAKEOFF RWY 1”).

**e. Document all courses, headings, tracks, and distances to the nearest hundredth unit of measurement.**

**Note:** Fix/NAVAID column entries will be published verbatim on the AeroNav Services chart, with the exception of courses, headings, and tracks, which will be rounded by AeroNav Products to the nearest whole degree.

**f. When using a VA, VI, or VM leg, specify the actual heading to be flown (e.g., do not use “climb on runway heading”). Ensure courses, tracks, headings, and distances entered on Form 8260-15B match the equivalent true values and distances entered on Form 8260-15C as appropriate.**

Table E-1. Leg Type Wording and Required Information.		
8260-15C Leg Type	8260.15B Wording	8260.15B Required Information
VI	"heading"	heading
VA	"heading"	heading/altitude
DF	"direct"	turn direction*/distance**
CF	"course"	course/distance/turn direction***
TF	"track"	course/distance/turn direction***
VM	"heading"	Heading/altitude

\* Do not specify turn direction when a DF leg is used as the first leg of a DP.

\*\* Do not specify distance when part of a VA-DF leg combination.

\*\*\* Only specify turn direction for CF or TF legs when amount of turn exceeds 90°.

### **Examples:**

**VI leg followed by CF leg** – “TAKEOFF RWY 32R: CLIMB HEADING 317.66 TO INTERCEPT COURSE 041.20 TO LARRY.”

**VA leg followed by DF leg** – “TAKEOFF RWY 32R: CLIMB HEADING 317.66 TO 1000, THEN RIGHT TURN DIRECT LARRY.”

**CF leg** - “TAKEOFF RWY 1: CLIMB ON COURSE 007.52 TO LARRY, THENCE...”

**DF leg** - “TAKEOFF RWY 14L: CLIMB DIRECT CURLY, THENCE...”

**CF leg followed by TF legs (less than 90 degree course changes)** – “TAKEOFF RWY 1: CLIMB ON COURSE 007.52 TO LARRY, THEN ON DEPICTED ROUTE TO SEMP, THENCE...”

**CF leg followed by DF leg** – “TAKEOFF RWY 14L: CLIMB ON COURSE 137.64 TO CROSS CURLY AT OR ABOVE 1000, THEN LEFT TURN DIRECT SEMP, THENCE...”

**VM leg** – “TAKEOFF RWY 35C: CLIMB HEADING 350.11 OR AS ASSIGNED BY ATC TO 3000, EXPECT VECTORS TO AIMEE, THENCE...”

## **4. Transition Routes.** (Not Authorized for ODPs.)

**a. Transition Name.** Name each transition according to the name of the fix at the transition termination point entered in appendix E, paragraph 4d. Do not include the word “TRANSITION.”

**b. Transition Computer Codes.** Enter computer code as coordinated with ATC (see appendix A).

**c. From FIX/NAVAID.** Fix/NAVAID where each transition begins (normally, the en route fix where the DP ends); e.g., **DANNY, BICKR**.

**d. To FIX/NAVAID.** En route fix/NAVAID where each transition ends; e.g., **DANNY, BICKR**. If a transition has multiple segments, enter one line for each segment.

**e. Course.** Specify the course for each transition segment. Enter the actual magnetic course to the hundredth of a degree (see Order 8260.19, chapter 8). When documenting the course between facilities, provide this information for both facilities.

**Examples:**

**DF leg** – “DIRECT”, “RIGHT TURN DIRECT”, OR “LEFT TURN DIRECT”

**CF leg** – Not used for transition routing.

**TF leg** – “TRACK 067.11 ” or “RIGHT TURN, TRACK 054.94”

076.56 & 080.47 (TWN R-077 & WSN R-260)

**Note 1:** The VA or VI leg, when used, will be used only on the first leg of a departure and as such a VA/VI leg should not appear in the transition route.

**Note 2:** AeroNav Services will round for publication.

**f. Distance.** Specify the distance for each transition segment. Enter the distance to the hundredth of a mile (see Order 8260.19, chapter 8). When documenting the course/distance between facilities, provide this information for both facilities.

**Example:** 41.61 **Note:** AeroNav Services will round for publication.

**g. MEA.** Enter MEA along transition route. By definition, the MEA also encompasses the MRA. If transitions share a common segment, make sure the MEA for that segment is the same for each transition.

**h. MOCA.** Enter MOCA along transition route. To reduce chart clutter, MOCAs less than 500 below MEAs should not be published.

**i. Crossing Altitudes/Fixes.** When a **SID Transition(s)** must accommodate an ATC required altitude at a specified fix, only document the ATC altitude; e.g., “**BECKY AT/ABOVE 9000.**” No secondary altitude is required on transition routes since an MEA is specified that will provide obstacle clearance and ensure design constraints are met. The ATC altitude must not be lower than the MEA.

