NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8900.644

National Policy

Effective Date:
11/16/22

Cancellation Date:
11/16/23

SUBJ: OpSpec/MSpec/LOA C073, Vertical Navigation (VNAV) Instrument Approach Procedures (IAP) Using Minimum Descent Altitude (MDA) as a Decision Altitude (DA)

1. Purpose of This Notice. This notice announces a nonmandatory revision to operations specification (OpSpec)/management specification (MSpec)/Letter of Authorization (LOA) C073. It also provides for the implementation of guidance for operations under Title 14 of the Code of Federal Regulations (14 CFR) parts 91, 91 subpart K (part 91K), 121, 121/135, 125 (including part 125 Letter of Deviation Authority (LODA) holders), and 135.

2. Audience. The primary audience for this notice is responsible Flight Standards (FS) Safety Assurance offices, certificate management offices (CMO), aviation safety inspectors (ASI), and principal inspectors (PI) assigned to operators under parts 91, 91K, 121, 125, 125 LODA holder, 135, and 121/135. The secondary audience includes Safety Standards and Foundational Business offices.

3. Where You Can Find This Notice. You can find this notice on the MyFAA employee website at https://employees.faa.gov/tools_resources/orders_notices and the Dynamic Regulatory System (DRS) at https://drs.faa.gov. Operators and the public can find this notice on the Federal Aviation Administration's (FAA) website at https://www.faa.gov/regulations_policies/orders_notices and DRS.

4. Background. This change ensures all certificate holders (CH)/operators/program managers/part 125 LODA holders with certified aircraft may be authorized to use OpSpec/MSpec/LOA C073. This change updates the use of the barometric vertical navigation (baro-VNAV) system during cold temperature operations and removes decision height (DH) from OpSpec/MSpec/LOA C073, because only a decision altitude (DA) (referenced by a barometric altimeter) should be used when using a minimum descent altitude (MDA) as a DA. A DH (referenced by a radio altimeter) should not be used. This revision to OpSpec/MSpec/LOA C073:

- Removes DH from the title and body of OpSpec/MSpec/LOA C073.
- Adds a line of criteria to the requirements for an authorized approach.

- Adds information on the use of baro-VNAV outside of the Area Navigation (RNAV) (Global Positioning System (GPS)) or RNAV (Required Navigation Performance (RNP)) instrument approach procedure (IAP) temperature range limitation.
- Removes "Decision Height (DH)" from the OpSpec/MSpec/LOA A004, Summary of Special Authorizations and Limitations, authorization statement for OpSpec/MSpec/LOA C073.

5. Guidance. The Flight Technologies and Procedures Division (AFS-400) developed this notice and updated the following guidance:

a. OpSpec/MSpec/LOA Templates. This notice contains the following:

- The sample OpSpec C073 template in Appendix A applies to part 121.
- The sample OpSpec C073 template in Appendix B applies to part 125.
- The sample OpSpec C073 template in Appendix C applies to part 135.
- The sample OpSpec C073 template in Appendix D applies to part 121/135.
- The sample LOA C073 template in Appendix E applies to part 91.
- The sample LOA C073 template in Appendix F applies to part 125 LODA holders.
- The sample MSpec MC073 template in Appendix G applies to part 91K.

b. Job Aid. The OpSpec/MSpec/LOA C073 Job Aid will be published on the applicable FS repository.

c. FAA Order 8900.1. Order 8900.1, Volume 3, Chapter 18, Section 5, Part C Operations Specifications—Airplane Terminal Instrument Procedures and Airport Authorizations and Limitations, has been revised to reflect the changes outlined in this notice.

6. Action. This is a nonmandatory template revision to OpSpec/MSpec/LOA C073. PIs should review this notice and the revised Order 8900.1 guidance along with their CHs/operators/program managers/part 125 LODA holders' issued OpSpecs/MSpecs/LOAs C073 and reissue, if appropriate. PIs will need to reissue A004 when reissuing C073 to reflect the updated authorization statement consistent with the language in the revised C073. PIs with CH/operators/program managers/part 125 LODA holders that are not issued C073 are encouraged to reissue A004 at their earliest convenience. Appendix H contains the C073 job aid for use in determining if the CH/operator/program manager/part 125 LODA holder has met all requirements prior to issuance of OpSpec/MSpec/LOA C073.

7. Disposition. We will incorporate the information in this notice into Order 8900.1 before this notice expires. Direct questions or comments concerning this notice to the Flight Operations Group (AFS-410) at 202-267-8838.

Wesley L. Mooty
Acting Deputy Executive Director, Flight Standards Service

Appendix A. Sample OpSpec C073, Vertical Navigation (VNAV) Instrument Approach Procedures (IAP) Using Minimum Descent Altitude (MDA) as a Decision Altitude (DA): 14 CFR Part 121

a. The certificate holder is authorized to use a minimum descent altitude (MDA) as a decision altitude (DA) when using vertical navigation (VNAV) as advisory information on a Nonprecision Approach (NPA). The certificate holder will use operations specification C073 in conjunction with Operations Specification C052, Straight-in Non-Precision, APV, and Category I Precision Approach and Landing Minima—All Airports. The certificate holder is authorized to conduct instrument approach operations using the following airplanes and Area Navigation (RNAV) systems approved for these VNAV operations as listed in Table 1 below.

