

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8900.752

National Policy

Effective Date:
9/19/25

Cancellation Date:
9/19/26

SUBJ: Part P Operations Specifications (OpSpecs), Management Specifications (MSpecs), and Letters of Authorization (LOA) for Powered-Lift

1. Purpose of This Notice. This notice announces new Part P operations specification (OpSpec)/management specification (MSpec)/Letter of Authorization (LOA) templates for operators conducting Title 14 of the Code of Federal Regulations (14 CFR) part 194 powered-lift operations under 14 CFR parts 91, 91 subpart K (part 91K), and 135.

2. Audience. The primary audience for this notice is Flight Standards (FS) Safety Assurance principal inspectors (PI) with oversight responsibilities for operators using powered-lift under parts 91, 91K, and 135. The secondary audience includes FS personnel in the Office of Safety Standards.

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. The FAA published part 194 to address regulatory barriers to safely incorporate powered-lift into the National Airspace System (NAS). The final rule enables the FAA to authorize parts 91, 91K, and 135 powered-lift operators to conduct terminal instrument procedures (IP) and specify airport authorizations and limitations. The FAA has assigned OpSpec/MSpec/LOA parts specific to the category of aircraft. Part C is for airplanes, Part H is for helicopters, and Part P is for the new powered-lift category. Guidance for the new Part P templates can be found in FAA Order 8900.1, Volume 3, Chapter 18, Section 9, Part P Operations Specifications—Powered-Lift Instrument Procedures, Airport Authorizations, and Limitations. Appendix A to this notice contains a list of new templates. Appendices B through Y to this notice provide examples of the new OpSpecs templates for a part 135 powered-lift operator.

5. Action. This change affects PIs with responsibility for the issuance, amendment, and oversight of OpSpecs/MSpecs/LOAs for powered-lift operators. PIs will review this notice and Order 8900.1 guidance prior to the issuance of OpSpecs/MSpecs/LOAs for powered-lift operators.

6. Disposition. We have incorporated the information in this notice into Order 8900.1. Direct questions or comments concerning the information in this notice to the Flight Technologies and Procedures Division (AFS-400) at 202-267-8976 or 9-AWA-AFS400-COORD@faa.gov.

A handwritten signature in black ink, appearing to read "Hugh Thomas".

Hugh Thomas for
Lawrence Fields
Executive Director, Flight Standards Service

Appendix A. List of New and Revised OpSpecs**Table A-1. New OpSpec/MSpec/LOA Paragraphs**

Paragraph	14 CFR Part	Title
P048	91, 91K, 135, 121/135	Enhanced Flight Vision System (EFVS) Operations
P049	91K, 135, 121/135	Destination Airport Analysis Program
P059	91, 91K, 135, 121/135	Special Authorization Category I (SA CAT I) Instrument Approach and Landing Operations
P071	135, 121/135	Autopilot Minimum Use Altitudes/Heights (MUH)
P073	91, 91K, 135, 121/135	Vertical Navigation (VNAV) Instrument Approach Procedures (IAP) Using Minimum Descent Altitude (MDA) as a Decision Altitude (DA)
P085	135, 121/135	14 CFR Part 97 NDB, NDB/DME, VOR, VOR/DME, and TACAN Instrument Approach Procedures Using Substitute Means of Navigation
P101	91K, 135, 121/135	Terminal Instrument Procedures—Powered-Lift
P102	91K, 135, 121/135	Authorized Straight-In Instrument Approach Procedures
P103	91K, 135, 121/135	Straight-In Category I Approach Minima
P104	91, 91K, 135, 121/135	Powered-Lift Offshore Instrument Operations: Offshore Standard Approach Procedure (OSAP), Airborne Radar Approach (ARA), and Helicopter En Route Descent Area (HEDA) Operations
P105	91K, 135, 121/135	Alternate Airport IFR Weather Minimums
P106	135, 121/135	IFR Takeoff Minimums
P108	91, 91K, 135, 121/135	Category II and Category III Instrument Approach and Landing Operations
P110	91K, 135, 121/135	Automatic Landing Operations Other Than Categories II and III
P112	91K, 135, 121/135	Instrument Approach Operations Using an Area Navigation System

Paragraph	14 CFR Part	Title
P113	91K, 135, 121/135	Terminal Area IFR Operations in Class G Airspace and/or at Airports Without an Operating Control Tower—Nonscheduled Passenger and All-Cargo Operations
P114	91K, 135, 121/135	Powered-Lift Authorizations, Provisions, and Limitations into Certain Airports
P118	91K, 135, 121/135	Circle-to-Land Operations
P119	91K, 135, 121/135	Category I Contact Approach Procedures
P120	135, 121/135	Airports Authorized for Scheduled Operations
P121	135, 121/135	Terminal Area IFR Powered-Lift Operations in Class G Airspace—Scheduled Passenger Operations
P122	91, 91K, 135, 121/135	Special Instrument Procedures
P123	91K, 135, 121/135	IFR Operations for Powered-Lift Utilizing Required Navigation Performance (RNP) 0.3 for En Route and Terminal Operations
P384	91, 91K, 135, 121/135	Required Navigation Performance (RNP) Procedures with Authorization Required (AR)

**Appendix B. Sample OpSpec P048, Enhanced Flight Vision System (EFVS)
Operations: 14 CFR Part 135**

- a. The certificate holder is authorized to conduct the Enhanced Flight Vision System (EFVS) operations under 14 CFR Part 91, § 91.176 as specified in this operations specification.
- b. Authorized Powered-Lift, Equipment, and EFVS Operations. The certificate holder is authorized to conduct the EFVS operations using the aircraft and equipment listed in Table 1 below.

Table 1 – Authorized Powered-Lift, Equipment, and EFVS Operations

Powered-Lift (M/M/S)	EFVS Equipment	EFVS Operation(s)	EFVS Operational Credit

- c. Provisions and Limitations.

(1) Minimum Visibility for Use with EFVS. The certificate holder is authorized to reduce the visibility minimums required to takeoff an aircraft under IFR or begin an IFR or over-the-top operation to destination airports, to begin the Final Approach Segment (FAS), or continue an IAP under 14 CFR Part 135.225, 135.219 and Part 194, at an airport in accordance with the EFVS.

(a) Reducing minimums for use with EFVS:

(i) Is not authorized for flight release of an aircraft to destination airports unless personnel assigned to operational control duties have successfully completed the certificate holder’s EFVS training.

(ii) Is not authorized for meeting alternate airport weather requirements for flight release purposes.

(b) Table 2A or 2B below must be used for determining IAP visibility minimums with the use of EFVS.

(2) When authorized in Table 1 above for EFVS operations under § 91.176(a) and if conducting eligible on demand operations, the certificate holder must only conduct those operations at airports:

(a) With a weather reporting facility operated by the U.S. National Weather Service (NWS), a source approved by the U.S. NWS, or a source approved by the Administrator; and

(b) When the latest reported visibility is at least RVR 1000 for the runway of intended landing or, if RVR is not reported, at least ¼ statute mile.

Table 2A – Determining IAP Visibility Minimums with EFVS (RVR)

Visibility Required Without the Use of EFVS	25% Reduction Minimum Visibility with the Use of EFVS	33% Reduction Minimum Visibility with the Use of EFVS	50% Reduction Minimum Visibility with the Use of EFVS
1400	1100	1000	1000
1800	1400	1200	1000
2000	1500	1300	1000
2200	1700	1500	1100
2400	1800	1600	1200
2600	2000	1700	1300
3000	2300	2000	1500
3500	2600	2300	1800
4000	3000	2700	2000
4500	3400	3000	2300
5000	3800	3400	2500
5500	4100	3700	2800
6000	4500	4000	3000

Table 2B – Determining IAP Visibility Minimums with EFVS (Statute Mile)

Visibility Required Without the Use of EFVS	25% Reduction Minimum Visibility with the Use of EFVS	33% Reduction Minimum Visibility with the Use of EFVS	50% Reduction Minimum Visibility with the Use of EFVS
1/2	3/8	1/4	1/4
5/8	1/2	3/8	3/8
3/4	1/2	1/2	3/8
7/8	5/8	1/2	1/2
1	3/4	5/8	1/2
1 1/8	1	3/4	5/8
1 1/4	1	3/4	5/8
1 3/8	1	1	3/4
1 1/2	1 1/8	1	3/4
1 5/8	1 1/4	1	3/4
1 3/4	1 3/8	1 1/8	7/8
1 7/8	1 3/8	1 1/4	1
2	1 1/2	1 3/8	1
2 1/2	1 7/8	1 1/2	1 1/4
3	2 1/4	2	1 1/2

**Appendix C. Sample OpSpec P049, Destination Airport Analysis Program: 14 CFR
Part 135**

- a. The eligible on-demand certificate holder is authorized to use the Destination Airport Analysis Program described or referenced in this operations specification in accordance with 14 CFR Part 135, § 135.385(f) and § 194.306(hhh) and (iii).

[Enter procedures used for destination airport analysis program or manual reference.]

[Text Box]

- b. Operations specification A057 must be issued for this authorization.

**Appendix D. Sample OpSpec P059, Special Authorization Category I (SA CAT I)
Instrument Approach and Landing Operations: 14 CFR Part 135**

a. The certificate holder is authorized to conduct Special Authorization Category I (SA CAT I) instrument approach and landing operations, when in compliance with 14 CFR Part 97 special aircrew and aircraft certification requirements, as specified in this operations specification.

b. The certificate holder is authorized SA CAT I landing minimums as low as a 150 foot decision height (DH) and 1400 Runway Visual Range (RVR) to approved runways without touchdown zone (TDZ) lights and/or runway centerline (RCL) lights in accordance with the following limitations and provisions:

(1) Each aircraft used to conduct SA CAT I operations must be equipped with an operable manual flight guidance system (FGS) certified and maintained to support a DH of 150 feet or lower.

(2) Required equipment approved as basis for SA CAT I authorization (e.g., Head-Up Display (HUD), Synthetic Vision Guidance System (SVGS)) must provide each pilot with course and glide path command guidance to the DH, while simultaneously providing the pilot flying (PF) with a continuous indication of the desired trajectory to the runway TDZ independent of the guidance used for the approach. The guidance system must also provide the PF with dynamic perception of aircraft position relative to the TDZ of the runway of intended landing to facilitate the transition to the visual segment of the approach by reducing the time needed for the acquisition of visual cues.

(3) An aircraft type and/or system previously approved for SA CAT I, based upon HUD equipment, is considered to meet the requirements of this operations specification.

(4) SA CAT I authorization is based upon.

[Select the applicable required approved equipment that is the basis of this SA CAT I authorization. MUST SELECT ONE.]

- a certified HUD.
- a certified SVGS displayed on a Head-Down Display (HDD).
- either a certified HUD or a certified SVGS displayed on a Head-Down Display (HDD).

(5) The following, along with any applicable equipment otherwise required for CAT I IFR operations, must be installed and operating properly to conduct SA CAT I operations.

- (a) Two independent navigation receivers, or equivalent, of each type intended for use.
- (b) At least one radio altimeter (RA), although two are recommended.

(c) Rain removal equipment for each pilot (e.g., windshield wiper, bleed air, or rain repellent).

(6) If SVGS is used to conduct SA CAT I operations, the certificate holder must ensure SVGS databases contain current data.

c. Additional Limitations and Provisions. The flightcrew must use the means of guidance authorized in subparagraph b(4) to the DH or to the initiation of missed approach, and the guidance must be continuously displayed on the approved system.

(1) After passing the final approach fix (FAF), a missed approach must be executed if the approach guidance system specified in subparagraph b(4), or any other airborne equipment required for the particular SA CAT I operation being conducted, becomes inoperative or is disengaged, unless the requirements of 14 CFR Part 91, § 91.175(c) can be met.

(2) The crosswind component on the landing runway must be 15 knots or less unless the Aircraft Flight Manual's (AFM) crosswind limitation is more restrictive.

(3) The instrument approach procedure (IAP) must have published SA CAT I minimums.

(4) TDZ RVR reports for the landing runway are controlling. The mid-RVR report may NOT be substituted for the TDZ RVR report in SA CAT I operations.

(5) Single-pilot operations are not authorized for SA CAT I. The certificate holder must use a two-pilot flightcrew in aircraft appropriately equipped for two-pilot IFR.

d. Pilot Qualifications and Approved Training. The minimums prescribed in this operations specification are authorized for only those pilots in command (PIC) and seconds in command (SIC) who have completed the certificate holder's SA CAT I training and qualification program approved by the Administrator, and have been qualified by one of the certificate holder's check pilots or an FAA inspector, in each guidance system to be used for an SA CAT I operation specified in subparagraph b(4). The flightcrew must demonstrate proficiency in instrument approaches and landings to SA CAT I minimums or lower (e.g. CAT II or CAT III) using each FGS authorized for SA CAT I operations.

e. Maintenance. The certificate holder must incorporate the design approval holder's (DAH) instructions for continued airworthiness (ICA) into its Continuous Airworthiness Maintenance Program (CAMP) or Approved Aircraft Inspection Program (AAIP) for the aircraft used in SA CAT I operations. This requirement includes cleaning, inspection, adjusting, testing and any other actions specified at time of FGS certification to maintain airworthiness.