**5. Procedural Data Notes/Takeoff Minimums.**

**a. List any procedural data information** that is to appear in note form on the graphic depiction; e.g., minimum climb rate information, etc. Also, depict all restrictions and performance requirements to fly the procedure. See appendix A, paragraph 5e, for specific information that must be charted and entered in this section. See Order 8260.19, paragraph 8-71g, for a chart note that is required if the SID/Graphic ODP is a Special.

Followed by:

**b. List the runway(s)** that are not authorized for IFR departures. If none of the actions listed in table 1 are feasible, or if another reason(s) precludes DP development (noise abatement, environmental, etc.), an IFR departure must not be authorized.

**Examples:**

**RWY 27, NA - OBSTACLES.**

**RWY 35, NA - ENVIRONMENTAL.**

**RWY 17, NA - OBSTACLES AND NOISE ABATEMENT.**

Followed by:

**c. List the runway(s) authorized standard takeoff minimums.**

**Example:**

**RWY 09, 31 STANDARD.**

Followed by:

**d. List the runway(s)** that have any deviations from standard minimums and/or restrictions;

**Examples:**

**TAKEOFF MINIMUMS:** RWY 13, 400-2 OR STANDARD WITH MINIMUM CLIMB OF 310 FT PER NM TO 900, OR ALTERNATIVELY, WITH STANDARD TAKEOFF MINIMUMS AND A NORMAL 200 FT PER NM CLIMB GRADIENT, TAKEOFF MUST OCCUR NO LATER THAN 1800 FT PRIOR TO DER.

**TAKEOFF MINIMUMS:** RWY 27, STANDARD WITH MINIMUM CLIMB OF 280 FT PER NM TO 2500, OR ALTERNATIVELY, WITH STANDARD TAKEOFF MINIMUMS AND A NORMAL 200 FT PER NM CLIMB GRADIENT, TAKEOFF MUST OCCUR NO LATER THAN 1800 FT PRIOR TO DER. ATC CLIMB OF 310 FT PER NM TO 4000.

**TAKEOFF MINIMUMS:** RWY 36, ATC CLIMB OF 340 FT PER NM TO 8000.

**Note:** The option to reduce available runway length for takeoff is only applicable to obstacle driven climb gradient and not applied for ATC climb gradients.

## **6. Takeoff Obstacle Notes.**

**a. Enter a NOTE regarding obstacles** found as a result of applying table 1, Situation 2 action and Situation 3, action “A.”

**Note:** An adverse assumption obstacle (AAO) must not be identified/published as a “takeoff obstacle” because pilots are not familiar with the AAO concept. However, publishing a ceiling and visibility will allow for those situations where the CG cannot be achieved and still afford the pilot the opportunity to visually acquire and avoid any obstruction that could have been built without notice to the FAA.

**b. The note must include the runway affected** and inform the pilot of the obstacle(s) type and location relative to the DER, and height (AGL/elevation [MSL]). When there are obstacles on both sides of the runway centerline extended, note the most significant obstacles left and right of the runway centerline. Phrases such as “multiple antennas, numerous trees, etc.” are acceptable. Specify distances 1 NM or greater to the nearest whole and tenth of a NM (e.g., 2.1 NM FROM DER). Specify distances less than 1 NM in feet (e.g., 1280 FT FROM DER).

Examples:

**NOTE:** RWY 35, TREES 1280 FT FROM DER, 120 FT LEFT OF CENTERLINE, 50 FT AGL/1527 FT MSL.

**NOTE:** RWY 35, BUILDING 2.1 NM FROM DER, 160 FT LEFT OF CENTERLINE, 350 FT AGL/1927 FT MSL.

**NOTE:** RWY 17, MULTIPLE BUILDINGS 500 FT FROM DER, 350 FT RIGHT OF CENTERLINE, 50 FT AGL/1,107 FT MSL. ANTENNA 6000 FT FROM DER, 1235 FT LEFT OF CENTERLINE, 200 FT AGL/1257 FT MSL.

**NOTE:** RWY 27, MULTIPLE TREES AND ANTENNAS BEGINNING 500 FT FROM DER, 350 FT RIGHT OF CENTERLINE, UP TO 110 FT AGL/1307 FT MSL.

**c. These obstacle NOTES must be published by charting agents.**



## 7. Controlling Obstacles.

**a. Document the controlling obstacle(s)** found as a result of applying table 1, Situation 3 and/or Situation 4.

**Note:** For all DPs, the controlling obstacle is that obstacle which, having penetrated the 40:1 Obstacle Clearance Surface (OCS) causes the most adverse climb gradient and/or ceiling and/or visibility to be published.

