NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8900.403

National Policy

Effective Date:
2/10/17

Cancellation Date:
2/10/18

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

1. Purpose of This Notice. This notice provides changes 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, 125 (including part 125 Letter of Deviation Authority (LODA) holders), and 135.

2. Audience. The primary audience for this notice is certificate-holding district offices (CHDO), Flight Standards District Offices (FSDO), certificate management offices (CMO), aviation safety inspectors (ASI), International Field Offices (IFO), and principal inspectors (PI). The secondary audience includes Flight Standards Service (AFS) divisions and branches in the regions and in headquarters (HQ).

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. Inspectors can access this notice through the Flight Standards Information Management System (FSIMS) at http://fsims.avs.faa.gov. Operators can find this notice on the Federal Aviation Administration's (FAA) website at http://fsims.faa.gov. This notice is available to the public at http://www.faa.gov/regulations_policies/orders_notices.

4. Background. This change ensures all certificate holders/operators/program managers with certified aircraft may be authorized to use OpSpec/MSpec/LOA C073. The revision to OpSpec/MSpec/LOA C073 includes:

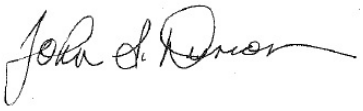
- Updated verbiage to ensure use by parts 91, 91K, 121, 125, and 135 with certified aircraft; and
- Deletion of verbiage to ensure use by parts 91, 91K, 121, 125, and 135 with certified aircraft.

5. Guidance. The Flight Technologies and Procedures Division (AFS-400) developed this notice. 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 MSpec MC073 template in Appendix E applies to part 91K.
- The sample LOA C073 template in Appendix F applies to part 91.
- The sample LOA C073 template in Appendix G applies to part 125 LODA holders.

6. Action. PIs should review their certificate holder/operator/program manager's OpSpecs/MSpecs/LOAs and reissue OpSpec/LOA C073 or MSpec MC073, if appropriate. This is a nonmandatory template change.

7. Disposition. We will incorporate the information in this notice into FAA Order 8900.1 before this notice expires. Direct questions concerning the information in this notice to the Performance-Based Flight Systems Branch (AFS-470) at 202-267-4623.



John S. Duncan
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)/Decision Height (DH): 14 CFR Part 121

a. The certificate holder is authorized to use minimum descent altitude (MDA) as a decision altitude (DA)/DH with vertical navigation (VNAV) on a Nonprecision Approach (NPA). The certificate holder will use operations specification C073 in conjunction with Operations Specification C052, Straight-In Nonprecision, 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 RNAV systems certified 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

> **NOTE:** New software versions do not have to be updated in the table if inspectors confirm an advisory vertical guidance capability remains after the software update. The confirmation should be confirmed by the updated Service Bulletin (SB), a manufacturer/Original Equipment Manufacturer (OEM) statement, or any other FAA-approved method.

b. Public Vertically Guided IAP Assessment. Obstacle clearance surface (OCS) assessments protect the instrument procedure, including the missed approach. Glidepath Qualification Surface (GQS) assessments protect the landing area and are accomplished on 14 CFR part 97 IAPs with a published DA/DH. These approaches conform to the U.S. standard for Terminal Instrument Procedures (TERPS) and include the ILS, Ground Based Augmentation System (GBAS) Landing System (GLS), RNAV RNP, RNAV GPS IAPs with a localizer performance with vertical guidance (LPV) DA, and/or lateral navigation (LNAV)/VNAV DA.

> **NOTE:** C073 provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA used as a DA/DH. The use of an MDA as a DA/DH does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. Operators 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.

c. Authorized Approaches. The certificate holder may fly all part 97 nonprecision straight-in IAPs listed as authorized in operations specification C052, Table 1, columns 1 and 2, using an MDA as a DA/DH if the approach meets one of the following requirements and all subcomponents.

(1) Serves a runway that has a published RNAV IAP (“RNAV (GPS),” “RNAV (RNP),” or “GPS” in the title) with a published LNAV/VNAV or 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) Has a published Vertical Descent Angle (VDA) coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP.

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

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

(2) Serves a runway that has a published ILS, GLS, or RNP 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 RNP IAP.

(c) Has a published VDA coincident with or higher than the electronic GS on the published ILS, GLS, or RNP 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 LNAV minima on an RNAV approach that also has a published LPV or LNAV/VNAV DA.

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

(3) Serves a runway to an airport operating under 14 CFR part 139 with a Visual Glide Slope Indicator (VGSI).

(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 is within plus or minus 4 degrees of the runway centerline (RCL) course.