Appendix E. Sample OpSpec P071, Autopilot Minimum Use Altitudes/Heights (MUH): 14 CFR Part 135

- a. The certificate holder is authorized to use autopilot minimum use altitudes/heights (MUH) in accordance with 14 CFR Part 135, § 135.93 and Part 194, § 194.306(c) and the provisions and limitations of this operations specification.
- b. Approved Powered-lift M/M/S and Equipment. The certificate holder is authorized to operate with the approved powered-lift Make/Model/Series (M/M/S) and autopilot systems listed in Table 1 below at the associated MUHs. Powered-lift aircraft with the same M/M/S but equipped with a different autopilot model/version must be listed separately.
- c. MUHs. Takeoff/initial climb and go-around/missed approach altitudes/heights are minimum engagement altitudes/heights. Enroute and Approach MUHs are autopilot disengage altitudes/heights. These altitudes/heights must be listed in Table 1 for each individual phase of flight. The altitudes/heights listed in Table 1 are above airport elevation, terrain, or touchdown zone elevation (TDZE) unless associated with a DA/H or MDA. If a height is not specified in the Aircraft Flight Manual (AFM), AFM Supplement or specified and approved by AFS-400 in coordination with the FSB, a minimum altitude/height will be indicated in Table 1. These are: Takeoff/Initial Climb; 500 ft., Enroute; 500 ft., and Approach; MDA/DA/H minus 50 ft. An altitude/height determined by the Administrator will be annotated with the acronym FAA next to the number (e.g., 150 ft. (FAA)).

Table 1 – Approved Powered-Lift, Equipment and MUHs

Powered-lift M/M/S	Autopilot Manufacturer	Autopilot Model/Version	Minimum Use Altitudes/Heights (feet)		
			Takeoff/Initial Climb	Enroute	Approach

- d. Provisions and Limitations.
 - (1) Operations specification P071 does not replace or override operations specifications P108 Category II and Category III Instrument Approach and Landing Operations or P110 Automatic Landing Operations Other Than Categories II and III.
 - (2) Operations. The certificate holder must not engage the autopilot unless the autopilot system is fully operational. The certificate holder must conduct operations in accordance with the airworthiness certification of the autopilot system.
 - (3) Airworthiness. The certificate holder must maintain the powered-lift M/M/S and equipment listed in Table 1.
- e. Required Training. The flightcrew must have successfully completed the certificate holder’s approved training program curriculum on the equipment and instrument approach procedures (IAP) to be used.

Appendix F. Sample OpSpec P073, 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 (height) (DA(H)) when using vertical navigation (VNAV) as advisory information on a Nonprecision Approach (NPA). The certificate holder will use operations specification P073 in conjunction with operations specification P103, Straight-in Category I Approach Minima. The certificate holder is authorized to conduct instrument approach operations using the following powered-lift aircraft and Area Navigation (RNAV) systems approved for these VNAV operations as listed in Table 1 below.

Table 1 – Authorized Powered-Lift and Equipment

Powered-Lift 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(H). The use of an MDA as a DA(H) 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 and Part 194, § 194.302 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 P102, Table 1, Authorized Instrument Approach Procedures, columns 1 and 2 using an MDA as a DA(H) 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(H), 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(H).

(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(H).

(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(H).
- (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(H).

d. VNAV Path Angle Limits. The VNAV path angle must be in the range depicted in Table 2 below.

Table 2 – VNAV Path Angle Limits

Condition	VNAV Path Angle Limits
Operating in Wing-borne Flight Mode, or Vertical-lift Flight Mode and AFM contains a limitation against using copter procedures	2.75 – 3.77 degrees for Cat A, B, C, D 2.75 – 3.5 degrees for Cat E
Operating in Vertical-lift Flight Mode and AFM does not contain a limitation against using copter procedures	2.75 – 5.7 degrees

e. Provisions and Limitations.

(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(H).

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

(c) The MDA and DA(H) 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(H), but will begin the missed approach at an altitude above the MDA that will not allow the aircraft 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 P102 before conducting operations authorized by this paragraph.

Appendix G. Sample OpSpec P085, 14 CFR Part 97 NDB, NDB/DME, VOR, VOR/DME, and TACAN Instrument Approach Procedures Using Substitute Means of Navigation: 14 CFR Part 135

- a. The certificate holder is authorized to conduct 14 CFR Part 97 non-directional radio beacon (NDB), NDB/distance measuring equipment (DME), very high frequency omni-directional range station (VOR), VOR/DME, and Tactical Air Navigation System (TACAN) instrument approach procedures (IAP) using Area Navigation (RNAV) equipment with Global Positioning System (GPS) or a Wide Area Augmentation System (WAAS) as an active sensor.
- b. Powered-Lift and Equipment Authorization. The certificate holder is authorized to conduct Part 97 NDB, NDB/DME, VOR, VOR/DME, and TACAN IAPs using the following powered-lift Make/Model/Series (M/M/S) and equipment listed in Table 1 below when operated in accordance with the approved Aircraft Flight Manual (AFM), or other approved FAA documents, and this operations specification.

Table 1 – Powered-Lift and Equipment Authorization

Powered-lift M/M/S	RNAV System(s) and Software			Limitations and Provisions
	Manufacturer	Model	Software Part/Version	

c. Limitations and Provisions.

(1) The certificate holder is authorized to conduct NDB, NDB/DME, VOR, VOR/DME, and TACAN IAPs using the procedures described herein. This operations specification applies when the underlying Navigational Aid (NAVAID) (NDB, VOR, DME, or TACAN) is out of service and/or compatible powered-lift avionics are either not installed (automatic direction finder (ADF), DME, or TACAN) or not operational (VOR, ADF, DME, or TACAN). The certificate holder may need to coordinate with air traffic control (ATC) to receive clearance for a procedure when planning to use an RNAV system as a substitute means of navigation in lieu of an out-of-service NAVAID.

(2) IAPs must be selected by procedure name (e.g., line-selectable) from a current aircraft navigational database and conform to the charted procedure. The certificate holder is responsible for ensuring that the procedure as flown complies with the charted procedure. Department of Defense (DOD) IAPs are considered equivalent to Part 97 unless identified as “Not for Civil Use.”

(a) The navigational database must be obtained from an FAA-approved database supplier.

(b) Heading-based legs associated with procedures may be flown using manual technique (based on indicated magnetic heading) or, if available, extracted from the aircraft database.

(c) If the Aeronautical Information Regulation and Control (AIRAC) cycle will change during flight, the certificate holder must establish flightcrew procedures to ensure the accuracy of navigation data, to include suitability of navigation facilities used to define the procedures for flight. This can be accomplished by verifying electronic data in the expired database with current paper or electronic charts, as applicable. New and old paper/electronic aeronautical charts must be used to verify navigation fixes prior to dispatch. If an amended chart affecting navigation data is published for the procedure, the database must not be used to conduct the procedure.

(3) The certificate holder must ensure one of the following navigation data and flyability validation processes is used and satisfactorily completed prior to conducting operations covered by this operations specification:

(a) Ongoing, system-wide checks of navigation data and flyability.

(b) As needed, procedure-specific checks of navigation data and flyability.

(4) These processes must ensure navigation data (e.g., waypoint names, waypoint sequence, distance between waypoints, heading/course/track information, and vertical path angles) used in airborne equipment conform to published information. The following methods to check the flyability of procedure(s) are acceptable: suitable desktop analysis, simulator evaluation, or flight (in visual meteorological conditions (VMC)) that is compatible with all powered-lift and equipment listed in subparagraph b of this operations specification. If a procedure has previously been flown using compatible powered-lift M/M/S and equipment listed in subparagraph b of this operations specification and found satisfactory while monitoring raw data from the underlying NAVAID, the certificate holder is not required to complete additional flyability checks, provided the lateral path of the procedure has not been modified.

(5) Modification of approach waypoints is prohibited. Waypoints not overflowed in compliance with an ATC clearance (e.g., direct-to clearance) may be deleted. This prohibition does not apply to altitude or speed changes that may be required to comply with an ATC clearance.

(6) The certificate holder must develop procedures to verify correct GPS operation if operating powered-lift that do not automatically alert the flightcrew to a loss of the GPS signal.

(7) Operation on NDB, NDB/DME, VOR, VOR/DME, and TACAN IAPs authorized under this operations specification requires a navigation system accuracy less than or equal to 1.0 nautical miles (NM) for initial and intermediate approach segments, 0.3 NM for Final Approach Segments (FAS), and 1.0 NM for Missed Approach Segments (MAS). These operations are not categorized as Required Navigation Performance (RNP) approaches, and do not constitute or require an RNP authorization.

(8) Flightcrews must ensure that the required navigation system accuracy for each flight segment is satisfied. The onboard navigation system performance monitoring and alerting functions of RNP equipment may be used to satisfy this requirement, provided this equipment is found suitable for these purposes. The certificate holder may use the manual setting of minimum RNP (e.g., 0.3 NM) prior to conducting an approach as a method to satisfy the requirements of subparagraphs c(6) and (7).

(9) Flightcrews are expected to maintain procedure centerlines (CL), as depicted by onboard lateral deviation indicators, displays, and/or flight guidance, during all operations described in this operations specification unless otherwise authorized to deviate by ATC or in the instance of an emergency condition. For normal operations, cross-track (XTK) error/deviation (the difference between the RNAV equipment computed path and the powered-lift position relative to the path) should be limited to +/- one-half of the navigation accuracy associated with the procedure segment (i.e., 0.5 NM for the initial and intermediate segments, 0.15 NM for the FAS, and 0.5 NM for the MAS). Brief deviations from this standard (e.g., overshoots or undershoots) during and immediately after turns, up to a maximum of one times the navigation accuracy (i.e., 1.0 NM for the initial and intermediate segments), are allowable.

(10) Flightcrews must execute a missed approach if the allowable navigation system accuracy and/or lateral XTK error is exceeded and unable to remain in VMC while proceeding to the runway using the visual references specified in 14 CFR Part 91, § 91.175 and Part 194, § 194.302 or Part 135, § 135.225 and Part 194, § 194.306, as applicable.

(11) The certificate holder may use RNAV substitution for planning purposes at an alternate airport for Part 97 NDB, NDB/DME, VOR, VOR/DME, and TACAN IAPs. This includes the authorization to use airports with an unmonitored NAVAID as an alternate. This authorization allows the unmonitored NAVAID to be treated as out of service within the context of this authorization only. The certificate holder must be authorized operations specification P105, Alternate Airport IFR Weather Minimums. When using this operations specifications and P105 Alternate Airport IFR Weather Minimums together for alternate planning purposes, the substituted approach must be considered a GPS-based IAP. The certificate holder must follow all P105 limitations and provisions regarding the use of GPS-based IAPs for alternate planning.

(12) The certificate holder must perform a receiver autonomous integrity monitoring (RAIM) availability prediction during flight planning. RAIM must be predicted to be available during periods of operation. The certificate holder must check WAAS Notices to Airmen (NOTAM) when using RNAV equipment with WAAS as an input.

(13) The certificate holder must not conduct any operation authorized by this operations specification unless each pilot satisfactorily completes the certificate holder's approved training and qualification program for the equipment and any special procedures to be used.

**Appendix H. Sample OpSpec P101, Terminal Instrument Procedures—
Powered-Lift: 14 CFR Part 135**

a. The certificate holder is authorized to conduct powered-lift terminal instrument operations using the procedures and minimums specified in these operations specifications, provided one of the following conditions is met:

(1) The terminal instrument procedure used is prescribed by these operations specifications.

(2) The terminal instrument procedure used is prescribed by 14 CFR Part 97, Standard Instrument Approach Procedures.

(3) At U.S. military airports, the terminal instrument procedure used is prescribed by the U.S. military agency operating the airport.

(4) If authorized foreign airports, the terminal instrument procedure used at the foreign airport is prescribed or approved by the government of an ICAO contracting state. The terminal instrument procedure must meet criteria equivalent to that specified in either the United States Standard for Terminal Instrument Procedures (TERPS) or ICAO Document 8168-OPS, Procedures for Air Navigation Services-Aircraft Operations (PANS-OPS), Volume II.

b. If Applicable, Special Limitations and Provisions for Instrument Approaches at Foreign Airports.

(1) Terminal instrument procedures may be developed and used by the certificate holder for any foreign airport, provided the certificate holder determines that each procedure developed is equivalent to U.S. TERPS, ICAO PANS-OPS, MIPS criteria, or other special criteria approved by the headquarters Flight Technologies and Procedures Division (AFS-400). The visibility, RVR, or CMV is based on TERPS, EU-OPS 1 or ICAO Document 9365. The certificate holder must submit to the FAA a copy of the terminal instrument procedure with supporting documentation.

(2) At foreign airports, the certificate holder must not conduct terminal instrument procedures determined by the FAA to be “not authorized for United States air carrier use.” In these cases, the certificate holder may develop and use a terminal instrument procedure provided the certificate holder determines that each procedure developed is equivalent to U.S. TERPS, ICAO PANS-OPS, MIPS criteria, or other special criteria approved by the headquarters Flight Technologies and Procedures Division (AFS-400). The visibility, RVR, or CMV is based on TERPS, EU-OPS 1 or ICAO Document 9365. The certificate holder must submit to the FAA a copy of the terminal instrument procedure with supporting documentation.

(3) When the minima are specified only in meters, the certificate holder must use the metric operational equivalents as specified in the RVR Conversion Table (Table 1) or the Meteorological Visibility Conversion Table (Table 2) for both takeoff and landing. Values not shown may be interpolated.