**b. Use the following format** to list the runway affected, elevation and type of obstacle, the coordinates to the nearest 0.01 second, and if applicable, OCS height above DER elevation; e.g., **“RWY 32: 2049 FT MSL TERRAIN 341548.01N/0862101.05W.”**

**c. Document the obstacle(s)** that mandated development of a specific RNAV ODP route. These obstacles are not considered the “controlling obstacles” because they are not a factor to the specified route being flown. This information will not be charted on the procedure. Document these obstacles as follows:

**“OBSTACLES MANDATING ODP ROUTE DEVELOPMENT: RWY 36 - 2049 FT MSL ANTENNA 341658.01N/ 0863108.05W.”**

**8. Lost Communications Procedures.** ATC is responsible for determining the need and content of lost communications instructions. Leave blank when procedures are the same as in 14 CFR Part 91.185 (standard).

**9. Additional Flight Data.** List any additional charting instructions, items essential to clarify charting or information a specialist has determined needs charting as other than a NOTE. Examples of data may include:

**a. Terrain features, airports,** military operating areas (MOA), holding patterns, or takeoff and departure obstacles; e.g., **CHART: \_\_\_\_\_ MOA; CHART: HOLDING PATTERN AT ICT VORTAC, HOLD NE, RT, 222.03 INBOUND** (Include Leg Length for RNAV or DME Holding, when applicable and speed, if other than standard). Ensure that the accompanying Form 8260-2 contains the appropriate documentation for holding patterns supporting the departure procedure.

**b. Document the MEA/MOCA for the segment** between the IF and Basic DP fix on RNAV Radar departure procedures as follows: **CHART: MEA/MOCA FROM (RNAV IF) TO (BASIC DP FIX), (Altitude).**

**c. Place the reference (departure airport) magnetic variation** of record used to develop the procedure in this section. Include the point of reference and the epoch year. Example: **“REFERENCE MAG VAR: KFCR 2W EPOCH YR: 2000”**

**d. DME Assessment (Enter one of the following):**

- (1) “DME/DME ASSESSMENT: SAT (RNP 1.0 OR 2.0 AS APPROPRIATE).” Indicates a successful assessment to the RNP value specified.
- (2) “DME/DME ASSESSMENT: UNSAT (RNP 1.0), SAT (RNP 2.0).” Indicates an unsuccessful assessment to RNP 1.0, but returned a successful assessment to RNP 2.0.
- (3) “DME/DME ASSESSMENT: UNSAT.” Indicates an unsuccessful assessment to RNP 2.0.
- (4) “DME/DME Assessment: NOT CONDUCTED.”

**Note 1:** If the DME/DME assessment indicates “UNSAT” or “NOT CONDUCTED,” the note “GPS Required” must be entered in the Procedural Data Notes/Takeoff Minimums section.

**Note 2:** The DME/DME assessment process is covered in separate guidance.

e. **Use this section to describe the** Pilot Navigation Area (PNA) for RNAV Radar departures. The description will be in the following manner:

**PILOT NAVIGATION AREA:**

**7 NM ARC CENTERED ON WAYPT (IF), CW**  
**FROM: POINT A (BEARING 015 DEGREES TO WAYPT)**  
**TO: POINT B (BEARING 105 DEGREES TO WAYPT)**  
**MINIMUM ALTITUDE - 4000**

**Note:** The illustration in figure E-1 is provided as an example of what this text is describing. An illustration may be provided but is not required on the form.

Figure E-2.

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION  
**GRAPHIC DEPARTURE PROCEDURE (DP)**

Bearings, headings, courses, tracks, and radials are magnetic. Elevations and altitudes are in feet, MSL. Altitudes are minimum altitudes unless otherwise indicated. Cellings are in feet above airport elevation. Distances are in nautical miles (NM). Visibilities are in statute miles (SM) or feet RVR unless otherwise indicated. Graphic depiction attached.

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
<b>SHEMP</b>	<b>ONE</b>	<b>SHEMP1.SHEMP</b>	<b>NONE</b>		

Type: RNAV SID

**DP ROUTE DESCRIPTION:**

TAKEOFF RWY 1: CLIMB ON COURSE 007.52 TO LARRY, THEN ON DEPICTED ROUTE TO SHEMP, THENCE...  
TAKEOFF RWY 14L: CLIMB ON COURSE 137.84 TO CROSS CURLY AT OR ABOVE 1000, THEN CLIMBING LEFT TURN DIRECT SHEMP, THENCE...  
TAKEOFF RWY 32R: CLIMB ON 317.66 HEADING TO AT OR ABOVE 1000, THEN TURN RIGHT DIRECT TO LARRY, THEN ON DEPICTED ROUTE TO SHEMP, THENCE...  
... (TRANSITION), MAINTAIN 5000, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.