Table 1 – Authorized Airplanes and Equipment

Airplane Type (M/M/S)	Area Navigation System (Model/Version)	Remarks

b. This operations specification provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA when used as a DA. The use of an MDA as a DA does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. The certificate holder must see and avoid obstacles between the MDA and the runway when 14 CFR Part 91, § 91.175 requirements are met and the approach is continued below the MDA for landing.

> **Note:** A vertical descent angle (VDA) is advisory. Flying the published VDA below the MDA does not guarantee obstacle clearance.

c. Authorized Approaches. The certificate holder may fly all 14 CFR Part 97 nonprecision straight-in instrument approach procedures (IAP) listed in their operations specification C052, Table 1, Authorized Instrument Approach Procedures, columns 1 and 2 using an MDA as a DA if the approach being flown meets the requirements of subparagraph (1) or (2) below:

(1) Serves a runway that has a published RNAV IAP ("RNAV (GPS)," "RNAV (RNP)," or "GPS" in the title) with a published lateral navigation (LNAV)/VNAV or Required Navigation Performance (RNP) DA, and:

(a) Is selected from an approved and current database.

(b) Has the exact published final approach course as the RNAV IAP.

(c) The MDA is equal to or higher than the LNAV/VNAV or RNP DA.

(d) Has a published VDA coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP. A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published lateral approach procedures with vertical guidance (LPV) and/or LNAV/VNAV DA.

(2) Serves a runway that has a published instrument landing system (ILS), Global Positioning System (GPS) landing system (GLS), or RNAV IAP with LPV minima, and:

(a) Is selected from an approved and current database.

(b) Has the exact published final approach course as the ILS, GLS, or RNAV IAP.

(c) The MDA is equal to or higher than the ILS, GLS, or LPV DA.

(d) Has a published VDA coincident with or higher than the electronic GS on the published ILS, GLS, or RNAV IAP.

(i) A published VDA is not required on an ILS/Localizer (LOC) approach when the ILS GS is out of service and the approach is flown using LOC-only procedures.

(ii) A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published LPV and/or LNAV/VNAV DA.

d. VNAV Path Angle Limits. The VNAV path angle must be in the range of 2.75 to 3.77 degrees for Category A, B, and C airplanes and 2.75 to 3.50 degrees for Category D airplanes.

e. Operational Restrictions.

(1) When operating into an airfield with a 14 CFR Part 139 Visual Glide Slope Indicator (VGSI), the following requirements must be met:

(a) The VDA or GS on the published final approach course must be coincident with or higher than the published VGSI descent angle.

(b) The published final approach course must be within plus or minus 4 degrees of the runway centerline (RCL).

Note: The certificate holder must refer to the FAA Chart Supplement to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

(2) The certificate holder may use baro-VNAV as advisory information to an MDA when the airfield temperature is outside of the RNAV (GPS) or RNAV (RNP) IAP temperature range limitation if the following requirements are met:

(a) Do not use the MDA as a DA.

(b) The MDA must be equal to or higher than the DA.

(c) The MDA and DA must have the same published final approach course.

(3) The VNAV path must cross at or above all stepdown fix altitudes. The stepdown fix crossing altitudes must be referenced on the barometric altimeter.

(4) The certificate holder may use a continuous descent final approach (CDFA) to an MDA not being used as a DA, but will begin the missed approach at an altitude above the MDA that will not allow the airplane to descend below the MDA.

f. Required Training. Flightcrews must be trained in accordance with the certificate holder's approved training program to include VNAV procedures and the IAPs listed in operations specification C052 before conducting operations authorized by this paragraph.

Appendix B. Sample OpSpec C073, Vertical Navigation (VNAV) Instrument Approach Procedures (IAP) Using Minimum Descent Altitude (MDA) as a Decision Altitude (DA): 14 CFR Part 125

a. The certificate holder is authorized to use a minimum descent altitude (MDA) as a decision altitude (DA) when using vertical navigation (VNAV) as advisory information on a Nonprecision Approach (NPA). The certificate holder will use operations specification C073 in conjunction with Operations Specification C052, Straight-in Non-Precision, APV, and Category I Precision Approach and Landing Minima—All Airports. The certificate holder is authorized to conduct instrument approach operations using the following airplanes and Area Navigation (RNAV) systems approved for these VNAV operations as listed in Table 1 below.

Table 1 – Authorized Airplanes and Equipment

Airplane Type (M/M/S)	Area Navigation System (Model/Version)	Remarks

b. This operations specification provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA when used as a DA. The use of an MDA as a DA does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. The certificate holder must see and avoid obstacles between the MDA and the runway when 14 CFR Part 91, § 91.175 requirements are met and the approach is continued below the MDA for landing.