Table 1		Table 2	
RVR Conversion		Meteorological Visibility Conversion	
Feet	Meters	Statute Miles	Meters
300 ft	75 m	¼ sm	400 m
400 ft	125 m	3/8 sm	600 m
500 ft	150 m	1/2 sm	800 m
600 ft	175 m	5/8 sm	1000 m
700 ft	200 m	3/4 sm	1200 m
1000 ft	300 m	7/8 sm	1400 m
1200 ft	350 m	1 sm	1600 m
1600 ft	500 m	1 1/8 sm	1800 m
1800 ft	550 m	1 ¼ sm	2000 m
2000 ft	600 m	1 ½ sm	2400 m
2100 ft	650 m	1 ¾ sm	2800 m
2400 ft	750 m	2 sm	3200 m
3000 ft	1000 m	2 ¼ sm	3600 m
4000 ft	1200 m	2 ½ sm	4000 m
4500 ft	1400 m	2 ¾ sm	4400 m
5000 ft	1500 m	3 sm	4800 m
6000 ft	1800 m		

(4) When operating at foreign airports where the published landing minima are specified in RVR, the RVR may not be available, therefore the meteorological visibility is reported. When the minima are reported in meteorological visibility, the certificate holder must convert meteorological visibility to RVR by multiplying the reported visibility by the appropriate factor, shown in Table 3. The conversion of reported meteorological visibility to RVR is used only for Category I landing minima, and must not be used for takeoff minima, CAT II or III minima, or when a reported RVR is available.

Table 3 – [RVR = (reported meteorological visibility) X (factor)]

AVAILABLE LIGHTING	DAY	NIGHT
High Intensity Approach and runway lighting	1.5	2.0
Any type of lighting installation other than above	1.0	1.5
No lighting	1.0	N.A

Appendix I. Sample OpSpec P102, Authorized Straight-In Instrument Approach Procedures: 14 CFR Part 135

a. The certificate holder is authorized to conduct operations using the types of instrument approach procedures (IAPs) listed in Table 1 below and must not conduct operations using any other types unless authorized by paragraph P108, Category II and Category III Instrument Approach and Landing Operations, P118, Circle to Land Operations, or P119, Category I Contact Approach Procedures, as applicable.

Table 1 – Authorized Instrument Approach Procedures

Non-Precision Approaches Without Vertical Guidance	Approaches With Vertical Guidance (APV)	Precision Approach Procedures (ILS & GLS)

Note: Approval for RNAV (GPS) approaches may be extended to include approval for “RNAV (GNSS)” and/or “RNP” titled approaches in foreign States. Certificate holder should consult applicable foreign Aeronautical Information Publications (AIP) and ensure navigation equipment equivalency. This approval does not extend to RNP approaches with authorization required (RNP AR).

b. Provisions and Limitations.

(1) Unless otherwise authorized by these operations specifications, the certificate holder must not use any IFR IAP at any U.S. civil, military, or joint-use airport unless:

(a) It is promulgated under 14 CFR Part 97, or

(b) The procedure has been constructed using United States Standard for Terminal Instrument Procedures (TERPS), or other criteria approved by the headquarters Flight Technologies and Procedures Division (AFS-400), or

(c) The procedure has been prescribed by the U.S. military agency operating the U.S. military airport.

(2) Runway Visual Range: TDZ RVR reports, when available for a particular runway, are controlling for all approaches to and landings on that runway.

(a) The mid RVR and rollout RVR reports (if available) provide advisory information to pilots.

(b) Visibility values below ½ statute mile are not authorized and must not be used.

(c) The mid RVR report may be substituted for the TDZ RVR report if the TDZ RVR report is not available.

(3) The certificate holder may not use DA in lieu of MDA unless paragraph P073 is authorized.

(4) Unless otherwise authorized by paragraph P384, the certificate holder may not conduct any RNP authorization required (RNP AR) operations.

(5) Approach Procedures Using GPS or GPS Wide Area Augmentation System (WAAS). The certificate holder is authorized to conduct GPS and/or GPS WAAS instrument approach operations using the approved GPS and/or GPS WAAS equipment listed in paragraph B034 if "... or GPS", GPS, or RNAV (GPS) or RNAV (GNSS) is listed in Table 1 above. This authorization to conduct approaches using GPS and/or GPS WAAS is subject to the following limitations and conditions:

(a) The airborne GPS and/or GPS WAAS navigation equipment to be used must be approved for IFR operations, certified for the intended operation (LPV, LNAV/VNAV, LP or LNAV) and must contain current navigation data.

(b) Both the GPS constellation and the required airborne equipment must be providing the levels of availability, accuracy, continuity of function, and integrity required for the operation.

c. Provisions and Limitations for IAPs at Foreign Airports.

(1) Unless otherwise authorized by these operations specifications, the certificate holder must not use any IFR IAP at any foreign airport unless:

(a) The procedure has been constructed using criteria based on FAA Order 8260.3, or other criteria approved by the headquarters Flight Technologies and Procedures Division (AFS-400), or the procedure has been constructed using criteria prescribed by the ICAO Doc 8168, Procedures for Air Navigation Services, and,

(b) The visibility, RVR, or Converted Meteorological Visibility (CMV) is based on FAA Order 8260.3, or the applicable European Union (EU) or European Aviation Safety Agency (EASA) regulation or ICAO Doc 9365, Manual of All Weather Operations, Third Edition, and,

(c) The DH/MDA must not be below 200 feet HAT unless authorized by these operations specifications.

(2) The certificate holder may not conduct operations using RNP-AR or "RNP-Like" foreign procedures unless the certificate holder is authorized paragraph P384.

(3) Foreign approach lighting systems compliant with the ICAO Annex 14 Standards and Recommended Practices (SARPS) or equivalent to U.S. standards are authorized for non-precision, APV, and precision instrument approaches. Sequenced flashing lights are not required when determining the equivalence of a foreign approach lighting system to U.S. standards.

(4) For straight-in landing minima at foreign airports where an MDA(H) or DA(H) is not provided, the lowest authorized MDA(H) or DA(H) will be obtained as follows:

(a) When an Obstruction Clearance Limit (OCL) is specified, the authorized MDA(H) or DA(H) is the sum of the OCL and the airport elevation. The MDA(H) may be rounded to the next higher 10-foot increment.

(b) When an Obstacle Clearance Altitude (OCA)/Obstacle Clearance Height (OCH) is specified, the authorized MDA(H) or DA(H) is equal to the OCA/OCH as adjusted by any operational requirement to increase the altitude/height. For non-precision approaches, the authorized MDA(H) may be expressed in intervals of 10 feet.

(5) When conducting an IAP outside the United States, the certificate holder must not operate an aircraft below the prescribed MDA(H) or continue an approach below the DA(H), unless the aircraft is in a position from which a normal approach to the runway of intended landing can be made and at least one of the following visual references is clearly visible to the pilot:

- (a) Runway, runway markings, or runway lights.
- (b) Approach light system (in accordance with 14 CFR § 91.175(c)(3)(i)).
- (c) Threshold, threshold markings, or threshold lights.
- (d) Touchdown zone (TDZ), TDZ markings, or TDZ lights.
- (e) Visual glidepath indicator (such as VASI, PAPI).
- (f) Runway end identifier lights.

(6) Approaches to runways with published minima as low as 1800 RVR (550m) without installed RCL and/or TDZ lighting or with inoperative RCL and/or TDZ lighting are authorized as long as the requirements of subparagraph c(1)(a-c) of this operations specification are met.

[Only select this subparagraph if the certificate holder complies with the PRM guidance and training located in 8900.1 Volume 3, Chapter 18, Section 9.]

d. Precision Runway Monitor (PRM) Approaches. The certificate holder is authorized to conduct PRM approaches.

**Appendix J. Sample OpSpec P103, Straight-In Category I Approach Minima:
14 CFR Part 135**

- a. Except as provided in this paragraph, the certificate holder must not use any Category I IFR landing minimum lower than that prescribed by any applicable published instrument approach procedure. The IFR landing minimums prescribed in this paragraph are the lowest authorized (other than Airborne Radar approaches) for use at any airport.
- b. High-Minimum PIC Provisions. A PIC who has not met the requirements of 14 CFR Part 135, § 135.225(e), and Part 194, § 194.306(vv) must use the high-minimum pilot RVR landing minimum equivalents as determined from Table 1 below.

Table 1 – High Minimum PIC RVR Landing Minimum Equivalents

RVR Landing Minimum as Published	RVR Landing Minimum Equivalent required for High-Minimum Pilots
RVR 1800	RVR 4500
RVR 2000	RVR 4500
RVR 2400	RVR 5000
RVR 3000	RVR 5000
RVR 4000	RVR 6000
RVR 5000	RVR 6000

- c. Operating in Vertical-lift Flight Mode: Powered-lift operating in the vertical-lift flight mode whose aircraft flight manual (AFM) does not contain a limitation against using copter procedures are authorized to conduct straight-in precision instrument approach procedures using the following landing minimums provided that the fastest approach speed used in the final approach segment is 90 knots or less:

- (1) The published Category A minimum descent altitude (MDA) or decision height (DH), as appropriate.
- (2) One-half of the published Category A visibility/RVR minimum or the visibility/RVR minimums prescribed by Tables 1, 2 and 3 of this paragraph as applicable, whichever is higher.
- (3) Straight-In Category I Precision Approach Procedures. The certificate holder must not use an IFR landing minimum for straight-in precision approach procedures lower than that specified in Table 2 below. Touchdown RVR reports, when available for a particular runway, are controlling for all approaches to and landings on that runway. (See Note 2.).

Table 2 – Precision Approach Minimums (Vertical-lift Flight Mode)

FULL ILS (See Note 1), MLS, or PAR					
Approach Lights	HAT	Final Approach segment at 90 Knots or less		Final Approach segment greater than 90 Knots	
		Visibility (SM)	TD RVR	Visibility (SM)	TD RVR
No Lights or ODALS or MALS or SSALS	200	3/4	3500	3/4	4000
MALSR or SSALR or ALSF-1 or ALSF-2	200	1/4	1600	1/2	1800
MALSR with TDZ and CL or SSALR with TDZ and CL or ALSF-1/ALSF-2 with TDZ and CL	200	1/4	1600	1/2	1800

Note 1: A full ILS requires an operative LOC, GS, and OM or FAF. A precision or surveillance radar fix, an NDB, VOR, DME fix, or a published minimum Glide Slope Intercept Altitude (GSIA) may be used in lieu of an outer marker.

Note 2: The midpoint RVR and rollout RVR reports (if available) provide advisory information to pilots. The midpoint RVR report may be substituted for the touchdown RVR report if the touchdown RVR report is not available.

(4) Straight-In Category I Non-Precision Approach Procedures. The certificate holder must not use an IFR landing minimum for straight-in precision approach procedures lower than that specified in Table 3 below. Touchdown (TD) RVR reports, when available for a particular runway, are controlling for all approaches to and landings on that runway. (See Note 6.)

Table 3 – Non-Precision Approach Minimums (Vertical-lift Flight Mode)

Approach Lights	HAT (See Notes 1, 2 & 3)	Final Approach segment at 90 Knots or less		Final Approach segment greater than 90 Knots	
		Visibility (SM)	TD RVR	Visibility (SM)	TD RVR
No Lights	250	3/8	2000	1	5000
ODALS or MALS or SALS	250	3/8 (See Note 5)	1600 (See Note 5)	3/4	4000
MALSR or SSALR or ALSF-1 or ALSF-2	250	1/4 (See Note 5)	1600 (See Note 5)	1/2 (See Note 4)	2400 (See Note 4)
DME ARC any light Configuration	500	3/4	4000	1	5000

Note 1: For NDB approaches with a FAF, add 50 ft. to the HAT.

Note 2: For NDB approaches without a FAF, add 100 ft. to the HAT.

Note 3: For VOR approaches without a FAF, add 50 ft. to the HAT.

Note 4: For NDB approaches, the lowest authorized visibility is 3/4 and the lowest RVR is RVR 4000.

Note 5: For NDB approaches, the lowest authorized visibility is 3/8 and the lowest RVR is RVR 2000.

Note 6: The Mid RVR and Rollout RVR reports (if available) provide advisory information to pilots. The Mid RVR report may be substituted for the TDZ RVR report if the TDZ RVR report is not available.

d. Operating in Wing-borne Flight Mode or Vertical-lift Flight Mode: Powered-lift operating in wing-borne flight mode or operating in vertical-lift flight mode and whose AFM contains a limitation against using copter procedures, are authorized to conduct straight-in instrument approach procedures as follows:

(1) Standard Minimums (Precision and Non-Precision):

(a) The higher of 2400 RVR ($\frac{1}{2}$ SM) visibility or Table 1 as applicable.

e. Reduced Precision CAT I Landing Minima (Wing-borne Flight Mode):

(1) Reduced Landing Minima – 200 feet DH and 1800 RVR. The certificate holder is authorized precision CAT I landing minima as low as 1800 RVR to approved runways without TDZ lights and/or runway centerline (RCL) lights, including runways with installed but inoperative TDZ lights and/or RCL lights, in accordance with the following requirements:

(a) The authorized aircraft must be equipped with an approved FD (Flight Director), AP (Autopilot), or HUD (Head-Up Display) approved for at least CAT I operations that provides guidance to DA. The flightcrew must be required to engage the FD, AP, or HUD as applicable and use it to DA or initiation of missed approach unless adequate visual references with the runway environment are established that allow the safe continuation to a landing. Single pilot operations are prohibited from using the FD to reduced CAT I landing minima without the accompanying use of an AP or HUD.

(b) Should the FD, AP, or HUD malfunction or be disengaged during the approach, the flightcrew must execute a missed approach unless the approach can be continued with the use of an operational FD, AP, or HUD, or visual reference to the runway environment has been established.

(c) The flightcrew must demonstrate the following type of procedures through proficiency check(s): At least one precision approach (ILS, GLS, and /or RNAV (GPS) with LPV) with a DA/HAT less than 250 feet using the FD, AP, or HUD as applicable.