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

Transition Name	Computer Codes	FIX/NAVAID	From	To FIX/NAVAID	Course	Distance	MEA	MOCA	Crossing Altitudes/Fixes
FOGART	SHEMP1.FGH	SHEMP		FGH VORTAC	TRACK 087.11	87.24	5000	3700	
JENKO	SHEMP1.JKL	SHEMP		JKL VORTAC	TRACK 098.77	92.51	5000		
LAYMAN	SHEMP1.LMN	SHEMP		LMN VOR/DME	RIGHT TURN TRACK 154.94	47.23	5000	4100	
ROOSTER	SHEMP1.RST	SHEMP		LMN VOR/DME	RIGHT TURN TRACK 154.94	47.23	5000	4100	
				RST VORTAC	TRACK 098.38	39.79	7000	4400	

**PROCEDURAL DATA NOTES/TAKEOFF MINIMUMS:**

TAKEOFF MINIMUMS: RWY 14R: 19, 32L NA - AIR TRAFFIC. RWY 1, 32R STANDARD. RWY 14L 500-2 1/2 OR STANDARD WITH MINIMUM CLIMB OF 330 FT PER NM TO 1200.  
NOTE: DME/DME/IRU OR GPS REQUIRED  
NOTE: RNAV-1  
NOTE: RADAR REQUIRED FOR NON-GPS EQUIPPED AIRCRAFT

**TAKEOFF OBSTACLE NOTES:**

NOTE: RWY 1, OBSTRUCTION LIGHT 1022 FT FROM DER, 672 FT RIGHT OF CENTERLINE, 73 FT AGL/543 FT MSL.  
NOTE: RWY 14L, BUILDING 1.96 NM FROM DER, 575 FT RIGHT OF CENTERLINE, 478 FT AGL/974 FT MSL.  
NOTE: RWY 32R, TREES 143 FT LEFT OF DER, 21 FT AGL/498 FT MSL.

**CONTROLLING OBSTACLES:**

RWY 1: 543 FT MSL OBSTRUCTION LIGHT, 325141.44N/0965102.87W.  
RWY 14L: 974 FT MSL BUILDING, 324911.09N/0964638.82W.  
RWY 32R: 1049 FT MSL TOWER, 325216.19N/0965523.02W, 498 FT MSL TREES, 325125.20N/0965125.68W.

**LOST COMMUNICATIONS PROCEDURES:**

U.S. DEPARTMENT of TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION  
**GRAPHIC DEPARTURE PROCEDURE (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 (NM). Visibilities are in statute miles (SM) or feet RVR unless otherwise indicated. Graphic depiction attached.

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
<b>SHEMP</b>	<b>ONE</b>	<b>SHEMP1.SHEMP</b>	<b>NONE</b>		

**ADDITIONAL FLIGHT DATA:**

REFERENCE MAG VAR: KFCR 2W EPOCH YR: 00  
DME/DME ASSESSMENT: UNSAT

**AIRPORTS SERVED:**

FOUR CLOWNS REGIONAL, VICTORVECTORVILLE, TX

**COMMUNICATIONS:**

ATTIS, CLNC DEL, GND CON, FCR ATCT, ARCON DEP CON

**FIXES AND/OR NAVAIDS:****REMARKS:****FLIGHT INSPECTED BY:**

Johnathan P. Doe

FIOG 4/15/2010

**REQUIRED EFFECTIVE DATE:**  
ROUTINE

**DEVELOPED BY:**

Timothy S. Wisenheimer  
(John Q. Public)

AJV-352 2/13/2010

**APPROVED BY:**

David P. Specialist

AJV-352 6/12/2010

**COORDINATED WITH:**

ATA, ALPA, APA, AOPA, NBAA, ARPT MGR, FCR ATCT, ZFW

**CHANGES:****REASONS:**

Figure E-3.

U.S. DEPARTMENT of TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

GRAPHIC DEPARTURE PROCEDURE (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 (NM). Visibilities are in statute miles (SM) or feet RVR unless otherwise indicated. Graphic depiction attached.