> **Note:** A vertical descent angle (VDA) is advisory. Flying the published VDA below the MDA does not guarantee obstacle clearance.

c. Authorized Approaches. The certificate holder may fly all 14 CFR Part 97 nonprecision straight-in instrument approach procedures (IAP) listed in their operations specification C052, Table 1, Authorized Instrument Approach Procedures, columns 1 and 2 using an MDA as a DA if the approach being flown meets the requirements of subparagraph (1) or (2) below:

(1) Serves a runway that has a published RNAV IAP ("RNAV (GPS)," "RNAV (RNP)," or "GPS" in the title) with a published lateral navigation (LNAV)/VNAV or Required Navigation Performance (RNP) DA, and:

(a) Is selected from an approved and current database.

(b) Has the exact published final approach course as the RNAV IAP.

(c) The MDA is equal to or higher than the LNAV/VNAV or RNP DA.

(d) Has a published VDA coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP. A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published lateral approach procedures with vertical guidance (LPV) and/or LNAV/VNAV DA.

(2) Serves a runway that has a published instrument landing system (ILS), Global Positioning System (GPS) landing system (GLS), or RNAV IAP with LPV minima, and:

(a) Is selected from an approved and current database.

(b) Has the exact published final approach course as the ILS, GLS, or RNAV IAP.

(c) The MDA is equal to or higher than the ILS, GLS, or LPV DA.

(d) Has a published VDA coincident with or higher than the electronic GS on the published ILS, GLS, or RNAV IAP.

(i) A published VDA is not required on an ILS/Localizer (LOC) approach when the ILS GS is out of service and the approach is flown using LOC-only procedures.

(ii) A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published LPV and/or LNAV/VNAV DA.

d. VNAV Path Angle Limits. The VNAV path angle must be in the range of 2.75 to 3.77 degrees for Category A, B, and C airplanes and 2.75 to 3.50 degrees for Category D airplanes.

e. Operational Restrictions.

(1) When operating into an airfield with a 14 CFR Part 139 Visual Glide Slope Indicator (VGSI), the following requirements must be met:

(a) The VDA or GS on the published final approach course must be coincident with or higher than the published VGSI descent angle.

(b) The published final approach course must be within plus or minus 4 degrees of the runway centerline (RCL).

Note: The certificate holder must refer to the FAA Chart Supplement to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

(2) The certificate holder may use baro-VNAV as advisory information to an MDA when the airfield temperature is outside of the RNAV (GPS) or RNAV (RNP) IAP temperature range limitation if the following requirements are met:

(a) Do not use the MDA as a DA.

(b) The MDA must be equal to or higher than the DA.

(c) The MDA and DA must have the same published final approach course.

(3) The VNAV path must cross at or above all stepdown fix altitudes. The stepdown fix crossing altitudes must be referenced on the barometric altimeter.

(4) The certificate holder may use a continuous descent final approach (CDFA) to an MDA not being used as a DA, but will begin the missed approach at an altitude above the MDA that will not allow the airplane to descend below the MDA.

f. Required Training. Flightcrews must be trained in accordance with the certificate holder's approved training program to include VNAV procedures and the IAPs listed in operations specification C052 before conducting operations authorized by this paragraph.

Appendix C. Sample OpSpec C073, Vertical Navigation (VNAV) Instrument Approach Procedures (IAP) Using Minimum Descent Altitude (MDA) as a Decision Altitude (DA): 14 CFR Part 135

a. The certificate holder is authorized to use a minimum descent altitude (MDA) as a decision altitude (DA) when using vertical navigation (VNAV) as advisory information on a Nonprecision Approach (NPA). The certificate holder will use operations specification C073 in conjunction with Operations Specification C052, Straight-in Non-Precision, APV, and Category I Precision Approach and Landing Minima—All Airports. The certificate holder is authorized to conduct instrument approach operations using the following airplanes and Area Navigation (RNAV) systems approved for these VNAV operations as listed in Table 1 below.

Table 1 – Authorized Airplanes and Equipment

Airplane Type (M/M/S)	Area Navigation System (Model/Version)	Remarks

b. This operations specification provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA when used as a DA. The use of an MDA as a DA does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. The certificate holder must see and avoid obstacles between the MDA and the runway when 14 CFR Part 91, § 91.175 requirements are met and the approach is continued below the MDA for landing.

> **Note:** A vertical descent angle (VDA) is advisory. Flying the published VDA below the MDA does not guarantee obstacle clearance.

c. Authorized Approaches. The certificate holder may fly all 14 CFR Part 97 nonprecision straight-in instrument approach procedures (IAP) listed in their operations specification C052, Table 1, Authorized Instrument Approach Procedures, columns 1 and 2 using an MDA as a DA if the approach being flown meets the requirements of subparagraph (1) or (2) below:

(1) Serves a runway that has a published RNAV IAP ("RNAV (GPS)," "RNAV (RNP)," or "GPS" in the title) with a published lateral navigation (LNAV)/VNAV or Required Navigation Performance (RNP) DA, and:

(a) Is selected from an approved and current database.