(d) The Part 97 SIAP must have an 1800 RVR minimum.

f. Provisions and Limitations at Foreign Airports.

(1) If the certificate holder is authorized operations at foreign airports, the following criteria apply.

(a) The procedure has been constructed using criteria based on FAA Order 8260.3, or other criteria approved by the headquarters Flight Technologies and Procedures Division (AFS-400), or the procedure has been constructed using criteria prescribed by the ICAO Doc 8168, Procedures for Air Navigation Services, and,

(b) The visibility, RVR, or Converted Meteorological Visibility (CMV) is based on FAA Order 8260.3, or the applicable European Union (EU) or European Aviation Safety Agency (EASA) regulation or ICAO Doc 9365, Manual of All Weather Operations, Third Edition, and,

(c) The DH/MDA must not be below 200 feet HAT unless authorized by these operations specifications.

(2) The certificate holder may not conduct operations using RNP-AR or “RNP-Like” foreign procedures unless the certificate holder is authorized nonstandard paragraph P384 Required Navigation Performance (RNP) Procedures With Authorization Required (AR) and the procedures are authorized from within the applicable paragraph.

(3) Foreign approach lighting systems compliant with the ICAO Annex 14 Standards and Recommended Practices (SARPS) or equivalent to U.S. standards are authorized for non-precision, APV, and precision instrument approaches. Sequenced flashing lights are not required when determining the equivalence of a foreign approach lighting system to U.S. standards.

(4) For straight-in landing minima at foreign airports where an MDA(H) or DA(H) is not provided, the lowest authorized MDA(H) or DA(H) shall be obtained as follows:

(a) When an Obstruction Clearance Limit (OCL) is specified, the authorized MDA(H) or DA(H) is the sum of the OCL and the airport elevation. The MDA(H) may be rounded to the next higher 10-foot increment.

(b) When an Obstacle Clearance Altitude (OCA)/Obstacle Clearance Height (OCH) is specified, the authorized MDA(H) or DA(H) is equal to the OCA/OCH as adjusted by any operational requirement to increase the altitude/height. For non-precision approaches, the authorized MDA(H) may be expressed in intervals of 10 feet.

(5) When conducting an IAP outside the United States, the certificate holder must not operate an aircraft below the prescribed MDA(H) or continue an approach below the DA(H),

unless the aircraft is in a position from which a normal transition and stabilized approach to the runway of intended landing can be made and at least one of the following visual references is clearly visible to the pilot:

- (a) Runway, runway markings, or runway lights.
- (b) Approach light system (in accordance with 14 CFR § 91.175(c)(3)(i)).
- (c) Threshold, threshold markings, or threshold lights.
- (d) Touchdown zone (TDZ), TDZ markings, or TDZ lights.
- (e) Visual glidepath indicator (such as VASI, PAPI).
- (f) Runway end identifier lights.

(6) Approaches to runways with published minima as low as 1800 RVR (550m) without installed RCL and/or TDZ lighting or with inoperative RCL and/or TDZ lighting are authorized as long as the requirements of subparagraph e(1)(a-c) of this operations specification are met.

[Select "Precision Runway Monitor (PRM) Approaches" authorization statement from checkbox below, if authorized.]

g. Precision Runway Monitor (PRM) Approaches. The certificate holder is authorized to conduct PRM approaches.

Appendix K. Sample OpSpec P104, Powered-Lift Offshore Instrument Operations: Offshore Standard Approach Procedure (OSAP), Airborne Radar Approach (ARA), and Helicopter En Route Descent Area (HEDA) Operations: 14 CFR Part 135

a. The certificate holder is authorized to conduct the following powered-lift offshore instrument operations listed in Table 1 below while operating in the vertical-lift flight mode, in accordance with the limitations and provisions of this operations specification and must not conduct powered-lift offshore instrument operations of any other type.

Table 1 – Authorized Powered-Lift Offshore Instrument Operations

Powered-lift M/M/S	RNAV System/Radar			Offshore Operations	Additional Capabilities	Lowest Authorized Altitude	Lowest Authorized Visibility	Remarks, Limitations, and Conditions
	Make	Model/ HW Part	Software Part/ Ver. #					

b. Limitations and Provisions. This authorization is subject to the following conditions and limitations:

(1) All operations authorized by this operations specification must be conducted in the vertical-lift flight mode and the Aircraft Flight Manual (AFM) cannot contain a limitation against using copter procedures.

(2) Descent must be entirely over water.

(3) Unless otherwise authorized by this operations specification, the certificate holder must not use any other Instrument Flight Rules (IFR) operation.

(4) The certificate holder must not use a minimum descent altitude (MDA) or visibility below the authorized values in Table 1 above.

(5) Descent below the MDA is not authorized whenever any of the following conditions exist:

(a) Any obstruction within a lateral distance of 0.5 nautical mile (NM) from the final approach course of an OSAP.

(b) Any obstruction within a lateral distance of 1 NM from the final approach course of an ARA.

(c) Any obstruction detected in the HEDA by onboard approved equipment, if not visually confirmed.

(d) A radio altimeter (RA) is not installed or is inoperative.

(e) Surface mapping radar is not installed or is inoperative.

(6) The lowest altitude used for IFR flight in any HEDA must not be lower than 400 ft above the surface.

(7) The airborne navigational equipment required to be used, including RA and weather radar (WX) with a ground mapping mode, must be approved for IFR operations.

(8) The required airborne equipment must provide the appropriate levels of availability, accuracy, continuity of function, and integrity for the operation.

(9) The operation has an approved source(s) of weather.

(10) The powered-lift must be equipped with one or more independent navigation system(s) suitable for navigating the aircraft along the route to be flown within the degree of accuracy required for Air Traffic Control (ATC) and:

(a) It can be shown that the aircraft is equipped with at least one other independent navigation system suitable, in the event of loss of the navigation capability of the single independent navigation system at any point along the route, for proceeding safely to a landing location and completing an instrument approach or offshore instrument operation; and

(b) The powered-lift has sufficient fuel so that the flight may proceed safely to a suitable landing location by use of the remaining navigation system, complete an instrument approach or offshore instrument operation, and land.

c. Aircraft Proprietary Automated System. Use of an aircraft proprietary automated system is authorized contingent upon the following conditions:

(1) The certificate holder's powered-lift are properly modified in accordance with means approved by the FAA.

(2) The certificate holder has revised its General Maintenance Manual (GMM), inspections covering respective regulatory maintenance, and inspection programs to capture instructions for continued airworthiness (ICA) requirements.

(3) The certificate holder has revised its approved training program to establish a training and testing program for pilots that will be using the new system.

(4) The certificate holder will establish a means for the flightcrew to readily identify before flight which powered-lift have the enhanced proprietary automated system capability.

(5) The certificate holder has made revisions to the General Operations Manual (GOM) and flight deck checklist covering any procedural changes when using the automated approach system.

(6) The certificate holder must not conduct such operations unless the certificate holder's approved training program provides training for the equipment and procedures to be used.

(7) The PIC and the SIC must have completed the certificate holder's approved training program for the operations authorized in this operations specification.

**Appendix L. Sample OpSpec P105, Alternate Airport IFR Weather Minimums:
14 CFR Part 135**

- a. The certificate holder is authorized to conduct powered-lift operations using the alternate airport Instrument Flight Rules (IFR) weather minimums derived under the requirements of 14 CFR Part 91, §§ 91.169(c)(1)(ii)–(2) and part 194, 194.306(tt), 194.302(r)(1), as applicable, and in accordance with the provisions and limitations of this operations specification.
- b. IFR Alternate Airport Weather Minimums: When instrument flight rules require the certificate holder to designate an alternate airport such as takeoff alternate or destination alternate, the certificate holder must qualify the selected airport in accordance with the forecasted weather and airport capability requirements by using weather minimums derived from Table 1 or Table 2 as applicable.
- c. Powered-lift aircraft operating in the vertical-lift flight mode and whose aircraft flight manual (AFM) does not contain a limitation against using copter procedures must use the weather minimums listed in Table 1 below.

Table 1 – Vertical-Lift Flight Mode IFR Alternate Airport Weather Minimums

Suitable Alternate Airport Instrument Approach Capability	Ceiling	Visibility
Airports with at least one operational navigational facility providing a straight-in nonprecision approach procedure, or a CAT I precision approach procedure, or when applicable, a circling maneuver from an IAP.	A ceiling derived by adding 200 ft to MDA(H) or DA(H), as applicable.	1600 m or 1 statute mile (sm) but never less than the minimum visibility for the approach to be flown.
No suitable instrument flight procedure available, or no weather reporting capability present at the airport.	A ceiling allowing descent from the minimum enroute altitude (MEA), approach, and landing under basic VFR.	Visibility minimums are those allowing descent from the minimum enroute altitude (MEA), approach, and landing under basic VFR.

- d. Powered-lift aircraft operating in the wing-borne flight mode or whose AFM contains a limitation against using copter procedures must use the weather minimums listed in Table 2 below.

Table 2 – Wing-Borne Flight Mode IFR Alternate Airport Weather Minimums

Suitable Alternate Airport Instrument Approach Capability	Ceiling	Visibility
For airports with at least one operational navigational facility providing a straight-in nonprecision approach procedure, or CAT I precision approach, or, when applicable, a circling maneuver from an IAP.	Add 400 ft to MDA(H) or DA(H), as applicable.	Add 1600 m or 1 statute mile (sm) to the landing minimum.
For airports with at least two operational navigational facilities, each providing a straight-in approach procedure to different suitable runways.	Add 200 ft to the higher DA(H) or MDA(H) of the two approaches.	Add 800 m or ½ sm to the higher authorized landing minimum of the two approaches used.

e. Provisions and Limitations:

(1) To use Table 1 minimums, the AFM must not contain a limitation against using copter procedures.

(2) In determining alternate airport weather minimums, the certificate holder must not use any IAP which specifies that alternate weather minimums are not authorized.

(3) The certificate holder must use only the alternate airport weather minimums derived from Table 1 or 2 as applicable. The certificate holder may apply the additive values from Table 1 or 2 to the Standard, Non-Standard, or Restricted Alternate minima, as applicable, to the suitable IAP selected at the alternate airport(s).

(4) When determining the suitability of an airport, forecast winds (including gusts) must be within operating limits (including reduced visibility limits) and within the manufacturer's maximum demonstrated crosswind (or tailwind) limits.

(5) All conditional forecast elements below the lowest applicable operating minimums must be considered. Additives are applied only to the height value (H) rounded up to the next 100 ft value (if not a multiple of 100) to determine the required ceiling. Visibility additives should use like values (RVR additives to RVR, prevailing visibility to prevailing visibility).

(6) When dispatching under the provisions of the minimum equipment list (MEL), those MEL limitations affecting instrument approach minimums must be considered in determining alternate minimums.

(7) For permitted operations outside the United States, because of variations in the international metric weather forecasting standards, 700 m may be used in lieu of 800 m.

(8) The certificate holder must not use any Global Positioning System (GPS)-based instrument approach procedure (IAP) unless the certificate holder is authorized to conduct GPS-based IAP and meets the requirements in subparagraph e(5) above.

(9) Use of GPS-Based IAP Minimums at an Alternate Airport. The certificate holder may use GPS-based IAP minimums at an alternate airport with the powered-lift make, model, and series (M/M/S) listed in Table 3 below. If no authorizations appear in Table 3, GPS-based IAP minimums are not authorized at an alternate airport. Examples of GPS-based IAP include GPS, Area Navigation (RNAV) (GPS), and RNAV (Required Navigation Performance (RNP)). Use of GPS-based IAP minimums at the departure, en route, or destination alternate airport is authorized in the U.S. National Airspace System (NAS) and in any foreign State where GPS-based (or other Global Navigation Satellite System (GNSS)-based, including Satellite-based Augmentation System (SBAS)-based) approaches are authorized for alternate planning as determined by the applicable Aeronautical Information Publication (AIP).

Table 3 – GPS-Based IAP Authorizations

Powered-Lift M/M/S	Conditions and Limitations	Remarks

(a) Before the certificate holder is authorized to plan for the lines of minimums specified below, the certificate holder must be approved to conduct GPS-based IAP under operations specification P102, Basic Instrument Approach Procedures Authorizations—All Airports.

(b) When applicable, the certificate holder must also be approved to conduct GPS-based IAP under operations specification P122, Special Instrument Procedures for Powered-Lift Operations; and/or operations specification P123, IFR Operations for Powered-Lift Utilizing Required Navigation Performance (RNP) 0.3 En Route and Terminal Operations.

(c) For aircraft equipped with either a Technical Standard Order (TSO)-C129() or a TSO-C196() compliant navigation system a preflight receiver autonomous integrity monitoring (RAIM) prediction for the airport where the GPS-based IAP will be flown must be performed. The certificate holder must also ensure that the conventional approach (at destination) can be flown without reliance on GPS. The certificate holder must check Notices to Airmen (NOTAMs) as part of the preflight planning activities.

(d) For aircraft equipped with either a TSO-C145() or a TSO-C146() compliant navigation system, the certificate holder must review appropriate Aeronautical Information Services (AIS) and NOTAMs for wide area augmentation system (WAAS) service outages.

(e) The certificate holder may use suitable RNAV systems for flight planning at an alternate airport, provided planned availability of the substitute means of navigation is confirmed (e.g., NOTAMs and RAIM prediction for use of GPS and NOTAM/AIS checks for use of WAAS). The certificate holder may plan for a conventional approach at the destination and may plan to use a substitute means of navigation based on GPS at the alternate airport, not including substitution for the navigation aid providing lateral guidance on the Final Approach Segment (FAS), unless otherwise authorized. For example, the certificate holder may use GPS to

substitute for an out-of-service Very High Frequency Omni-directional range (VOR) that supports an instrument landing system (ILS) Missed Approach Procedure (MAP) at an alternate airport (unless the procedure is “not authorized” via NOTAM).