DP Name  
SHEMP

Number  
TWO

DP Computer Code  
SHEMP2.SHEMP

Superseded Number  
ONE

Dated  
18-Apr-02

Effective Date

Type: RNAV SID

DP ROUTE DESCRIPTION:

TAKEOFF RWY 1: CLIMB ON COURSE 007.52 TO CROSS LARRY AT OR ABOVE 2000, THEN ON TRACK 038.92 TO CROSS MOEHH AT OR ABOVE 3000, THEN ON TRACK 091.64 TO CROSS SHEMP AT OR ABOVE 5000, AT OR BELOW 8000, THENCE...  
TAKEOFF RWY 14L: CLIMB ON COURSE 137.64 TO CROSS CURLY AT OR ABOVE 1000, THEN TURN LEFT ON TRACK 059.62 TO CROSS SHEMP AT OR ABOVE 5000, AT OR BELOW 8000, THENCE...  
TAKEOFF RWY 32R: CLIMB ON HEADING 317.66 TO AT OR ABOVE 1000, THEN TURN RIGHT DIRECT TO CROSS LARRY AT OR ABOVE 2000, THEN ON TRACK 038.92 TO CROSS MOEHH AT OR ABOVE 3000, THEN ON TRACK 091.64 TO CROSS SHEMP AT OR ABOVE 5000, AT OR BELOW 8000, THENCE...  
... (TRANSITION), MAINTAIN 5000, EXPECT FILED ALTITUDE 10 MINUTES AFTER DEPARTURE.

TRANSITION ROUTES (GRAPHIC DEPICTION ONLY):

Transition Name	Computer Codes	From	To	Course	Distance	MEA	MOCA	Crossing Altitudes/Fixes
FOGART	SHEMP2.FGH	SHEMP	FGH VORTAC	TRACK 065.11	87.24	5000	3700	
JENKO	SHEMP2.JKL	SHEMP	JKL VORTAC	TRACK 096.77	92.51	5000		
OPAKE	SHEMP2.OPQ	SHEMP	OPQ	LEFT TURN	52.21	4000	3300	
			VOR/DME	TRACK 003.19				
ROOSTER	SHEMP2.RST	SHEMP	RST VORTAC	TRACK 098.38	39.79	7000	4900	

PROCEDURAL DATA NOTES TAKEOFF MINIMUMS:

TAKEOFF MINIMUMS: RWY 14R, 19, 32L NA - AIR TRAFFIC. RWY 1, 32R STANDARD. RWY 14L 500-2 1/2 OR STANDARD WITH MINIMUM CLIMB OF 330 FT PER NM TO 1200.  
NOTE: GPS REQUIRED.  
NOTE: RNAV-1

TAKEOFF OBSTACLE NOTES:

NOTE: RWY 1, OBSTRUCTION LIGHT 1022 FT FROM DER, 672 FT RIGHT OF CENTERLINE, 73 FT AGL/543 FT  
NOTE: RWY 14L, BUILDING 1.96 NM FROM DER, 575 FT RIGHT OF CENTERLINE, 478 FT AGL/974 FT MSL.  
NOTE: RWY 32R, TREES 143 FT LEFT OF DER, 21 FT AGL/498 FT MSL.

CONTROLLING OBSTACLES:

RWY 1: 543 FT MSL OBSTRUCTION LIGHT, 325141.44N/0965102.87W.  
RWY 14L: 974 FT MSL BUILDING, 324911.09N/0964838.62W.  
RWY 32R: 1049 FT MSL TOWER, 325216.19N/0965523.02W, 498 FT MSL TREES, 325125.20N/0965125.68W.

LOST COMMUNICATIONS PROCEDURES:

FAA Form 8260-15B / August 2009 (Computer Generated)

Page 1 of 2

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION  
**GRAPHIC DEPARTURE PROCEDURE (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 (NM). Visibilities are in statute miles (SM) or feet RVR unless otherwise indicated. Graphic depiction attached.

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
SHEMP	TWO	SHEMP2.SHEMP	ONE	18-Apr-02	

**ADDITIONAL FLIGHT DATA:**

REFERENCE MAG VAR: KFCR 2W EPOCH YR: 00  
DME/DME ASSESSMENT: UNSAT

**AIRPORTS SERVED:**

FOUR CLOWNS REGIONAL, VICTORVILLE, TX

**COMMUNICATIONS:**

ATIS, CLNC DEL, GND CON, FCR ATCT, ARCON DEP CON

**FIXES AND/OR NAVAIDS:****REMARKS:****FLIGHT INSPECTED BY:**

Jonathan P. Doe

FIQG 4/15/2011

**REQUIRED EFFECTIVE DATE:**

ROUTINE

**DEVELOPED BY:**

Timothy S. Wisenheimer  
(John Q. Public)

AJV-352 2/13/2011

**APPROVED BY:**

David P. Specialist

AJV-352 6/12/2011

**COORDINATED WITH:**

ATA, ALPA, APA, AOPA, NBAA, ARPT MGR, FCR ATCT, ZFW

**CHANGES:**

1. ADDED OPQ TRANSITION.
2. REMOVED LMN VOR/DME FROM RST TRANSITION
3. RELOCATED MOEHH
4. DELETED AUTHORIZATION TO USE DME/DME/IRU
5. DELETED NOTE: RADAR REQUIRED FOR NON-GPS EQUIPPED AIRCRAFT

**REASONS:**

- 1-3. RAPT REQUEST.
- 4-5. ABILITY TO USE DME/DME/IRU NO LONGER AVAILABLE

## Appendix E. Section 2. Instructions for Completing FAA Form 8260-15C, Departure (Data Record) and Sample Forms

**1. Basic instructions for completing Form 8260-15C.** Detailed instructions are contained in appendix E, paragraphs 2 through 5. Enter a dash (e.g., “-”) in the FO/FB, Leg Type, TC (True Course), and Distance columns when they are intentionally left blank.