(b) Has the exact published final approach course as the RNAV IAP.

(c) The MDA is equal to or higher than the LNAV/VNAV or RNP DA.

(d) Has a published VDA coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP. A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published lateral approach procedures with vertical guidance (LPV) and/or LNAV/VNAV DA.

(2) Serves a runway that has a published instrument landing system (ILS), Global Positioning System (GPS) landing system (GLS), or RNAV IAP with LPV minima, and:

(a) Is selected from an approved and current database.

(b) Has the exact published final approach course as the ILS, GLS, or RNAV IAP.

(c) The MDA is equal to or higher than the ILS, GLS, or LPV DA.

(d) Has a published VDA coincident with or higher than the electronic GS on the published ILS, GLS, or RNAV IAP.

(i) A published VDA is not required on an ILS/Localizer (LOC) approach when the ILS GS is out of service and the approach is flown using LOC-only procedures.

(ii) A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published LPV and/or LNAV/VNAV DA.

d. VNAV Path Angle Limits. The VNAV path angle must be in the range of 2.75 to 3.77 degrees for Category A, B, and C airplanes and 2.75 to 3.50 degrees for Category D airplanes.

e. Operational Restrictions.

(1) When operating into an airfield with a 14 CFR Part 139 Visual Glide Slope Indicator (VGSI), the following requirements must be met:

(a) The VDA or GS on the published final approach course must be coincident with or higher than the published VGSI descent angle.

(b) The published final approach course must be within plus or minus 4 degrees of the runway centerline (RCL).

Note: The certificate holder must refer to the FAA Chart Supplement to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

(2) The certificate holder may use baro-VNAV as advisory information to an MDA when the airfield temperature is outside of the RNAV (GPS) or RNAV (RNP) IAP temperature range limitation if the following requirements are met:

(a) Do not use the MDA as a DA.

(b) The MDA must be equal to or higher than the DA.

(c) The MDA and DA must have the same published final approach course.

(3) The VNAV path must cross at or above all stepdown fix altitudes. The stepdown fix crossing altitudes must be referenced on the barometric altimeter.

(4) The certificate holder may use a continuous descent final approach (CDFA) to an MDA not being used as a DA, but will begin the missed approach at an altitude above the MDA that will not allow the airplane to descend below the MDA.

f. Required Training. Flightcrews must be trained in accordance with the certificate holder's approved training program to include VNAV procedures and the IAPs listed in operations specification C052 before conducting operations authorized by this paragraph.

Appendix D. Sample OpSpec C073, Vertical Navigation (VNAV) Instrument Approach Procedures (IAP) Using Minimum Descent Altitude (MDA) as a Decision Altitude (DA): 14 CFR Part 121/135

a. The certificate holder is authorized to use a minimum descent altitude (MDA) as a decision altitude (DA) when using vertical navigation (VNAV) as advisory information on a Nonprecision Approach (NPA). The certificate holder will use operations specification C073 in conjunction with Operations Specification C052, Straight-in Non-Precision, APV, and Category I Precision Approach and Landing Minima—All Airports. The certificate holder is authorized to conduct instrument approach operations using the following airplanes and Area Navigation (RNAV) systems approved for these VNAV operations as listed in Table 1 below.

Table 1 – Authorized Airplanes and Equipment

Airplane Type (M/M/S)	Area Navigation System (Model/Version)	Remarks

b. This operations specification provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA when used as a DA. The use of an MDA as a DA does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. The certificate holder must see and avoid obstacles between the MDA and the runway when 14 CFR Part 91, § 91.175 requirements are met and the approach is continued below the MDA for landing.

> **Note:** A vertical descent angle (VDA) is advisory. Flying the published VDA below the MDA does not guarantee obstacle clearance.

c. Authorized Approaches. The certificate holder may fly all 14 CFR Part 97 nonprecision straight-in instrument approach procedures (IAP) listed in their operations specification C052, Table 1, Authorized Instrument Approach Procedures, columns 1 and 2 using an MDA as a DA if the approach being flown meets the requirements of subparagraph (1) or (2) below:

(1) Serves a runway that has a published RNAV IAP ("RNAV (GPS)," "RNAV (RNP)," or "GPS" in the title) with a published lateral navigation (LNAV)/VNAV or Required Navigation Performance (RNP) DA, and:

(a) Is selected from an approved and current database.

(b) Has the exact published final approach course as the RNAV IAP.

(c) The MDA is equal to or higher than the LNAV/VNAV or RNP DA.

(d) Has a published VDA coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP. A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published lateral approach procedures with vertical guidance (LPV) and/or LNAV/VNAV DA.