(f) The certificate holder may use GPS-based IAP with the powered-lift M/M/S listed in Table 3 according to the conditions and limitations in subparagraphs e(9)(f)(i) through (iv), as indicated in the “Conditions and Limitations” column for each powered-lift M/M/S.

(i) The aircraft must have a TSO-C129() or TSO-C196() compliant navigation system which includes fault detection and exclusion (FDE) capability to utilize GPS-based IAP at either the destination or the alternate (not both). At the alternate, if not equipped with barometric vertical navigation (baro-VNAV) the certificate holder must only plan to use lateral navigation (LNAV) (or circling) minimum descent altitude (height) (MDA(H)).

(ii) The aircraft must have a TSO-C129() or TSO-C196() compliant navigation system that includes FDE capability and is equipped with baro-VNAV to utilize GPS-based IAP at either the destination or the alternate (not both). At the alternate, the certificate holder may plan to use LNAV (or circling) MDA(H) or LNAV/vertical navigation (VNAV) decision altitude (height) (DA(H)) if using baro-VNAV.

(iii) The aircraft must have a TSO-C145() or TSO-C146() compliant navigation system in order to utilize GPS-based IAP at both the destination and an alternate. At the alternate, if not equipped with and using baro-VNAV, the certificate holder must only plan to use LNAV (or circling) MDA(H).

(iv) The aircraft must have a TSO-C145() or TSO-C146() compliant navigation system in order to utilize GPS-based IAP at both the destination and an alternate. At the alternate, the certificate holder may plan to use LNAV (or circling) MDA(H) or LNAV/VNAV DA(H) if using baro-VNAV.

Appendix M. Sample OpSpec P106, IFR Takeoff Minimums: 14 CFR Part 135

a. Standard IFR Takeoff Minima: The certificate holder is authorized to use the IFR takeoff minimums specified in Table 1 subject to the provisions and limitations in this operations specification.

Table 1 – Powered-Lift Standard IFR Takeoff Minima

Condition	Minimums
Two Engines or Less and Takeoff in: <ul style="list-style-type: none"> • Wing-borne Flight Mode, or • Vertical-lift Flight Mode and restricted from conducting copter procedures 	5000 RVR (1 SM)
Two Engines or Less and Takeoff in: <ul style="list-style-type: none"> • Vertical-lift Flight Mode and not restricted from conducting copter procedures 	2400 RVR (½ SM)
More than Two Engines	2400 RVR (½ SM)

(1) Provisions and Limitations:

(a) The operator must use the higher of the published takeoff minimums or the values listed in Table 1 to determine the required IFR takeoff minimums.

(b) RVR reports, when available for a particular runway, must be used for all takeoff operations on that runway.

(c) The Touchdown RVR report, if available, is controlling.

[Select Option 1 to authorize “Lower Than Standard Takeoff Minima”, OR Option 2 to authorize “Lower Than Standard Takeoff Minima” and “Approved Head Up Display (HUD)” OR Option 3 to authorize “Lower Than Standard Takeoff Minima” and “Pilot Assessment of Takeoff Visibility” OR Option 4 to authorize “ALL” three. Selecting an option is not a requirement.]

○ b. Lower Than Standard Takeoff Minima. When takeoff minima are equal to or less than the applicable standard takeoff minima, and the operation is conducted in compliance with the provisions and limitations of this operations specification, the certificate holder is authorized to use the lower than standard minima described below.

(1) Provisions and Limitations. The certificate holder must conduct all operations using the lower than standard takeoff minima described in this operations specification in compliance with Table 2 and the following

Table 2 – Lower Than Standard Takeoff Minima Requirements

Authorized RVR	Minimum Runway Requirements
RVR 1600/500m	High intensity runway lights (HIRL) or Operative runway centerline (CL) lights or Serviceable runway centerline marking (RCLM)
Touchdown (TD) – RVR 1200/350m Midpoint (Mid) – RVR 1000/300m (if installed) Rollout – RVR 1000/300m	Day: HIRL, CL lights or RCLM Night: HIRL or CL Lights
Touchdown (TD) – RVR 1000/300m Midpoint (Mid) – RVR 1000/300m (if installed) Rollout – RVR 1000/300m	CL Lights or HIRL <u>and</u> RCLM
Touchdown (TD) – RVR 600/175m Midpoint (Mid) – RVR 600/175m (if installed) Rollout – RVR 600/175m	HIRL and CL Lights
Touchdown (TD) – RVR 500/150m Midpoint (Mid) – RVR 500/150m (if installed) Rollout – RVR 500/150m	HIRL and CL Lights

(a) When a published takeoff minimum is greater than the applicable standard takeoff minimum and an alternate procedure (such as a minimum climb gradient compatible with airplane capabilities) is not prescribed, the certificate holder must not use a takeoff minimum lower than the published minimum.

(b) Single-engine passenger-carrying operations are not authorized.

(c) The certificate holder is authorized lower than standard takeoff minima for its 14 CFR Part 135 single-engine all-cargo operations in powered-lift aircraft. The requirements of subparagraphs d–g are not applicable to single-engine, all-cargo operations in powered-lift that are certificated for single pilot operation. However, the certificate holder must meet the takeoff performance requirements specified in 14 CFR Part 135 and Part 194.

(d) RVR reports, when available for a particular runway, must be used for all takeoff operations on that runway. All takeoff operations, based on RVR, must use RVR reports from the locations along the runway as follows:

(i) For operations at or above RVR 1600 (500m):

- The TDZ RVR report, if available, is controlling,
- The mid RVR report may be substituted for an unavailable TDZ report.

(ii) For operations below RVR 1600 (500m):

- A minimum of two operative RVR reporting systems are required,
- All available RVR are controlling except a far-end RVR report, which is advisory only.

Note: Extremely long runways (e.g., DEN 16R) utilize four RVR sensors: TDZ, mid, rollout, and far-end. When a fourth far-end RVR value is reported, it is not controlling and is not to be used as one of the two required operative RVR systems.

(e) In circumstances when RCLM or HIRL or CL Lights are not available, visibility or RVV $\frac{1}{4}$ SM may still be used, provided other runway markings or runway lighting provide pilots with adequate visual reference to continuously identify the takeoff surface and maintain directional control throughout the takeoff roll.

(f) Each aircraft must be operated with a flightcrew consisting of at least two pilots. Use of an autopilot in lieu of a required second in command (SIC) is not authorized.

(g) Each pilot station must have independently powered, operational equipment which displays a reliable indication of the following:

- (i) Aircraft pitch and bank information, from a gyroscopic source.
- (ii) Aircraft heading, from a gyroscopic source.
- (iii) Vertical speed.
- (iv) Airspeed.
- (v) Altitude.

(h) Each pilot in command (PIC) must have at least 100 hours flight time as PIC in the specific make and model aircraft used under this authorization and must have satisfactorily completed the certificate holder's approved training program which includes the methods to be used to ensure compliance with the performance limitations.

(i) Any SIC authorized by the certificate holder to manipulate the flight controls during takeoff must have at least 100 hours flight time as a pilot in the specific make and model aircraft and must have satisfactorily completed the certificate holder's approved training program.

(j) For all takeoffs, each aircraft must be operated at a takeoff weight which permits the aircraft to achieve the performance equivalent to the takeoff performance specified in 14 CFR Part 135 and Part 194 or return to, and stop safely on, the takeoff area.

○ b. Lower Than Standard Takeoff Minima. When takeoff minima are equal to or less than the applicable standard takeoff minima, and the operation is conducted in compliance with the provisions and limitations of this operations specification, the certificate holder is authorized to use the lower than standard minima described below.

(1) Provisions and Limitations. The certificate holder must conduct all operations using the lower than standard takeoff minima described in this operations specification in compliance with Table 2 and the following

Table 2 – Lower Than Standard Takeoff Minima Requirements

Authorized RVR	Minimum Runway Requirements
RVR 1600/500m	High intensity runway lights (HIRL) or Operative runway centerline (CL) lights or Serviceable runway centerline marking (RCLM)
Touchdown (TD) – RVR 1200/350m Midpoint (Mid) – RVR 1000/300m (if installed) Rollout – RVR 1000/300m	Day: HIRL, CL lights or RCLM Night: HIRL or CL Lights
Touchdown (TD) – RVR 1000/300m Midpoint (Mid) – RVR 1000/300m (if installed) Rollout – RVR 1000/300m	CL Lights or HIRL <u>and</u> RCLM
Touchdown (TD) – RVR 600/175m Midpoint (Mid) – RVR 600/175m (if installed) Rollout – RVR 600/175m	HIRL and CL Lights
Touchdown (TD) – RVR 500/150m Midpoint (Mid) – RVR 500/150m (if installed) Rollout – RVR 500/150m	HIRL and CL Lights

(a) When a published takeoff minimum is greater than the applicable standard takeoff minimum and an alternate procedure (such as a minimum climb gradient compatible with airplane capabilities) is not prescribed, the certificate holder must not use a takeoff minimum lower than the published minimum.

(b) Single-engine passenger-carrying operations are not authorized.

(c) The certificate holder is authorized lower than standard takeoff minima for its 14 CFR Part 135 single-engine all-cargo operations in powered-lift aircraft. The requirements of subparagraphs d–g are not applicable to single-engine, all-cargo operations in powered-lift that are certificated for single pilot operation. However, the certificate holder must meet the takeoff performance requirements specified in 14 CFR Part 135 and Part 194.

(d) RVR reports, when available for a particular runway, must be used for all takeoff operations on that runway. All takeoff operations, based on RVR, must use RVR reports from the locations along the runway as follows:

(i) For operations at or above RVR 1600 (500m):

- The TDZ RVR report, if available, is controlling,
- The mid RVR report may be substituted for an unavailable TDZ report.

(ii) For operations below RVR 1600 (500m):

- A minimum of two operative RVR reporting systems are required,
- All available RVR are controlling except a far-end RVR report, which is advisory only.

Note: Extremely long runways (e.g., DEN 16R) utilize four RVR sensors: TDZ, mid, rollout, and far-end. When a fourth far-end RVR value is reported, it is not controlling and is not to be used as one of the two required operative RVR systems.

(e) In circumstances when RCLM or HIRL or CL Lights are not available, visibility or RVV $\frac{1}{4}$ SM may still be used, provided other runway markings or runway lighting provide pilots with adequate visual reference to continuously identify the takeoff surface and maintain directional control throughout the takeoff roll.

(f) Each aircraft must be operated with a flightcrew consisting of at least two pilots. Use of an autopilot in lieu of a required second in command (SIC) is not authorized.

(g) Each pilot station must have independently powered, operational equipment which displays a reliable indication of the following:

- (i) Aircraft pitch and bank information, from a gyroscopic source.
- (ii) Aircraft heading, from a gyroscopic source.
- (iii) Vertical speed.
- (iv) Airspeed.
- (v) Altitude.

(h) Each pilot in command (PIC) must have at least 100 hours flight time as PIC in the specific make and model aircraft used under this authorization and must have satisfactorily completed the certificate holder's approved training program which includes the methods to be used to ensure compliance with the performance limitations.

(i) Any SIC authorized by the certificate holder to manipulate the flight controls during takeoff must have at least 100 hours flight time as a pilot in the specific make and model aircraft and must have satisfactorily completed the certificate holder's approved training program.

(j) For all takeoffs, each aircraft must be operated at a takeoff weight which permits the aircraft to achieve the performance equivalent to the takeoff performance specified in 14 CFR Part 135 and Part 194 or return to, and stop safely on, the takeoff area

c. Approved Head-Up Display (HUD) Takeoff Guidance Systems Minima. The certificate holder is authorized to use takeoff minima of RVR 300 (75m) based upon the use of the HUD system installed in the aircraft.

(1) Provisions and Limitations.

(a) The PIC and the SIC must have completed the certificate holder's approved training program for the operations authorized in this operations specification.

- (b) The certificate holder must use the HUD system to conduct the takeoffs.
- (c) HIRL and runway CL lights must be operative.

(d) Front course guidance must be displayed from a localizer that provides CAT III rollout guidance as indicated by a III/E/4 facility classification and landing minima of RVR 300. If the CAT III landing minima is greater than RVR 300 due to a localizer downgrade, these takeoffs are not authorized.

(e) Operations must be conducted to runways that are accessible by taxi routings which have operative taxiway CL lights that meet U.S. or ICAO criteria for CAT III operations; or other taxiway guidance systems approved for these operations. This taxiway guidance requirement is not applicable when operating in conditions at or above the certificate holder’s approved takeoff minima as depicted in Table 2.

○ b. Lower Than Standard Takeoff Minima. When takeoff minima are equal to or less than the applicable standard takeoff minima, and the operation is conducted in compliance with the provisions and limitations of this operations specification, the certificate holder is authorized to use the lower than standard minima described below.