**a. Fix/NAVAID.** Enter the name of the fix/NAVAID in one of the following formats: (5-letter pronounceable name; (NAVAID) 3-letter facility ID and type (e.g., ABC VORTAC).

**b. Lat/Long.** Enter the latitude and longitude, separated by a “slant(/)” to the nearest hundredth of a second.

**c. C (Chart).** Enter a Y (yes) if a fix is to be charted. Enter an N (no) if a fix does not require charting. Any fix where a change in altitude, course, or speed, including WPs where turns or transitions begin and end, require charting.

**d. FO/FB.** Enter the FO (Fly-over) or FB (Fly-by) as appropriate to indicate desired use. FB is the normal designation. Determination is based on operational or obstacle requirements.

**e. Leg Type.** Enter the two-letter ARINC-24 code for leg-type; e.g., IF, TF, RF, etc.

**f. TC.** Enter the true course (TC) to the nearest hundredth of a degree. The charting agency will apply magnetic variation, if necessary, and round for publication.

**g. Dist.** Enter the distance to the nearest hundredth of a NM. The charting agency will round for publication.

**h. Altitude.** Enter the minimum, mandatory, or maximum altitude in 100-ft increments (or Flight Levels in 1000-ft increments) and label each altitude/flight level as “at/above,” “at,” or “at/below.” Enter “block altitudes” with a “B” between the altitude values; e.g., 5000B8000.

**i. Speed.** Enter the minimum, mandatory, or maximum airspeed(s) in KIAS. Optionally, the airspeed may be entered as ground speed (GS). Label airspeed restrictions as “at/above,” “at,” or “at/below,” as appropriate. Following the numerical value, add “K” for KIAS, or “G” for ground speed. Enter restrictions only where necessary for procedural containment, or for traffic flow requirements.

**j. Remarks.** Enter any pertinent information that would clarify a data entry; e.g., airspeed restriction for turn radius. Additionally, such items as CG restrictions, displaced threshold information, transition computer code, etc, are also placed in this column. (Enter a change bar to indicate removal of text at the end of this paragraph).

**2. The departure routing from each authorized runway to the DP fix** (i.e., the DP termination fix) is documented first, followed by the routing from the DP fix to each transition fix as appropriate.



**3. Departure Routing to DP Fix (see examples).** The initial departure routing represents the most complex portion of documenting the RNAV or RNP DP. The first three lines of the 8260-15C are typically the most problematic, largely due to the variables associated with permissible leg types and waypoint sequencing. The following line-by-line explanation used in conjunction with guidance in appendix A, paragraph 5b, outlines the departure sequence element (i.e., from AER to DP fix). Fix/Navaid, Lat/Long, “C” (chart), FO/FB, Leg Type, TC (True Course), and Distance columns are required entries except as noted. Altitude and Speed columns enter restrictions associated with the Fix/NAVAID column as appropriate.

**\*Note:** WP placement is computed from DER as outlined in Order 8260.44 (latest edition); AER is a required coding element used for course/heading and distance computations.

#### **4. For each authorized runway:**

##### **a. First line (of each element):**

- (1) In the Fix/NAVAID column, enter the AER. Example: “RW14L (AER).”
- (2) In the Lat/Long column, enter the AER lat/long. If the runway threshold is displaced, enter the displaced AER lat/long and note the amount of displacement in Remarks column. Example: “RW 14L (AER)\*, 325117.19N/0965114.05W\*, \*DISPL THLD (1273 FT).”
- (3) In the “C” column, enter “N.”
- (4) Remaining columns, leave blank.

**Note:** For procedures that are strictly Radar Vectors to RNAV, an AER entry is not necessary (i.e., the first entry will be an IF). For procedures that incorporate Radar Vectors to RNAV for one or more runways on the same chart that contains an RNAV route departure off of other runways, the runway(s) that use Radar Vectors to RNAV will require an “AER” entry prior to defining the IF.