(2) Serves a runway that has a published instrument landing system (ILS), Global Positioning System (GPS) landing system (GLS), or RNAV IAP with LPV minima, and:

(a) Is selected from an approved and current database.

(b) Has the exact published final approach course as the ILS, GLS, or RNAV IAP.

(c) The MDA is equal to or higher than the ILS, GLS, or LPV DA.

(d) Has a published VDA coincident with or higher than the electronic GS on the published ILS, GLS, or RNAV IAP.

(i) A published VDA is not required on an ILS/Localizer (LOC) approach when the ILS GS is out of service and the approach is flown using LOC-only procedures.

(ii) A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published LPV and/or LNAV/VNAV DA.

d. VNAV Path Angle Limits. The VNAV path angle must be in the range of 2.75 to 3.77 degrees for Category A, B, and C airplanes and 2.75 to 3.50 degrees for Category D airplanes.

e. Operational Restrictions.

(1) When operating into an airfield with a 14 CFR Part 139 Visual Glide Slope Indicator (VGSI), the following requirements must be met:

(a) The VDA or GS on the published final approach course must be coincident with or higher than the published VGSI descent angle.

(b) The published final approach course must be within plus or minus 4 degrees of the runway centerline (RCL).

Note: The certificate holder must refer to the FAA Chart Supplement to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

(2) The certificate holder may use baro-VNAV as advisory information to an MDA when the airfield temperature is outside of the RNAV (GPS) or RNAV (RNP) IAP temperature range limitation if the following requirements are met:

(a) Do not use the MDA as a DA.

(b) The MDA must be equal to or higher than the DA.

(c) The MDA and DA must have the same published final approach course.

(3) The VNAV path must cross at or above all stepdown fix altitudes. The stepdown fix crossing altitudes must be referenced on the barometric altimeter.

(4) The certificate holder may use a continuous descent final approach (CDFA) to an MDA not being used as a DA, but will begin the missed approach at an altitude above the MDA that will not allow the airplane to descend below the MDA.

f. Required Training. Flightcrews must be trained in accordance with the certificate holder's approved training program to include VNAV procedures and the IAPs listed in operations specification C052 before conducting operations authorized by this paragraph.

Appendix E. Sample LOA C073, Vertical Navigation (VNAV) Instrument Approach Procedures (IAP) Using Minimum Descent Altitude (MDA) as a Decision Altitude (DA): 14 CFR Part 91

1. The operator is authorized to conduct operations using a minimum descent altitude (MDA) as a decision altitude (DA) when using vertical navigation (VNAV) as advisory information on a Nonprecision Approach (NPA). The operator is authorized to conduct instrument approach operations using the following airplanes and Area Navigation (RNAV) systems approved for these VNAV operations as listed in Table 1 below.

Table 1 – Authorized Airplanes and Equipment

Airplane Type (M/M/S)	Area Navigation System (Model/Version)	Remarks

2. This Letter of Authorization (LOA) provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA when used as a DA. The use of an MDA as a DA does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. The operator must see and avoid obstacles between the MDA and the runway when 14 CFR Part 91, § 91.175 requirements are met and the approach is continued below the MDA for landing.

> **Note:** A vertical descent angle (VDA) is advisory. Flying the published VDA below the MDA does not guarantee obstacle clearance.

3. Authorized Approaches. The operator may use an MDA as a DA on all 14 CFR Part 97 nonprecision straight-in instrument approach procedures (IAP) the operator is approved to fly if the approach being flown meets the requirements of subparagraph a or b below:

a. Serves a runway that has a published RNAV IAP ("RNAV (GPS)," "RNAV (RNP)," or "GPS" in the title) with a published lateral navigation (LNAV)/VNAV or Required Navigation Performance (RNP) DA, and:

(1) Is selected from an approved and current database.

(2) Has the exact published final approach course as the RNAV IAP.

(3) The MDA is equal to or higher than the LNAV/VNAV or RNP DA.

(4) Has a published VDA coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP. A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published lateral approach procedures with vertical guidance (LPV) and/or LNAV/VNAV DA.

b. Serves a runway that has a published instrument landing system (ILS), Global Positioning System (GPS) landing system (GLS), or RNAV IAP with LPV minima, and:

(1) Is selected from an approved and current database.

(2) Has the exact published final approach course as the ILS, GLS, or RNAV IAP.

(3) The MDA is equal to or higher than the ILS, GLS, or LPV DA.

(4) Has a published VDA coincident with or higher than the electronic GS on the published ILS, GLS, or RNAV IAP.

(a) A published VDA is not required on an ILS/Localizer (LOC) approach when the ILS GS is out of service and the approach is flown using LOC-only procedures.

(b) A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published LPV and/or LNAV/VNAV DA.

4. VNAV Path Angle Limits. The VNAV path angle must be in the range of 2.75 to 3.77 degrees for Category A, B, and C airplanes and 2.75 to 3.50 degrees for Category D airplanes.