(1) Provisions and Limitations. The certificate holder must conduct all operations using the lower than standard takeoff minima described in this operations specification in compliance with Table 2 and the following:

Table 2 – Lower Than Standard Takeoff Minima Requirements

Authorized RVR	Minimum Runway Requirements
RVR 1600/500m	High intensity runway lights (HIRL) or Operative runway centerline (CL) lights or Serviceable runway centerline marking (RCLM)
Touchdown (TD) – RVR 1200/350m Midpoint (Mid) – RVR 1000/300m (if installed) Rollout – RVR 1000/300m	Day: HIRL, CL lights or RCLM Night: HIRL or CL Lights
Touchdown (TD) – RVR 1000/300m Midpoint (Mid) – RVR 1000/300m (if installed) Rollout – RVR 1000/300m	CL Lights or HIRL <u>and</u> RCLM
Touchdown (TD) – RVR 600/175m Midpoint (Mid) – RVR 600/175m (if installed) Rollout – RVR 600/175m	HIRL and CL Lights
Touchdown (TD) – RVR 500/150m Midpoint (Mid) – RVR 500/150m (if installed) Rollout – RVR 500/150m	HIRL and CL Lights

(a) When a published takeoff minimum is greater than the applicable standard takeoff minimum and an alternate procedure (such as a minimum climb gradient compatible with

airplane capabilities) is not prescribed, the certificate holder must not use a takeoff minimum lower than the published minimum.

(b) Single-engine passenger-carrying operations are not authorized.

(c) The certificate holder is authorized lower than standard takeoff minima for its 14 CFR Part 135 single-engine all-cargo operations in powered-lift aircraft. The requirements of subparagraphs d–g are not applicable to single-engine, all-cargo operations in powered-lift that are certificated for single pilot operation. However, the certificate holder must meet the takeoff performance requirements specified in 14 CFR Part 135 and Part 194.

(d) RVR reports, when available for a particular runway, must be used for all takeoff operations on that runway. All takeoff operations, based on RVR, must use RVR reports from the locations along the runway as follows:

(i) For operations at or above RVR 1600 (500m):

- The TDZ RVR report, if available, is controlling,
- The mid RVR report may be substituted for an unavailable TDZ report.

(ii) For operations below RVR 1600 (500m):

- A minimum of two operative RVR reporting systems are required,
- All available RVR are controlling except a far-end RVR report, which is advisory only.

Note: Extremely long runways (e.g., DEN 16R) utilize four RVR sensors: TDZ, mid, rollout, and far-end. When a fourth far-end RVR value is reported, it is not controlling and is not to be used as one of the two required operative RVR systems.

(e) In circumstances when RCLM or HIRL or CL Lights are not available, visibility or RVV $\frac{1}{4}$ SM may still be used, provided other runway markings or runway lighting provide pilots with adequate visual reference to continuously identify the takeoff surface and maintain directional control throughout the takeoff roll.

(f) Each aircraft must be operated with a flightcrew consisting of at least two pilots. Use of an autopilot in lieu of a required second in command (SIC) is not authorized.

(g) Each pilot station must have independently powered, operational equipment which displays a reliable indication of the following:

- (i) Aircraft pitch and bank information, from a gyroscopic source.
- (ii) Aircraft heading, from a gyroscopic source.
- (iii) Vertical speed.

(iv) Airspeed.

(v) Altitude.

(h) Each pilot in command (PIC) must have at least 100 hours flight time as PIC in the specific make and model aircraft used under this authorization and must have satisfactorily completed the certificate holder's approved training program which includes the methods to be used to ensure compliance with the performance limitations.

(i) Any SIC authorized by the certificate holder to manipulate the flight controls during takeoff must have at least 100 hours flight time as a pilot in the specific make and model aircraft and must have satisfactorily completed the certificate holder's approved training program.

(j) For all takeoffs, each aircraft must be operated at a takeoff weight which permits the aircraft to achieve the performance equivalent to the takeoff performance specified in 14 CFR Part 135 and Part 194 or return to, and stop safely on, the takeoff area.

c. Pilot Assessment of Takeoff Visibility. The certificate holder is authorized to conduct pilot assessments of IFR Lower Than Standard Takeoff Minima when the TD RVR sensor is inoperative, or is not reported, or when actual conditions confirm that reported RVR is in error. ALL the following requirements must be met:

(1) The certificate holder has an approved procedure to determine actual visibility measured in number and type of runway lights that are seen, or markings of known spacing that are visible to the pilot when viewed from the cockpit in the takeoff position.

(2) All flight crewmembers will have completed approved training and checking in the specific procedures used to determine visibilities. Those procedures will cover the following requirements:

(a) How to determine actual visibility measured in number and type of runway lights that are seen, or markings of known spacing that are visible to the pilot when viewed from the flight deck in the takeoff position.

(b) Procedures for RVR assessment, determining that TD RVR sensor reports are in error, and takeoff and flight release coordination.

○ b. Lower Than Standard Takeoff Minima. When takeoff minima are equal to or less than the applicable standard takeoff minima, and the operation is conducted in compliance with the provisions and limitations of this operations specification, the certificate holder is authorized to use the lower than standard minima described below.

(1) Provisions and Limitations. The certificate holder must conduct all operations using the lower than standard takeoff minima described in this operations specification in compliance with Table 2 and the following

Table 2 – Lower Than Standard Takeoff Minima Requirements

Authorized RVR	Minimum Runway Requirements
RVR 1600/500m	High intensity runway lights (HIRL) or Operative runway centerline (CL) lights or Serviceable runway centerline marking (RCLM)
Touchdown (TD) – RVR 1200/350m Midpoint (Mid) – RVR 1000/300m (if installed) Rollout - RVR 1000/300m	Day: HIRL, CL lights or RCLM Night: HIRL or CL Lights
Touchdown (TD) – RVR 1000/300m Midpoint (Mid) – RVR 1000/300m (if installed) Rollout – RVR 1000/300m	CL Lights or HIRL <u>and</u> RCLM
Touchdown (TD) – RVR 600/175m Midpoint (Mid) – RVR 600/175m (if installed) Rollout – RVR 600/175m	HIRL and CL Lights
Touchdown (TD) – RVR 500/150m Midpoint (Mid) – RVR 500/150m (if installed) Rollout – RVR 500/150m	HIRL and CL Lights

(a) When a published takeoff minimum is greater than the applicable standard takeoff minimum and an alternate procedure (such as a minimum climb gradient compatible with airplane capabilities) is not prescribed, the certificate holder must not use a takeoff minimum lower than the published minimum.

(b) Single-engine passenger-carrying operations are not authorized.

(c) The certificate holder is authorized lower than standard takeoff minima for its 14 CFR Part 135 single-engine all-cargo operations in powered-lift aircraft. The requirements of subparagraphs d–g are not applicable to single-engine, all-cargo operations in powered-lift that are certificated for single pilot operation. However, the certificate holder must meet the takeoff performance requirements specified in 14 CFR Part 135 and Part 194.

(d) RVR reports, when available for a particular runway, must be used for all takeoff operations on that runway. All takeoff operations, based on RVR, must use RVR reports from the locations along the runway as follows:

(i) For operations at or above RVR 1600 (500m):

- The TDZ RVR report, if available, is controlling,
- The mid RVR report may be substituted for an unavailable TDZ report.

(ii) For operations below RVR 1600 (500m):

- A minimum of two operative RVR reporting systems are required,
- All available RVR are controlling except a far-end RVR report, which is advisory only.

Note: Extremely long runways (e.g., DEN 16R) utilize four RVR sensors: TDZ, mid, rollout, and far-end. When a fourth far-end RVR value is reported, it is not controlling and is not to be used as one of the two required operative RVR systems.

(e) In circumstances when RCLM or HIRL or CL Lights are not available, visibility or RVV $\frac{1}{4}$ SM may still be used, provided other runway markings or runway lighting provide pilots with adequate visual reference to continuously identify the takeoff surface and maintain directional control throughout the takeoff roll.

(f) Each aircraft must be operated with a flightcrew consisting of at least two pilots. Use of an autopilot in lieu of a required second in command (SIC) is not authorized.

(g) Each pilot station must have independently powered, operational equipment which displays a reliable indication of the following:

- (i) Aircraft pitch and bank information, from a gyroscopic source.
- (ii) Aircraft heading, from a gyroscopic source.
- (iii) Vertical speed.
- (iv) Airspeed.
- (v) Altitude.

(h) Each pilot in command (PIC) must have at least 100 hours flight time as PIC in the specific make and model aircraft used under this authorization and must have satisfactorily completed the certificate holder's approved training program which includes the methods to be used to ensure compliance with the performance limitations.

(i) Any SIC authorized by the certificate holder to manipulate the flight controls during takeoff must have at least 100 hours flight time as a pilot in the specific make and model aircraft and must have satisfactorily completed the certificate holder's approved training program.

(j) For all takeoffs, each aircraft must be operated at a takeoff weight which permits the aircraft to achieve the performance equivalent to the takeoff performance specified in 14 CFR Part 135 and Part 194 or return to, and stop safely on, the takeoff area.

c. Approved Head Up Display (HUD) Takeoff Guidance Systems Minima. The certificate holder is authorized to use takeoff minima of RVR 300 (75m) based upon the use of the HUD system installed in the aircraft.

(1) Provisions and Limitations.

(a) The PIC and the SIC must have completed the certificate holder's approved training program for the operations authorized in this operations specification.

- (b) The certificate holder must use the HUD system to conduct the takeoffs.
- (c) HIRL and runway CL lights must be operative.

(d) Front course guidance must be displayed from a localizer that provides CAT III rollout guidance as indicated by a III/E/4 facility classification and landing minima of RVR 300. If the CAT III landing minima is greater than RVR 300 due to a localizer downgrade, these takeoffs are not authorized.

(e) Operations must be conducted to runways that are accessible by taxi routings which have operative taxiway CL lights that meet U.S. or ICAO criteria for CAT III operations; or other taxiway guidance systems approved for these operations. This taxiway guidance requirement is not applicable when operating in conditions at or above the certificate holder's approved takeoff minima as depicted in Table 2.

d. Pilot Assessment of Takeoff Visibility. The certificate holder is authorized to conduct pilot assessments of IFR Lower Than Standard Takeoff Minima when the TD RVR sensor is inoperative, or is not reported, or when actual conditions confirm that reported RVR is in error. ALL the following requirements must be met:

(1) The certificate holder has an approved procedure to determine actual visibility measured in number and type of runway lights that are seen, or markings of known spacing that are visible to the pilot when viewed from the cockpit in the takeoff position.

(2) All flight crewmembers will have completed approved training and checking in the specific procedures used to determine visibilities. Those procedures will cover the following requirements:

(a) How to determine actual visibility measured in number and type of runway lights that are seen, or markings of known spacing that are visible to the pilot when viewed from the flight deck in the takeoff position.

(b) Procedures for RVR assessment, determining that TD RVR sensor reports are in error, and takeoff and flight release coordination.

Appendix N. Sample OpSpec P108, Category II and Category III Instrument Approach and Landing Operations: 14 CFR Part 135

a. The certificate holder is authorized to conduct [Category II/Category II and Category III] instrument approach and landing operations as authorized below using the limitations, provisions, procedures, and minimums specified in this paragraph.

b. Authorized Approach and Landing Minimums. The certificate holder is authorized to conduct the operations in subparagraph a using TDZ, mid, and rollout RVR minimums no lower than those prescribed for the specific make, model, and series (M/M/S) of aircraft listed below in Table 1 for CAT II operations and, if applicable, Table 2 for CAT III operations.

(1) For CAT II operations, TDZ RVR reports must be no lower than the approach chart minimums.

[Select the applicable text from the following options. If CAT III operations are authorized, select option 1; if CAT III operations are not authorized, select option 2. An option must be selected.]

(2) For all CAT III operations, TDZ and mid RVR reports must be no lower than the approach chart minimums.

OR

(2) CAT III operations are not authorized.

(3) Operations must be conducted in accordance with RVR report requirements in subparagraph d.

Table 1 – CAT II Aircraft Systems and Landing Minimums

Powered-Lift M/M/S	Approach/ Landing System*	DH	TDZ/Mid/RO RVR	Operational Equipment and Limitations
	Autopilot	150 DH	1600/600/300	
	HUD	100 DH	1200/600/300	
	FP HUD		1000/600/300	
	Autoland			

Note: * The term HUD assumes Manual HUD, HUD = CAT II certified Head-Up Display; FP HUD = CAT III certified Head-Up Display; Autopilot = autopilot use to DH followed by a manual landing; NA = Not Applicable.

Table 2 – CAT III Aircraft Systems and Landing Minimums

Powered-Lift M/M/S	Approach/ Landing System*	Rollout System*	DH/AH	TDZ/Mid/RO RVR	Operational Equipment and Limitations
	FP HUD	None	50 DH	700/700/300	
	FP Autoland	FP	30 DH	600/600/300	
	FO Autoland	FO	200 AH	600/400/300	
	FP Hybrid		100 AH	400/400/300	
			50 AH	300/300/300	

Note: * FP HUD = CAT III certified Head-Up Display; FP = Fail Passive Landing or Rollout Control System; FO = Fail Operational Landing or Rollout Control System; FP Hybrid = FP Autoland and FP HUD used together as a Hybrid Landing system; NA = Not Applicable.

c. Required Airborne Equipment. The flight instruments, radio navigation equipment, and other airborne systems required by the applicable section of 14 CFR and the FAA-approved AFM for the conduct of the operations authorized above in subparagraph a must be installed and operational. Any additional airborne equipment that is required must be operational and listed in Table 1 and, if applicable, Table 2.

d. Required RVR Reports. The certificate holder is authorized to conduct the operations described above in Table 1 and, if applicable, Table 2, if the following requirements for RVR reports are met. Only RVR reports for the runway of intended landing may be used.

(1) For all CAT II operations:

(a) TDZ, mid, and rollout RVR reports are controlling. Far end RVR reports are advisory.

(b) The TDZ RVR report is required.

(c) The mid RVR report is not required.

(d) The rollout RVR report is required for all operations at 1200 RVR and below, except as specified in subparagraph d(1)(e).