##### **b. Second line options:**

- (1) CF leg from AER to FB/FO: **True Course and Distance columns**, enter true course/distance from AER to the next fix (see example SHEMP ONE, RW01).
- (2) DF leg from AER to FB/FO: **True Course column**, leave blank. **Distance column**, enter distance from AER to the next fix (see example SHEMP TWO, RW01).
- (3) VI to CF leg (See third line options for required CF entries): **Fix/NAVAID column**, leave blank. **Lat/Long column**, enter the computed lat/long of the VI/CF intersect point. **C columns**, leave blank. **True Course column**, enter the true heading to be flown as



computed from AER to VI/CF intersect point. **Distance column**, enter distance from AER to VI/CF intersect point. **Speed and Altitude columns**: Leave blank.

(4) VA to DF leg (See third line options for required DF entries): **Fix/NAVAID column**, Enter the climb-to MSL altitude. **Lat/Long, C, and FO/FB columns**, leave blank. **True Course column**, enter the true azimuth of the takeoff runway. **Distance, Altitude, and Speed columns**, leave blank. (See example for SHEMP TWO, RW32R.)

**c. Third line options (if required; third line required for VA combinations):**

(1) DF leg (preceded by FO WP): **True Course column**, leave blank. **Distance column**, enter the distance between the plotted positions of fixes. **Remarks column**, specify turn direction as either “Left/Right Turn” when required (see example SHEMP ONE, RW14L).

(2) TF leg: **True Course and Distance columns**, enter the true course and distance between the plotted position of fixes. **Remarks Column**, specify turn direction as described above only if course change exceeds 90 degrees.

(3) CF leg (VI/CF combination): **True Course and Distance columns**, enter the true course and distance from the VI/CF intersect point to the next fix (CF termination fix). **Remarks column**, specify turn direction as described above only if course change exceeds 90 degrees (see example SHEMP ONE, RW32R).

(4) DF leg (VA/DF combination): **True Course and Distance columns**, leave blank. **Remarks column**, specify turn direction as either “Left/Right Turn” when required (see example SHEMP TWO, RW32R).

**d. Fourth and subsequent lines (DF or TF only):** Same as third line (1) & (2) entries.

**e. The DP routing concludes** with the DP fix data entered on the last line of each routing element. Repeat this process until all authorized runways have been entered.

**5. Transition Routing (see examples).**

**a. For each transition:**

(1) First line (of each element):

(a) Fix/NAVAID and Lat/Long columns: Enter the DP fix name and lat/long.

(b) “C” (chart) column: Enter “Y”.

(c) FO/FB column: Leave blank.

(d) Leg Type column: Enter “IF.”

(e) True Course, Distance, Altitude, and Speed columns: Leave blank.

(f) Remarks column: Enter the transition computer code.

(2) Second and subsequent lines (DF or TF only): Same as departure routing element third line (1) and (2) entries. Enter the transition fix data on the last line of the transition routing element.

Figure E-6.

## DEPARTURE (DATA RECORD)

DP Name SHEMP	LAT/LONG	C	FO/FE	LEG	TC	Number ONE	DP Computer Code SHEMP1.SHEMP	Superseded Number NONE	Dated	Effective Date
FIX/NAVAID										
RW01 (AER)	325030.65N/0965118.52W	N	-	-	-	-	-	-	-	-
LARRY	325615.86N/0965038.96W	Y	FB	CF	005.52	5.77				
MOEHH	330002.41N/0964701.80W	Y	FB	TF	038.92	4.84				
SHEMP	325932.61N/0962728.24W	Y	FB	TF	091.64	16.46				
RWY14L (AER)*	325117.19N/0965114.05W*	N	-	-	-	-	-	-	-	-
CURLY	324935.46N/0964916.24W	Y	FO	CF	135.64	2.37	AT/ABOVE 1000			*DISPL THLD (1273 FT)
SHEMP	325932.61N/0962728.24W	Y	FB	DF		20.87				CG 330 FT PER NIM TO 1200 LEFT TURN
RW32R (AER)	325031.35N/0965020.95W	N	-	-	-	-	-	-	-	-
1000 MSL	-	-	-	VA	315.66	3.84				
LARRY	325615.86N/0965038.96W	Y	FO	DF	-	-				RIGHT TURN
MOEHH	330002.41N/0964701.80W	Y	FO	TF	038.92	4.84				
SHEMP	325932.61N/0962728.24W	Y	FO	TF	091.64	16.46				
SHEMP	325932.61N/0962728.24W	Y	-	IF	-	-	-	-	-	SHEMP1.FGH
FGH VORTAC	333543.94N/0945243.79W	Y	FB	TF	065.11	87.24				
SHEMP	325932.61N/0962728.24W	Y	-	IF	-	-	-	-	-	SHEMP1.JKL
JKL VORTAC	324749.41N/0943828.97W	Y	FB	TF	096.77	92.52				
SHEMP	325932.61N/0962728.24W	Y	-	IF	-	-	-	-	-	SHEMP1.LMN
LMN VOR/DME	321721.40N/0960207.48W	Y	FB	TF	152.94	47.23				
SHEMP	325932.61N/0962728.24W	Y	-	IF	-	-	-	-	-	SHEMP1.RST
LMN VOR/DME	321721.40N/0960207.48W	Y	FB	TF	152.94	47.23				
RST VORTAC	321246.96N/0951530.88W	Y	FB	TF	096.38	39.79				

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Figure E-8.