NOTE: Operators should refer to the FAA Chart Supplement (formerly the Airport/Facility Directory) to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

d. VNAV Path Angle. The VNAV path angle must be greater than or equal to 2.75 and equal to or less than 3.77 degrees for Category A, B, and C airplanes; and greater than or equal to 2.75 and equal to or less than 3.50 degrees for Category D airplanes.

e. Operational Restriction. The certificate holder will not use an MDA as a DA/DH if the requirements specified in this operations specification are not met. The certificate holder may use a continuous descent final approach (CDFA), 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 instrument procedures listed in C052.

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

a. The certificate holder is authorized to use minimum descent altitude (MDA) as a decision altitude (DA)/DH with vertical navigation (VNAV) on a Nonprecision Approach (NPA). The certificate holder will use operations specification C073 in conjunction with Operations Specification C052, Straight-In Nonprecision, 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 RNAV systems certified 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

> **NOTE:** New software versions do not have to be updated in the table if inspectors confirm an advisory vertical guidance capability remains after the software update. The confirmation should be confirmed by the updated Service Bulletin (SB), a manufacturer/Original Equipment Manufacturer (OEM) statement, or any other FAA-approved method.

b. Public Vertically Guided IAP Assessment. Obstacle clearance surface (OCS) assessments protect the instrument procedure, including the missed approach. Glidepath Qualification Surface (GQS) assessments protect the landing area and are accomplished on 14 CFR part 97 IAPs with a published DA/DH. These approaches conform to the U.S. standard for Terminal Instrument Procedures (TERPS) and include ILS, Ground Based Augmentation System (GBAS) Landing System (GLS), RNAV RNP, RNAV GPS IAPs with a localizer performance with vertical guidance (LPV) DA, and/or lateral navigation (LNAV)/VNAV DA.

> **NOTE:** C073 provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA used as a DA/DH. The use of an MDA as a DA/DH does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. Operators 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.

c. Authorized Approaches. The certificate holder may fly all part 97 nonprecision straight-in IAPs listed as authorized in operations specification C052, Table 1, columns 1 and 2, using an MDA as a DA/DH if the approach being flown meets one of the following requirements and all subcomponents.

(1) Serves a runway that has a published RNAV IAP (“RNAV (GPS),” “RNAV (RNP),” or “GPS” in the title) with a published LNAV/VNAV or 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) Has a published Vertical Descent Angle (VDA) coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP.

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

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

(2) Serves a runway that has a published ILS, GLS, or RNP 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, GFLS, or RNP IAP.

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

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

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

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

(3) Serves a runway to an airport operating under 14 CFR part 139 with a Visual Glide Slope Indicator (VGSI).

(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 is within plus or minus 4 degrees of the runway centerline (RCL) course.

NOTE: Operators should refer to the FAA Chart Supplement (formerly the Airport/Facility Directory) to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

d. VNAV Path Angle. The VNAV path angle must be greater than or equal to 2.75 and equal to or less than 3.77 degrees for Category A, B, and C airplanes; and greater than or equal to 2.75 and equal to or less than 3.50 degrees for Category D airplanes.

e. Operational Restriction. The certificate holder will not use an MDA as a DA/DH if the requirements specified in this operations specification are not met. The certificate holder may use a continuous descent final approach (CDFA), but will begin the missed approach at an altitude above the MDA that will not allow the airplane to descend below the MDA.

f. Training. The operator must be proficient in VNAV procedures and the instrument procedure being flown before conducting any operations authorized by this operations specification.

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

a. The certificate holder is authorized to use minimum descent altitude (MDA) as a decision altitude (DA)/DH with vertical navigation (VNAV) on a Nonprecision Approach (NPA). The certificate holder will use operations specification C073 in conjunction with Operations Specification C052, Straight-In Nonprecision, 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 RNAV systems certified 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

> **NOTE:** New software versions do not have to be updated in the table if inspectors confirm an advisory vertical guidance capability remains after the software update. The confirmation should be confirmed by the updated Service Bulletin (SB), a manufacturer/Original Equipment Manufacturer (OEM) statement, or any other FAA-approved method.

b. Public Vertically Guided IAP Assessment. Obstacle clearance surface (OCS) assessments protect the instrument procedure, including the missed approach. Glidepath Qualification Surface (GQS) assessments protect the landing area and are accomplished on 14 CFR part 97 IAPs with a published DA/DH. These approaches conform to the U.S. standard for Terminal Instrument Procedures (TERPS) and include ILS, Ground Based Augmentation System (GBAS) Landing System (GLS), RNAV RNP, RNAV GPS IAPs with a localizer performance with vertical guidance (LPV) DA, and/or lateral navigation (LNAV)/VNAV DA.