5. Operational Restrictions.

a. When operating into an airfield with a 14 CFR Part 139 Visual Glide Slope Indicator (VGSI), the following requirements must be met:

(1) The VDA or GS on the published final approach course must be coincident with or higher than the published VGSI descent angle.

(2) The published final approach course must be within plus or minus 4 degrees of the runway centerline (RCL).

Note: The operator must refer to the FAA Chart Supplement to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

b. The operator may use baro-VNAV as advisory information to an MDA when the airfield temperature is outside of the RNAV (GPS) or RNAV (RNP) IAP temperature range limitation if the following requirements are met:

(1) Do not use the MDA as a DA.

(2) The MDA must be equal to or higher than the DA.

(3) The MDA and DA must have the same published final approach course.

c. The VNAV path must cross at or above all stepdown fix altitudes. The stepdown fix crossing altitudes must be referenced on the barometric altimeter.

d. The operator may use a continuous descent final approach (CDFA) to an MDA not being used as a DA, but will begin the missed approach at an altitude above the MDA that will not allow the airplane to descend below the MDA.

6. Training. The operator must be proficient in VNAV procedures and the IAPs being flown before conducting any operations authorized by this LOA.

7. Responsible Person. This LOA is considered invalid until signed by the Responsible Person listed in Table 2, Responsible Person. The Responsible Person should have ongoing knowledge of the operations of the aircraft and may be the individual who acts as operator, or if the operator is a legal entity, the Responsible Person may be an officer, employee, or person duly designated to sign on behalf of the operator. By signing this document, the Responsible Person assumes responsibility for ensuring the operator complies with all applicable regulations, requirements, limitations, and provisions of this LOA.

a. If the Responsible Person signing this LOA relinquishes responsibility, this LOA becomes invalid.

b. The name, email address, and/or telephone number of the Responsible Person signing this LOA are listed in Table 2 below.

Table 2 – Responsible Person

Name	Email Address	Telephone Number

Appendix F. Sample LOA C073, Vertical Navigation (VNAV) Instrument Approach Procedures (IAP) Using Minimum Descent Altitude (MDA) as a Decision Altitude (DA): 14 CFR Part 125 (A125 LODA Holder)

1. The operator/company, authorized to conduct operations in accordance with the Letter of Deviation Authority (LODA) A125, is authorized to conduct operations using a minimum descent altitude (MDA) as a decision altitude (DA) when using vertical navigation (VNAV) as advisory information on a Nonprecision Approach (NPA). The operator/company will use Letter of Authorization (LOA) C073 in conjunction with LOA C052, Straight-in Non-Precision, APV, and Category I Precision Approach and Landing Minima—All Airports. The operator/company must be authorized LOA C052 in order to be authorized LOA C073. The operator/company is authorized to conduct instrument approach operations using the following airplanes and Area Navigation (RNAV) systems approved for these VNAV operations as listed in Table 1 below.

Table 1 – Authorized Airplanes and Equipment

Airplane Type (M/M/S)	Area Navigation System (Model/Version)	Remarks

2. This LOA provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA when used as a DA. The use of an MDA as a DA does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. The operator/company must see and avoid obstacles between the MDA and the runway when 14 CFR Part 91, § 91.175 requirements are met and the approach is continued below the MDA for landing.

> **Note:** A vertical descent angle (VDA) is advisory. Flying the published VDA below the MDA does not guarantee obstacle clearance.

3. Authorized Approaches. The operator/company may fly all 14 CFR Part 97 nonprecision straight-in instrument approach procedures (IAP) listed in their LOA C052, Table 1, Authorized Instrument Approach Procedures, columns 1 and 2 using an MDA as a DA if the approach being flown meets the requirements of subparagraph a or b below:

a. Serves a runway that has a published RNAV IAP ("RNAV (GPS)," "RNAV (RNP)," or "GPS" in the title) with a published lateral navigation (LNAV)/VNAV or Required Navigation Performance (RNP) DA, and:

(1) Is selected from an approved and current database.

(2) Has the exact published final approach course as the RNAV IAP.

(3) The MDA is equal to or higher than the LNAV/VNAV or RNP DA.

(4) Has a published VDA coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP. A published VDA is not required when using the

LNAV minima line on an RNAV IAP that also has a published lateral approach procedures with vertical guidance (LPV) and/or LNAV/VNAV DA.

b. Serves a runway that has a published instrument landing system (ILS), Global Positioning System (GPS) landing system (GLS), or RNAV IAP with LPV minima, and:

(1) Is selected from an approved and current database.

(2) Has the exact published final approach course as the ILS, GLS, or RNAV IAP.

(3) The MDA is equal to or higher than the ILS, GLS, or LPV DA.

(4) Has a published VDA coincident with or higher than the electronic GS on the published ILS, GLS, or RNAV IAP.

(a) A published VDA is not required on an ILS/Localizer (LOC) approach when the ILS GS is out of service and the approach is flown using LOC-only procedures.