(e) If the rollout RVR report is unavailable, a mid or far end RVR report may be substituted. Mid RVR reports substituted for unavailable rollout reports must be 600 RVR or greater; far end reports substituted for unavailable rollout reports must be 300 RVR or greater.

(f) If only the TDZ RVR report is available, it must be at least 1400 RVR.

[Select the applicable text from the following radio-button options. If CAT III operations are authorized, select option 1; if CAT III operations are not authorized, select option 2. An option must be selected.]

○ (2) For all CAT III operations:

(a) TDZ, mid, and rollout RVR reports are controlling. Far end RVR reports are advisory.

(b) For operations using an FP landing system with an FP or FO rollout system, TDZ and either the mid or rollout RVR report are required.

(c) For operations using an FO landing system with an FP or FO rollout system, any two of the controlling RVR reports are required.

(d) For operations using a FP or FO landing system with no rollout system installed, the TDZ and mid RVR reports are required.

(e) For CAT III runways with no MID RVR sensor installed, both the TDZ and rollout RVR reports are required. In such cases, the rollout RVR report must be substituted for the missing MID RVR report.

(f) Where a far end RVR sensor is installed, the far end RVR report may be substituted for the rollout RVR report if that is not available.

(g) If the landing or rollout system degrades from FO to FP or the rollout system fails, the certificate holder is authorized to conduct operations in accordance with its MEL and AFM, using minimums no lower than those shown below (subparagraphs d(2)(g)(i)–(iii)) corresponding to the type of landing and/or rollout systems operable after the failure.

(i) Rollout system fails: Use landing minima no lower than 600/600/300 RVR.

(ii) FP landing system operable with FP or FO rollout system: Use landing minima no lower than 600/400/300 RVR.

(iii) FO landing system with FP rollout system operable: Use landing minima no lower than 400/400/300 RVR.

OR

○ (2) CAT III operations are not authorized.

e. Pilot Qualifications and Approved Training Programs. The minimums prescribed in this operations specification are authorized only for those pilots in command (PIC) and seconds in command (SIC) who have completed the certificate holder's approved training program and who are qualified for the operations authorized above in subparagraph a by one of the certificate holder's check pilots or an FAA inspector.

f. CAT II Operations. The certificate holder is authorized to conduct the subcategories of CAT II operations listed in Table 3 below in accordance with the other provisions of this OpSpec.

Table 3 – CAT II Subcategories Authorized

CAT II Operation	TDZ/MID/RO RVR	Limitations
The certificate holder is authorized to conduct standard CAT II operations using autopilot or HUD to DH with a manually flown landing.	1600/600/300 1200/600/300	One of the CAT II approach systems listed in Table 1 must be used to the approach procedure DH.
The certificate holder is authorized to conduct standard CAT II operations with FP or FO CAT III Landing System.	1200/600/300 1000/600/300	Requires the use of an FP or FO Autoland or FP HUD listed in Table 1 to be flown to touchdown.
The certificate holder is authorized to conduct published SA CAT II instrument approaches and U.S. based standard CAT II instrument approaches when TDZ and/or centerline (CL) lighting are inoperative or the ALSF approach lights are operating in an SSALR or SSALS configuration	1200/600/300	Requires the use of an FP or FO Autoland or FP HUD listed in Table 1 to be flown to touchdown.

g. Operating Limitations. The certificate holder must not begin the Final Approach Segment (FAS) of an IAP authorized in subparagraph a unless the latest controlling RVR reports for the landing runway are at or above the minimums authorized for the operation being conducted and all of the following conditions are met:

(1) The following ground-based equipment must be operational:

(a) Localizer (LOC) and glideslope (GS).

(b) Outer marker or DME facility used to define the FAF unless a published waypoint or minimum GS intercept altitude fix is used in lieu of an outer marker or DME fix.

(c) For CAT II Radar Altimeter minimums Not Authorized (RA NA)-only, an inner marker to identify the DH.

(d) Runway lights: For standard CAT II and CAT III, TDZ lights, centerline (CL) lights, High Intensity Runway Lights (HIRL), or foreign equivalent. For SA CAT II, High Intensity Runway Lights (HIRL).

(e) Approach lights: For standard CAT II, Approach Lighting System with Sequenced Flashing Lights (ALSF), simplified short approach lighting system with runway alignment indicator lights (SSALR), simplified short approach lighting system (SSALS), or foreign equivalent. Sequence flashing lights (SFL) may be inoperative. For SA CAT II, medium intensity approach lighting system with runway alignment indicator lights (MALSR) is also acceptable. For CAT III, the approach lighting system may be inoperative.

(2) The crosswind component on the landing runway is less than the AFM crosswind limitations, or 15 knots or less, whichever is more restrictive.

(3) Once established on the FAS, all operations conducted using automatic rollout systems or FP HUD rollout guidance may continue if any RVR report decreases below the authorized minimums.

(4) The certificate holder must not conduct landing operations to any runway using autoland or FP HUD systems listed above in Table 1 or, if applicable, Table 2, unless the certificate holder determines that the flight control guidance system being used provides safe automatically (autoland) or manually (FP HUD) flown approaches and landings to be conducted at that runway.

(5) All CAT III and CAT II to 1000 RVR landing and subsequent ground operations must be conducted in accordance with the airport's low visibility operations plan (e.g., U.S. Surface Movement Guidance and Control System (SMGCS), European Aviation Safety Agency (EASA), or ICAO criteria for CAT III operations).

(6) When conducting a CAT II or CAT III operation when the official weather observation is at or above 800 foot ceiling and 2 statute miles visibility, the crew must advise ATS of their intent and request ILS critical area protection. When conducting a CAT II or CAT III operation when the official weather observation is at or above standard CAT I minima, the crew must remain alert to any unsuitable system performance caused by a preceding arrival or departure aircraft passing through or over the ILS critical area. The operation must be discontinued if the crew is informed that ILS Critical Area protection cannot be provided, or unsuitable system performance is encountered.

h. Missed Approach Requirements. A missed approach must be initiated when any of the following conditions exist:

(1) For all CAT II operations:

(a) After passing the FAF, the approach guidance system or any other airborne equipment required for the CAT II operation being conducted becomes inoperative or is disengaged.

(b) Before arriving at DH, any of the required elements of the CAT II ground system becomes inoperative.

(2) For CAT II operations without a CAT III FP or FO landing system:

(a) At the DH, if the aircraft is not in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers, and where that descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing.

(b) At the DH, if at least one of the following visual references for the intended runway is not distinctly visible and identifiable to the pilot:

(i) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable.

(ii) The threshold.

(iii) The threshold markings.

(iv) The threshold lights.

(v) The touchdown zone or touchdown zone markings.

(vi) The touchdown zone lights.

(c) If, after passing the DH, these requirements are not continuously met.

(3) For CAT II operations with a CAT III FP or FO landing system:

(a) At the DH, if the pilot has not identified the required visual references with the TDZ or TDZ lights to verify that the aircraft will touchdown in the TDZ.

Note: In cases where the CAT II DH is higher than 100 feet above TDZE, a descent from the DH to 100 feet may be made with reference to the approach light system, except that the pilot may not descend below 100 feet above TDZE without identifying the required visual references with the TDZ or TDZ lights to verify that the aircraft will touchdown in the TDZ.

(b) If, after passing the DH, these requirements are not continuously met.

Note: If the certificate holder is authorized enhanced flight vision system (EFVS) operations under 14 CFR part 91, § 91.176(a), the certificate holder may use the EFVS to meet the visual reference requirements of subparagraphs h(2)(a) and (b) above but must still comply with all RVR and other limitations of this CAT II authorization.

[Select the applicable text from the following options. If CAT III operations are authorized, select option 1; if CAT III operations are not authorized, select option 2. An option must be selected.]

○ (4) For all CAT III operations:

(a) If the pilot determines that touchdown cannot be safely accomplished within the TDZ.

(b) When any of the required runway lighting elements becomes inoperative prior to arriving at DH or alert height (AH), or prior to touchdown for aircrafts without a rollout system.

(c) When any GS or LOC failure occurs prior to touchdown.

(d) The crosswind component at touchdown is greater than 15 knots or greater than the AFM’s crosswind limitations, whichever is more restrictive.

(e) When a failure in an FP landing system occurs prior to touchdown, or a failure occurs in an FO system before reaching the AH.

(f) For CAT III operations without a rollout control system, no later than DH, if any controlling RVR is reported below the lowest authorized minimums.

(g) For CAT III operations using an FP landing system without a rollout control system or aircrafts using an FP landing system and FP rollout control system:

(i) At the DH, if the pilot has not identified the required visual references with the TDZ or TDZ lights to verify that the aircraft will touch down in the TDZ.

(ii) If, after passing the DH, visual reference is lost or a reduction in visual reference occurs, which prevents the pilot from continuing to verify that the aircraft will touch down in the TDZ.

Note: If the certificate holder is authorized EFVS operations under § 91.176(a), the certificate holder may use the EFVS to meet the visual reference requirements of subparagraphs h(4)(g)(i) and (ii) above, but must still comply with all RVR and other limitations of this CAT III authorization.

OR

- (4) CAT III operations are not authorized.

i. Runway Restrictions.

(1) The certificate holder is authorized to conduct the operations in subparagraph a to runways with a published glideslope angle other than 3.0 degrees using autoland or FP HUD landing systems certified for the use at the published non-standard glideslope angle.

(2) The certificate holder is authorized to conduct the operations in subparagraph a using autoland or FP HUD landing systems at the restricted irregular pre-threshold terrain U.S. facilities listed in Table 4 below.

Table 4 – Restricted/Nonstandard U.S. Facilities

Approach Category, Airport Name/Identifier, Runway(s)	Limitations

j. Maintenance. The certificate holder must maintain the aircrafts and equipment listed above in Table 1 and, if applicable, Table 2, in accordance with its approved Lower Landing Minimums (LLM) maintenance or inspection program.

k. Engine Inoperative or Critical Loss of Thrust Operations. The certificate holder is approved for operations authorized in subparagraph a with an inoperative engine using the aircrafts and limitations specified in Table 5 below.

Table 5 – Engine Inoperative or Critical Loss of Thrust Operations

Powered-Lift M/M/S	Operational Authorization	Limitations

[Hybrid CAT III Operations. Select the following text if applicable.]

1. Hybrid CAT III Operations. The certificate holder is authorized to conduct CAT III operations using Autoland and Head-Up-Guidance Systems (HGS) together as a Hybrid Landing system. All Hybrid CAT III operations must be conducted in accordance with the approved Hybrid Landing system training programs, operating manuals, and maintenance programs. CAT III Hybrid operations may be conducted to minimums as low as TDZ RVR 400 (125m), Mid RVR 400 (125m) and Rollout RVR 300 (75m), in accordance with subparagraph b.

Appendix O. Sample OpSpec P110, Automatic Landing Operations Other Than Categories II and III: 14 CFR Part 135

- a. The certificate holder is authorized to conduct automatic landing operations in accordance with 14 CFR Part 135, § 135.93(f) and Part 194, § 194.306(c) and the provisions and limitations of this operations specification.
- b. Authorized Powered-lift and Automatic Flight Control Guidance Systems. The certificate holder is authorized to conduct automatic landing operations using the following powered-lift aircraft, automatic flight control guidance systems, and instrument approach procedure types as listed in Table 1 below.

Table 1 – Authorized Powered-Lift and Automatic Flight Control Guidance Systems

Powered-lift M/M/S	Automatic Flight Control Guidance Systems	
	Manufacturer	Model

c. Provisions and Limitations.

(1) The certificate holder must conduct all operations authorized by this paragraph in accordance with applicable Section of Title 14 Code of Federal Regulations (14 CFR) and the airworthiness certification basis of the automatic flight control guidance system used.

(2) The certificate holder must not conduct automatic landings to any runway unless the certificate holder determines the flight control guidance and instrument approach guidance systems being used permit safe automatically flown landings to be conducted at that runway.

(3) The crew must advise Air Traffic Services (ATS) of their intent to conduct an automatic landing

(4) Automatic landings operations conducted using an Instrument Landing System (ILS) instrument approach:

(a) ILS Critical Area protection must be requested from ATS if the official weather observation is above 800 feet ceiling and 2 statute miles visibility.

(b) The crew must remain alert to any unsuitable system performance caused by a preceding arrival or departure aircraft passing through or over the ILS critical area whenever the weather is at or above 200 feet ceiling and 2000 RVR.

(c) The operation must be discontinued if the crew is informed, or they cannot verify, that ILS Critical Area is protected.

(5) The following additional limitations must be observed as applicable:

(a) When automatic landings are conducted using other than a CAT II or III IAP at a valid CAT II or III facility:

(i) The airport must have an operating air traffic control tower.

(b) When automatic landings are conducted in conjunction with a CAT II or III ILS IAP and the official weather observation is at or above 200 feet ceiling and 2000 RVR but below 800 feet ceiling and 2 statute miles visibility.

(i) The certificate holder must be issued paragraph P108 Category II and Category III Instrument Approach and Landing Operations and conduct the operation in accordance with the provisions and limitations of that paragraph.

(c) When automatic landings are conducted at other than a valid CAT II or III facility.

(i) The certificate holder must conduct analysis to determine that the flight control guidance and instrument approach guidance systems being used permit safe automatically flown landings to be conducted at that runway. The analysis should include but not be limited to ILS classification code where applicable, suitable glideslope angle, threshold crossing height, runway's slope, and pre-threshold terrain. The certificate holder must document this analysis and the determination for each runway considered.