> **NOTE:** C073 provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA used as a DA/DH. The use of an MDA as a DA/DH does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. Operators 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.

c. Authorized Approaches. The certificate holder may fly all part 97 nonprecision straight-in IAPs listed as authorized in operations specification C052, Table 1, columns 1 and 2, using an MDA as a DA/DH if the approach being flown meets one of the following requirements and all subcomponents.

(1) Serves a runway that has a published RNAV IAP (“RNAV (GPS),” “RNAV (RNP),” or “GPS” in the title) with a published LNAV/VNAV or 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) Has a published Vertical Descent Angle (VDA) coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP.

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

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

(2) Serves a runway that has a published ILS, GLS, or RNP 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 RNP IAP.

(c) Has a published VDA coincident with or higher than the electronic GS on the published ILS, GLS, or RNP 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 LNAV minima on an RNAV approach that also has a published LPV or LNAV/VNAV DA.

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

(3) Serves a runway to an airport operating under 14 CFR part 139 with a Visual Glide Slope Indicator (VGSI).

(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 is within plus or minus 4 degrees of the runway centerline (RCL) course.

NOTE: Operators should refer to the FAA Chart Supplement (formerly the Airport/Facility Directory) to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

d. VNAV Path Angle. The VNAV path angle must be greater than or equal to 2.75 and equal to or less than 3.77 degrees for Category A, B, and C airplanes; and greater than or equal to 2.75 and equal to or less than 3.50 degrees for Category D airplanes.

e. Operational Restriction. The certificate holder will not use an MDA as a DA/DH if the requirements specified in this operations specification are not met. The certificate holder may use a continuous descent final approach (CDFA), 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 instrument procedures listed in C052.

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

a. The certificate holder is authorized to use minimum descent altitude (MDA) as a decision altitude (DA)/DH with vertical navigation (VNAV) on a Nonprecision Approach (NPA). The certificate holder will use operations specification C073 in conjunction with Operations Specification C052, Straight-In Nonprecision, 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 RNAV systems certified 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

> **NOTE:** New software versions do not have to be updated in the table if inspectors confirm an advisory vertical guidance capability remains after the software update. The confirmation should be confirmed by the updated Service Bulletin (SB), a manufacturer/Original Equipment Manufacturer (OEM) statement, or any other FAA-approved method.

b. Public Vertically Guided IAP Assessment. Obstacle clearance surface (OCS) assessments protect the instrument procedure, including the missed approach. Glidepath Qualification Surface (GQS) assessments protect the landing area and are accomplished on 14 CFR part 97 IAPs with a published DA/DH. These approaches conform to the U.S. standard for Terminal Instrument Procedures (TERPS) and include ILS, Ground Based Augmentation System (GBAS) Landing System (GLS), RNAV RNP, RNAV GPS IAPs with a localizer performance with vertical guidance (LPV) DA, and/or lateral navigation (LNAV)/VNAV DA.

> **NOTE:** C073 provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA used as a DA/DH. The use of an MDA as a DA/DH does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. Operators 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.

c. Authorized Approaches. The certificate holder may fly all part 97 nonprecision straight-in IAPs listed as authorized in operations specification C052, Table 1, columns 1 and 2, using an MDA as a DA/DH if the approach being flown meets one of the following requirements and all subcomponents.

(1) Serves a runway that has a published RNAV IAP (“RNAV (GPS),” “RNAV (RNP),” or “GPS” in the title) with a published LNAV/VNAV or 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) Has a published Vertical Descent Angle (VDA) coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP.

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

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

(2) Serves a runway that has a published ILS, GLS, or RNP 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 RNP IAP.

(c) Has a published VDA coincident with or higher than the electronic GS on the published ILS, GLS, or RNP 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 LNAV minima on an RNAV approach that also has a published LPV or LNAV/VNAV DA.

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

(3) Serves a runway to an airport operating under 14 CFR part 139 with a Visual Glide Slope Indicator (VGSI).

(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 is within plus or minus 4 degrees of the runway centerline (RCL) course.

NOTE: Operators should refer to the FAA Chart Supplement (formerly the Airport/Facility Directory) to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

d. VNAV Path Angle. The VNAV path angle must be greater than or equal to 2.75 and equal to or less than 3.77 degrees for Category A, B, and C airplanes; and greater than or equal to 2.75 and equal to or less than 3.50 degrees for Category D airplanes.

e. Operational Restriction. The certificate holder will not use an MDA as a DA/DH if the requirements specified in this operations specification are not met. The certificate holder may use a continuous descent final approach (CDFA), 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 instrument procedures listed in C052.