(b) A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published LPV and/or LNAV/VNAV DA.

4. VNAV Path Angle Limits. The VNAV path angle must be in the range of 2.75 to 3.77 degrees for Category A, B, and C airplanes and 2.75 to 3.50 degrees for Category D airplanes.

5. Operational Restrictions.

a. When operating into an airfield with a 14 CFR Part 139 Visual Glide Slope Indicator (VGSI), the following requirements must be met:

(1) The VDA or GS on the published final approach course must be coincident with or higher than the published VGSI descent angle.

(2) The published final approach course must be within plus or minus 4 degrees of the runway centerline (RCL).

Note: The operator/company must refer to the FAA Chart Supplement to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

b. The operator/company may use baro-VNAV as advisory information to an MDA when the airfield temperature is outside of the RNAV (GPS) or RNAV (RNP) IAP temperature range limitation if the following requirements are met:

(a) Do not use the MDA as a DA.

(b) The MDA must be equal to or higher than the DA.

(c) The MDA and DA must have the same published final approach course.

c. The VNAV path must cross at or above all stepdown fix altitudes. The stepdown fix crossing altitudes must be referenced on the barometric altimeter.

d. The operator/company may use a continuous descent final approach (CDFA) to an MDA not being used as a DA, but will begin the missed approach at an altitude above the MDA that will not allow the airplane to descend below the MDA.

6. Training. The operator/company must be proficient in VNAV procedures and the IAPs listed in LOA C052 before conducting any operations authorized by this LOA.

Appendix G. Sample MSpec MC073, Vertical Navigation (VNAV) Instrument Approach Procedures (IAP) Using Minimum Descent Altitude (MDA) as a Decision Altitude (DA): 14 CFR Part 91K

a. The program manager is authorized to use a minimum descent altitude (MDA) as a decision altitude (DA) when using vertical navigation (VNAV) as advisory information on a Nonprecision Approach (NPA). The program manager will use management specification MC073 in conjunction with Management Specification MC052, Straight-in Non-Precision, APV, and Category I Precision Approach and Landing Minima—All Airports. The program manager is authorized to conduct instrument approach operations using the following airplanes and Area Navigation (RNAV) systems approved for these VNAV operations as listed in Table 1 below.

Table 1 – Authorized Airplanes and Equipment

Airplane Type (M/M/S)	Area Navigation System (Model/Version)	Remarks

b. This management specification provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA when used as a DA. The use of an MDA as a DA does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. The program manager must see and avoid obstacles between the MDA and the runway when 14 CFR Part 91, § 91.175 requirements are met and the approach is continued below the MDA for landing.

> **Note:** A vertical descent angle (VDA) is advisory. Flying the published VDA below the MDA does not guarantee obstacle clearance.

c. Authorized Approaches. The program manager may fly all 14 CFR Part 97 nonprecision straight-in instrument approach procedures (IAP) listed in their management specification MC052, Table 1, Authorized Instrument Approach Procedures, columns 1 and 2 using an MDA as a DA if the approach being flown meets the requirements of subparagraph (1) or (2) below:

(1) Serves a runway that has a published RNAV IAP ("RNAV (GPS)," "RNAV (RNP)," or "GPS" in the title) with a published lateral navigation (LNAV)/VNAV or Required Navigation Performance (RNP) DA, and:

(a) Is selected from an approved and current database.

(b) Has the exact published final approach course as the RNAV IAP.

(c) The MDA is equal to or higher than the LNAV/VNAV or RNP DA.

(d) Has a published VDA coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP. A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published lateral approach procedures with vertical guidance (LPV) and/or LNAV/VNAV DA.

(2) Serves a runway that has a published instrument landing system (ILS), Global Positioning System (GPS) landing system (GLS), or RNAV IAP with LPV minima, and:

(a) Is selected from an approved and current database.

(b) Has the exact published final approach course as the ILS, GLS, or RNAV IAP.

(c) The MDA is equal to or higher than the ILS, GLS, or LPV DA.

(d) Has a published VDA coincident with or higher than the electronic GS on the published ILS, GLS, or RNAV IAP.

(i) A published VDA is not required on an ILS/Localizer (LOC) approach when the ILS GS is out of service and the approach is flown using LOC-only procedures.

(ii) A published VDA is not required when using the LNAV minima line on an RNAV IAP that also has a published LPV and/or LNAV/VNAV DA.

d. VNAV Path Angle Limits. The VNAV path angle must be in the range of 2.75 to 3.77 degrees for Category A, B, and C airplanes and 2.75 to 3.50 degrees for Category D airplanes.

e. Operational Restrictions.

(1) When operating into an airfield with a 14 CFR Part 139 Visual Glide Slope Indicator (VGSI), the following requirements must be met:

(a) The VDA or GS on the published final approach course must be coincident with or higher than the published VGSI descent angle.

(b) The published final approach course must be within plus or minus 4 degrees of the runway centerline (RCL).