## DEPARTURE (DATA RECORD)

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date		
ARKES	ONE	ARKES1,ARKES	NONE				
FIX/NAVAID							
LAT/LONG	C	FOI/FB TYPE	LEG	DIST (NM)	ALTITUDE	SPEED	REMARKS
RW09L (AER)*	360436.98N/0800953.20W	N	-	-	-	-	*DISPL THLD (577 FT)
520 MSL	-	-	-	VA	090.36	-	
JUMAR	260431.29N/0795501.17W	Y	FB	DF	-	-	
HAPOR	261243.07N/0795555.56W	Y	FB	TF	348.15	8.35	LEFT TURN
SECOR	261427.18N/0801120.40W	Y	FB	TF	277.66	13.08	
ATONE	262312.14N/0802123.68W	Y	FB	TF	314.03	12.56	
ARKES	263437.73N/0802503.60W	Y	FB	TF	343.91	11.86	
RW09R (AER)*	360357.49N/0800933.63W	N	-	-	-	-	*DISPL THLD (320 FT)
520 MSL	-	-	-	VA	090.38	-	
JUMAR	260431.29N/0795501.17W	Y	FB	DF	-	-	LEFT TURN
HAPOR	261243.07N/0795555.56W	Y	FB	TF	348.15	8.35	LEFT TURN
SECOR	261427.18N/0801120.40W	Y	FB	TF	277.66	13.08	
ATONE	262312.14N/0802123.68W	Y	FB	TF	314.03	12.56	
ARKES	263437.73N/0802503.60W	Y	FB	TF	343.91	11.86	
RW113 (AER)	260444.05N/0800937.40W	N	-	-	-	-	
520 MSL	-	-	-	VA	135.36	-	CG 500 FT PER NM TO 520
JUMAR	260431.29N/0795501.17W	Y	FB	DF	-	-	LEFT TURN
HAPOR	261243.07N/0795555.56W	Y	FB	TF	348.15	8.35	LEFT TURN
SECOR	261427.18N/0801120.40W	Y	FB	TF	277.66	13.08	
ATONE	262312.14N/0802123.68W	Y	FB	TF	314.03	12.56	
ARKES	263437.73N/0802503.60W	Y	FB	TF	343.91	11.86	
RW27L (AER)*	360357.17N/0800840.84W	N	-	-	-	-	*DISPL THLD (142 FT)
520 MSL	-	-	-	VA	270.39	-	CG 500 FT PER NM TO 520
NOVAE	260438.90N/0801553.29W	Y	FB	DF	-	-	RIGHT TURN
KRMIT	261322.00N/0801316.69W	Y	FB	TF	346.11	8.95	
ATONE	262312.14N/0802123.68W	Y	FB	TF	344.07	10.20	
ARKES	263437.73N/0802503.60W	Y	FB	TF	343.91	11.86	
RW27R (AER)*	360436.49N/0800827.45W	N	-	-	-	-	*DISPL THLD (604 FT)
520 MSL	-	-	-	VA	270.36	-	CG 500 FT PER NM TO 520
NOVAE	260438.90N/0801553.29W	Y	FB	DF	-	-	
KRMIT	261322.00N/0801316.69W	Y	FB	TF	346.11	8.95	
ATONE	262312.14N/0802123.68W	Y	FB	TF	344.07	10.20	
ARKES	263437.73N/0802503.60W	Y	FB	TF	343.91	11.86	

## DEPARTURE (DATA RECORD)

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date			
ARKES	ONE	ARKES1,ARKES	NONE					
FIX/NAVAID	LAT/LONG	C	FOI/FB	LEG	DIST	ALTITUDE	SPEED	REMARKS
RW31 (AER)*	260355.70N/0800844.54W	N	-	-	-	-	-	*DISPL THLD (70 FT)
520 MSL	-	-	-	VA	315.37	-	-	CG 500 FT PER NM TO 520
NOVAE	260438.90N/0801553.29W	Y	FB	DF	-	-	-	LEFT TURN
KRMIT	261322.00N/0801316.69W	Y	FB	TF	346.11	8.95	-	
ATONE	262312.14N/0802123.68W	Y	FB	TF	344.07	10.20	-	
ARKES	263437.73N/0802303.60W	Y	FB	TF	343.91	11.86	-	

**Figure E-9.**

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