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

a. The program manager is authorized to use minimum descent altitude (MDA) as a decision altitude (DA)/DH with vertical navigation (VNAV) on a Nonprecision Approach (NPA). The program manager will use management specification MC073 in conjunction with management specification MC052, Straight-In Nonprecision, 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 RNAV systems certified 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

> **NOTE:** New software versions do not have to be updated in the table if inspectors confirm an advisory vertical guidance capability remains after the software update. The confirmation should be confirmed by the updated Service Bulletin (SB), a manufacturer/Original Equipment Manufacturer (OEM) statement, or any other FAA-approved method.

b. Public Vertically Guided IAP Assessment. Obstacle clearance surface (OCS) assessments protect the instrument procedure, including the missed approach. Glidepath Qualification Surface (GQS) assessments protect the landing area and are accomplished on 14 CFR part 97 IAPs with a published DA/DH. These approaches conform to the U.S. standard for Terminal Instrument Procedures (TERPS) and include ILS, Ground Based Augmentation System (GBAS) Landing System (GLS), RNAV RNP, RNAV GPS IAPs with a localizer performance with vertical guidance (LPV) DA, and/or lateral navigation (LNAV)/VNAV DA.

> **NOTE:** C073 provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA used as a DA/DH. The use of an MDA as a DA/DH does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. Operators 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.

c. Authorized Approaches. The program manager may fly all part 97 nonprecision straight-in IAPs listed as authorized in management specification MC052, Table 1, columns 1 and 2, using an MDA as a DA/DH if the approach being flown meets one of the following requirements and all subcomponents.

(1) Serves a runway that has a published RNAV IAP (“RNAV (GPS),” “RNAV (RNP),” or “GPS” in the title) with a published LNAV/VNAV or 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) Has a published Vertical Descent Angle (VDA) coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP.

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

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

(2) Serves a runway that has a published ILS, 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) 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 LOC-only.

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

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

(3) Serves a runway to an airport operating under 14 CFR part 139 with a Visual Glide Slope Indicator (VGSI).

(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 is within plus or minus 4 degrees of the runway centerline (RCL) course.

NOTE: Operators should refer to the FAA Chart Supplement (formerly the Airport/Facility Directory) to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

d. VNAV Path Angle. The VNAV path angle must be greater than or equal to 2.75 and equal to or less than 3.77 degrees for Category A, B, and C airplanes; and greater than or equal to 2.75 and equal to or less than 3.50 degrees for Category D airplanes.

e. Operational Restriction. The program manager will not use an MDA as a DA/DH if the requirements specified in this management specification are not met. The program manager may use a continuous descent final approach (CDFA), 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 instrument procedures listed in C052.

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

1. The operator is authorized to conduct operations using minimum descent altitude (MDA) as a decision altitude (DA)/DH with vertical navigation (VNAV) on Nonprecision Approaches (NPA). The operator is authorized to conduct instrument approach operations using the following airplanes and RNAV systems certified 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

NOTE: New software versions do not have to be updated in the table if inspectors confirm an advisory vertical guidance capability remains after the software update. The confirmation should be confirmed by the updated Service Bulletin (SB), a manufacturer/Original Equipment Manufacturer (OEM) statement, or any other FAA-approved method.

2. Public Vertically Guided IAP Assessment. Obstacle clearance surface (OCS) assessments protect the instrument procedure, including the missed approach. Glidepath Qualification Surface (GQS) assessments protect the landing area and are accomplished on 14 CFR part 97 IAPs with a published DA/DH. These approaches conform to the U.S. standard for Terminal Instrument Procedures (TERPS) and include ILS, Ground Based Augmentation System (GBAS) Landing System (GLS), RNAV RNP, RNAV GPS IAPs with a localizer performance with vertical guidance (LPV) DA, and/or lateral navigation (LNAV)/VNAV DA.

NOTE: C073 provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA used as a DA/DH. The use of an MDA as a DA/DH does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. Operators 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.

3. Authorized Approaches. The operator may fly all part 97 nonprecision straight-in IAPs that the operator is approved for using an MDA as a DA/DH, if the approach being flown meets one of the following requirements and all subcomponents.

a. Serves a runway that has a published RNAV IAP (“RNAV (GPS),” “RNAV (RNP),” or “GPS” in the title) with a published LNAV/VNAV or 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) Has a published Vertical Descent Angle (VDA) coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP.

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

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

b. Serves a runway that has a published ILS, 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) 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 LNAV minima on an RNAV approach that also has a published LPV or LNAV/VNAV DA.

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

c. Serves a runway to an airport operating under 14 CFR part 139 with a Visual Glide Slope Indicator (VGSI).