Note: The program manager must refer to the FAA Chart Supplement to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

(2) The program manager may use baro-VNAV as advisory information to an MDA when the airfield temperature is outside of the RNAV (GPS) or RNAV (RNP) IAP temperature range limitation if the following requirements are met:

(a) Do not use the MDA as a DA.

(b) The MDA must be equal to or higher than the DA.

(c) The MDA and DA must have the same published final approach course.

(3) The VNAV path must cross at or above all stepdown fix altitudes. The stepdown fix crossing altitudes must be referenced on the barometric altimeter.

(4) The program manager may use a continuous descent final approach (CDFA) to an MDA not being used as a DA, but will begin the missed approach at an altitude above the MDA that will not allow the airplane to descend below the MDA.

f. Required Training. Flightcrews must be trained in accordance with the program manager's approved training program to include VNAV procedures and the IAPs listed in management specification MC052 before conducting operations authorized by this paragraph.

Appendix H. OpSpec/MSpec/LOA C073 Job Aid

OpSpec/MSpec/LOA C073 will be used in conjunction with OpSpec/MSpec/LOA C052, Straight-In Non-Precision, APV and Category I Precision Approach and Landing Minima—All Airports. OpSpec/MSpec/LOA C073 is applicable to all certificate holders/operators/program managers/part 125 LODA holders conducting airplane operations under 14 CFR parts 91, 91 subpart K (part 91K), 121, 125 (including part 125 Letter of Deviation Authority (LODA) holders), and 135. C073 specifies the airplane type and Area Navigation (RNAV) system authorized to use minimum descent altitude (MDA) as a decision altitude (DA) when using vertical navigation (VNAV) as advisory information. In order for C073 to be issued, the following questions should be answered "Yes."

	Yes	**No**
1. Is the certificate holder/operator/program manager/part 125 LODA holder authorized C052 (N/A for part 91)?		
2. Is the part 97 nonprecision instrument approach procedure (IAP) the certificate holder/operator/program manager/part 125 LODA holder is going to accomplish listed in C052?		
3. Is the navigation equipment certified for VNAV operations in the terminal area and capable of generating a flight path angle on a conventional IAP?		

HELPFUL HINT: Many Airplane Flight Manuals (AFM) will state that nonprecision procedures can be flown using the installed RNAV system. If able, provide this statement in the submitted approval package.

a. Is the equipment certified in accordance with FAA Advisory Circular (AC) 20-129, Airworthiness Approval of Vertical Navigation (VNAV) Systems for Use in the U.S. National Airspace (NAS) and Alaska (now canceled), or AC 20-138, Airworthiness Approval of Positioning and Navigation Systems (revision A and later), through a type certificate (TC), amended TC, Supplemental Type Certificate (STC), amended STC, or other FAA-equivalent approval? Must be established by one of the following:

- A statement in the FAA-approved AFM showing the aircraft is equipped with a VNAV system certified in accordance with AC 20-129 (now canceled) or AC 20-138 (revision A and later).
- A statement in the FAA-approved AFM or Flight Manual Supplement referencing the approval for Required Navigation Performance (RNP).
- Aircraft with an AFM aircraft authorization for RNP 0.3 or less.
- An Aircraft Evaluation Division (AED) verification that the applicant's aircraft and flight management system (FMS) meets AC 20-129 (now canceled) or AC 20-138 (revision A and later), or equivalent, criteria for VNAV operations. This may replace the requirement for a suitable FAA-approved AFM statement or an applicable Flight Standardization Board Report (FSBR).

b. Can the certificate holder/operator/program manager/part 125 LODA holder provide documentation proving that airworthiness maintenance practices and procedures are being accomplished? (Does not require actual aircraft inspection.)

c. Is the certificate holder/operator/program manager/part 125 LODA holder reviewing and revising the minimum equipment list (MEL), as necessary, to address any pertinent VNAV or FMS operating requirements?

	Yes	No
4. Does the certificate holder/operator/program manager/part 125 LODA holder have an approved training program or proficiency with the navigation system and instrument procedure being used before conducting any operations?		

a. Does the training include using required systems and VNAV to fly an approach down to an MDA as a DA?

NOTE: C073 may be authorized without a pilot flying an actual approach to an MDA as a DA. Performing the missed approach maneuver using an MDA as a DA should be the same as accomplishing a missed approach using VNAV to a DA. Pilots should accomplish the maneuver when training permits. Pilots should be proficient using their VNAV system to fly authorized approaches.

	Yes	No
5. Was the certificate holder/operator/program manager/part 125 LODA holder authorized aircraft type and RNAV system added to C073, Table 1?		
6. Has the authorization to use C073 been properly issued?		

a. Was OpSpec C073 issued to a part 121, 125, or 135 certificate holder?

b. Was an LOA issued to a part 91 operator or 125 LODA holder, operating under a deviation from the certificate and OpSpec requirement for part 125?

c. Was an MSpec issued to a part 91K program manager?