(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 is within plus or minus 4 degrees of the runway centerline (RCL) course.

NOTE: Operators should refer to the FAA Chart Supplement (formerly the Airport/Facility Directory) to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

4. VNAV Path Angle. The VNAV path angle must be greater than or equal to 2.75 and equal to or less than 3.77 degrees for Category A, B, and C airplanes; and greater than or equal to 2.75 and equal to or less than 3.50 degrees for Category D airplanes.

5. Operational Restriction. The operator will not use an MDA as a DA/DH if the requirements specified in this letter of authorization (LOA) are not met. The operator may use a continuous descent final approach (CDFA), 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 instrument procedure being flown before conducting any operations authorized by this LOA

7. Responsible Person. The responsible person for crew operations may either be an agent for service (who must be a U.S. citizen), or a person who is a U.S. citizen or holds a U.S. pilot certificate and accepts responsibility for complying with the stated regulations by signing this document.

a. If the responsible person signing this LOA relinquishes responsibility, this LOA becomes invalid.

b. The name, email address, and 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 G. Sample LOA C073, Vertical Navigation (VNAV) Instrument Approach Procedures (IAP) Using Minimum Descent Altitude (MDA) as a Decision Altitude (DA)/Decision Height (DH): 14 CFR Part 125 (LODA)

1. The operator, authorized to conduct operations in accordance with the Letter of Deviation Authority (LODA) A125, is authorized to conduct operations using minimum descent altitude (MDA) as a decision altitude (DA)/DH with vertical navigation (VNAV) on Nonprecision Approaches (NPA). The operator/company will use letter of authorization (LOA) C073 in conjunction with LOA C052, Straight-In Nonprecision, 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 RNAV systems certified 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

> **NOTE:** New software versions do not have to be updated in the table if inspectors confirm an advisory vertical guidance capability remains after the software update. The confirmation should be confirmed by the updated Service Bulletin (SB), a manufacturer/Original Equipment Manufacturer (OEM) statement, or any other FAA-approved method.

2. Public Vertically Guided IAP Assessment. Obstacle clearance surface (OCS) assessments protect the instrument procedure, including the missed approach. Glidepath Qualification Surface (GQS) assessments protect the landing area and are accomplished on 14 CFR part 97 IAPs with a published DA/DH. These approaches conform to the U.S. standard for Terminal Instrument Procedures (TERPS) and include ILS, Ground Based Augmentation System (GBAS) Landing System (GLS), RNAV RNP, RNAV GPS IAPs with a localizer performance with vertical guidance (LPV) DA, and/or lateral navigation (LNAV)/VNAV DA.

> **NOTE:** C073 provides protection for the temporary altitude loss below the MDA when performing a missed approach at an MDA used as a DA/DH. The use of an MDA as a DA/DH does not ensure obstacle clearance when continuing the approach from the MDA to the landing runway. Operators 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.

3. Authorized Approaches. The operator/company may fly all part 97 nonprecision straight-in IAPs listed as authorized in their LOA C052, Table 1, columns 1 and 2, using an MDA as a DA/DH if the approach being flown meets one of the following requirements and all subcomponents.

a. Serves a runway that has a published RNAV IAP (“RNAV (GPS),” “RNAV (RNP),” or “GPS” in the title) with a published LNAV/VNAV or 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) Has a published Vertical Descent Angle (VDA) coincident with or higher than the barometric vertical guidance (glideslope (GS)) on the published RNAV IAP.

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

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

b. Serves a runway that has a published ILS, 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) 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 LNAV minima on an RNAV approach that also has a published LPV or LNAV/VNAV DA.

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

NOTE: The VDA is advisory guidance only. Flying the published VDA below the MDA does not guarantee obstacle clearance.

c. Serves a runway to an airport operating under 14 CFR part 139 with a Visual Glide Slope Indicator (VGSI).

(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 is within plus or minus 4 degrees of the runway centerline (RCL) course.

NOTE: Operators should refer to the FAA Chart Supplement (formerly the Airport/Facility Directory) to verify that there are no VGSI restrictions if the final approach course is offset from the extended RCL.

4. VNAV Path Angle. The VNAV path angle must be greater than or equal to 2.75 and equal to or less than 3.77 degrees for Category A, B, and C airplanes; and greater than or equal to 2.75 and equal to or less than 3.50 degrees for Category D airplanes.

5. Operational Restriction. The operator/company will not use an MDA as a DA/DH if the requirements specified in this LOA are not met. The operator/company may use a continuous descent final approach (CDFA), 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 instrument procedure being flown before conducting any operations authorized by this LOA.