(ii) The runway and associated instrument procedure must have no outstanding NOTAMs or chart notes that would preclude automatic landing operations (e.g., "Localizer unusable inside the threshold," or "Glideslope unusable below xxx feet").

(iii) The airport must have an operating air traffic control tower.

(iv) Automatic landing may only be conducted using a localizer signal that conforms to the Facility Performance structure tolerances to point D or E as described in FAA Order 6750.24, as revised, and the applicable FAA Chart Supplement.

(6) The certificate holder must not conduct any operations authorized by this paragraph unless the certificate holder's approved training program provides training and proficiency checks in the equipment and procedures to be used.

(7) Except when automatic landings are performed under the supervision of a properly qualified check airman, any pilot certified by the certificate holder to conduct automatic landings must be qualified in accordance with the certificate holder's approved training program.

Appendix P. Sample OpSpec P112, Instrument Approach Operations Using an Area Navigation System: 14 CFR Part 135

a. The certificate holder is authorized to conduct instrument flight rules (IFR) Area Navigation (RNAV) 1 and/or Required Navigation Performance (RNP) 1 instrument departure procedures (DP), RNAV 1 and/or RNP 1 Standard Terminal Arrival Routes (STAR) published in accordance with 14 CFR Part 97, and/or tailored arrivals (TA) using approved RNAV systems to the airports and runways approved for such operations, and must conduct all such operations in accordance with the provisions and limitations of these operations specifications.

b. Bundling and Authorized Aircraft/Equipment. In Table 1 below, listed under Navigation Specification(s) are seven bundled options starting with Advanced RNP (A-RNP), RNP 1, TA, and RNAV 1; A-RNP, RNP 1, and RNAV 1. Lesser bundles are also available with the following options: RNP 1, RF, TA, and RNAV 1; RNP 1, RF, and RNAV 1; RNP 1, TA, and RNAV 1; RNP 1 and RNAV 1; or RNAV 1 only. As a minimum for A-RNP, the certificate holder must be qualified for the following advanced capabilities: scalability, Radius to Fix (RF), and parallel offset. Additionally, the A-RNP certificate holder must have adequate continuity for the operation.

[Select or enter data in Table 1: IF the certificate holder’s powered-lift aircraft are properly equipped, and its flightcrews appropriately trained, Select “A-RNP/RNP 1/TA/RNAV 1” or “A-RNP, RNP 1, and RNAV-1” under “Navigation Specification(s)” column, for Advanced-RNP (A-RNP) authorization. [Note: As a minimum for A-RNP, you must be qualified for the following advanced capabilities: scalability, RF, and parallel offset; additionally, the A-RNP certificate holder must have adequate continuity for the operation. / Select Powered-Lift MMS in col.1 for A-RNP authzd]; If you are not authorized for A-RNP, Select any of the lesser bundles from the list as applicable without the A-RNP component, and the powered-lift MMS authorized.in Col.1.]

Table 1 – Powered-Lift, RNAV Equipment, Navigation Specification(s)

Powered-Lift M/M/S	Compliant RNAV System(s) and Software			Navigation Specification(s)	Additional Capabilities	Limitations and Provisions
	Manufacturer	Model/ HW Part #	Software Part/ Ver. #			

c. Additional Capabilities. Fixed Radius Transition (FRT) and/or Time of Arrival Control (TOAC) may be selected in Table 1 under Additional Capabilities for those who qualify for A-RNP.

d. The certificate holder must maintain the aircraft and equipment listed in Table 1 above using an established maintenance program that addresses these RNAV requirements.

e. Provisions and Limitations:

(1) Flightcrews must not conduct operations approved by this operations specification until qualified in accordance with the certificate holder's approved training program for RNAV 1 and/or RNP 1 DPs, STARs operations, and/or TAs.

(2) A pilot-in-command must not conduct operations authorized by this paragraph until that pilot has successfully completed the certificate holder's approved training program. The pilot must be certified as qualified (by one of the certificate holder's check airmen or an FAA inspector) for instrument approach operations using the installed area navigation system.

(3) During the initial 6 months of operation with a particular aircraft and area navigation system combination, the certificate holder will not use IFR approach and landing minimums, for that aircraft system combination, lower than 200 feet and 1/2 statute mile above the lowest MDA/DH and visibility/RVR minimums authorized for instrument approaches and landings at that airport using area navigation systems.

f. For Part 135 certificate holders that have no manuals, the approved procedures required for this authorization are as follows:

[Part 135 certificate holders with no manuals, enter approved procedures required for this authorization.]

[Text Box]

**Appendix Q. Sample OpSpec P113, Terminal Area IFR Operations in Class G
Airspace and/or at Airports Without an Operating Control Tower—Nonscheduled
Passenger and All-Cargo Operations: 14 CFR Part 135**

a. The certificate holder is authorized to conduct nonscheduled passenger and all-cargo (scheduled and nonscheduled) terminal area IFR powered-lift operations in Class G airspace and/or at airports without an operating control tower specified in accordance with the provisions and limitations of this paragraph. The certificate holder must not conduct any other terminal area IFR operations under this operations specification.

b. Provisions and Limitations:

(1) The airport is served by an authorized instrument approach procedure.

(2) The airport has an approved source of weather or in accordance with the provisions for conducting the flight under the eligible on-demand authorization.

(3) The airport has a suitable means for the pilot-in-command to acquire air traffic advisories and the status of airport services and facilities.

(4) The facilities and services necessary to safely conduct IFR operations are available and operational at the time of the operation.

(5) Applicable charts for crewmember use are available.

c. The certificate holder is authorized to designate and use an alternate or diversionary airport which will involve terminal area IFR operations in Class G airspace provided that, at the time of any operation to that alternate or diversionary airport, the certificate holder determines that the provisions and limitations specified in subparagraphs b(1) through (5) are met.

Appendix R. Sample OpSpec P114, Powered-Lift Authorizations, Provisions, and Limitations into Certain Airports: 14 CFR Part 135

- a. The certificate holder is authorized to conduct powered-lift operations into the specific airports listed in Table 1 below.
- b. The certificate holder must conduct all operations at these airports in accordance with 14 CFR Part 135, § 135.229, Airport Requirements, and the provisions and limitations specified in Table 1 below.

Table 1 – Airports and Special Provisions

Airport ICAO Identifier	Powered-lift M/M/S	Special Provisions and Limitations

Appendix S. Sample OpSpec P118, Circle-to-Land Operations: 14 CFR Part 135

- a. Except as provided in this paragraph, the certificate holder must not use any Category I IFR landing minimum lower than that prescribed by any applicable published instrument approach procedure. The IFR landing minimums prescribed in this paragraph are the lowest authorized (other than Airborne Radar approaches) for use at any airport. The certificate holder is authorized to conduct circling maneuvers using the following instrument approach landing minimums.
- b. Circling Maneuvers. The certificate holder must not conduct circling maneuvers when the ceiling is less than 1000 feet or the visibility is less than 3 statute miles unless the pilot-in-command has satisfactorily completed an approved training program for the circling maneuver or satisfactorily completed a flight check for the circling maneuver. The certificate holder must not use a speed during the circling maneuver which is slower than the instrument minimum flight speed as specified in the FAA-approved Aircraft Flight Manual (AFM). When conducting an instrument approach procedure which requires a circling maneuver to the runway of intended landing, the certificate holder must not use a landing minimum lower than the minimum prescribed for the applicable circling maneuver or a landing minimum lower than specified in Table 1 below, whichever is higher. The lowest authorized IFR landing minimum for instrument approaches which require a circling maneuver to the runway of intended landing must be determined for a particular aircraft by using the speed category appropriate to the highest speed used during the circling maneuver.

Table 1 – IFR Landing Minima For Circling Maneuver

Speed Category	Height Above Airport (HAA)	Visibility in statute miles
less than 91 kts	350	1
91 to 120 kts	450	1
121 to 140 kts	450	1 1/2
141 to 165 kts	550	2
above 165 kts	1000	3

- c. Special Limitations and Provisions for Instrument Approach Procedures at Foreign Airports. If the certificate holder is authorized operations at foreign airports, the following criteria apply.

(1) Foreign approach lighting systems equivalent to U.S. standards are authorized for both precision and nonprecision approaches. Sequenced flashing lights are not required when determining the equivalence of a foreign lighting system to U.S. standards.

(2) For straight-in landing minimums at foreign airports where a Minimum Descent Altitude (MDA) or Decision Height (DH) is not specified, the lowest authorized MDA or DH must be obtained as follows:

(a) When an obstruction clearance limit (OCL) is specified, the authorized MDA or DH is the sum of the OCL and the touchdown zone elevation (TDZE). If the TDZE for a particular runway is not available, threshold elevation must be used. If threshold elevation is not available,

airport elevation must be used. For nonprecision approaches, the MDA may be rounded to the next higher interval of 10 foot increment.

(b) When an obstacle clearance altitude (OCA)/obstacle clearance height (OCH) is specified, the authorized MDA or DH is equal to the OCA/OCH. For nonprecision approaches, the authorized MDA may be expressed in intervals of 10 feet.

(c) The Height Above Touchdown (HAT) or Height Above Airport (HAA) used for nonprecision and precision approaches must not be below those specified in subparagraph c(2)a and c(2)b.

(3) When only an OCL or an OCA/OCH is specified, visibility and/or RVR minimums appropriate to the authorized HAA/HAT values determined in accordance with subparagraph c(2) above must be established in accordance with criteria prescribed by U.S. Terminal Instrument Procedures (TERPS).

(4) When conducting an instrument approach procedure outside the United States, the certificate holder must not operate an aircraft below the prescribed MDA or continue an approach procedure below the DH, unless the aircraft is in a position from which a normal approach to the runway of intended landing can be made and at least one of the following visual references is clearly visible to the pilot:

- (a) Runway, runway markings, or runway lights.
- (b) Approach light system (in accordance with 14 CFR Part 91, § 91.175(c)(3)(i)).
- (c) Threshold, threshold markings, or threshold lights.
- (d) Touchdown zone, touchdown zone markings, or touchdown zone lights.
- (e) Visual glide path indicator (such as, VASI, PAPI).
- (f) Any other feature which clearly identifies the landing surface.

**Appendix T. Sample OpSpec P119, Category I Contact Approach Procedures:
14 CFR Part 135**

- a. Contact Approaches. The certificate holder is authorized to conduct contact approaches subject to the provisions and limitations in this operations specification.
- b. Provisions and Limitations.
- (1) PIC has satisfactorily completed an approved training program for contact approaches.
 - (2) Contact approach is conducted to an airport with an approved instrument approach procedure for that airport.
 - (3) The flight remains under instrument flight rules (IFR) and is authorized by air traffic control (ATC) to conduct a contact approach.
 - (4) The reported Runway Visual Range (RVR)/visibility for the runway of intended landing is at or above the authorized IFR minimum for the Category I nonprecision approach established for that runway or RVR 5000 or 1 Statute Mile (SM), whichever is higher.
 - (5) The flight is operating clear of clouds and can remain clear of clouds throughout the contact approach. The flight visibility must be sufficient for the pilot to see and avoid all obstacles and safely maneuver the aircraft to the landing runway using external visual references.
 - (6) The flight does not descend below the Minimum En route Altitude (MEA)/Minimum Sector Altitude (MSA), Minimum Vectoring Altitude (MVA), or the Final Approach Fix (FAF) altitude, as appropriate, until:
 - (a) The flight is established on the instrument approach procedure, operating below the reported ceiling, and the pilot has identified sufficient prominent landmarks to safely navigate the aircraft to the airport, or
 - (b) The flight is operating below any cloud base which constitutes a ceiling, the airport is in sight, and the pilot can maintain visual contact with the airport throughout the maneuver.
 - (c) The flight does not descend below the highest circling Minimum Descent Altitude (MDA) prescribed for the runway of intended landing until the aircraft is in a position from which a descent to touchdown can be made at a normal rate of descent using normal maneuvers.
- c. Special Limitations and Provisions for Instrument Approach Procedures at Foreign Airports. If the certificate holder is authorized operations at foreign airports, the following criteria apply.
- (1) Foreign approach lighting systems equivalent to U.S. standards are authorized for both precision and nonprecision approaches. Sequenced flashing lights are not required when determining the equivalence of a foreign lighting system to U.S. standards.
 - (2) For straight-in landing minimums at foreign airports where an MDA or DH (Decision Height) is not specified, the lowest authorized MDA or DH must be obtained as follows:

(a) When an obstruction clearance limit (OCL) is specified, the authorized MDA or DH is the sum of the OCL and the touchdown zone elevation (TDZE). If the TDZE for a particular runway is not available, threshold elevation must be used. If threshold elevation is not available, airport elevation must be used. For nonprecision approaches, the MDA may be rounded to the next higher interval of 10-foot increment.

(b) When an obstacle clearance altitude (OCA)/obstacle clearance height (OCH) is specified, the authorized MDA or DH is equal to the OCA/OCH. For nonprecision approaches, the authorized MDA may be expressed in intervals of 10 feet.

(c) The Height Above Touchdown (HAT) or Height Above Airport (HAA) used for nonprecision and precision approaches must not be below those specified in subparagraph a and b.

(3) When only an OCL or an OCA/OCH is specified, visibility and/or RVR minimums appropriate to the authorized HAA/HAT values determined in accordance with subparagraph c(2) above will be established in accordance with the criteria prescribed by U.S. Terminal Instrument Procedures (TERPS).

(4) When conducting an instrument approach procedure outside the United States, the certificate holder must not operate an aircraft below the prescribed MDA or continue an approach procedure below the DH, unless the aircraft is in a position from which a normal approach to the runway of intended landing can be made and at least one of the following visual references is clearly visible to the pilot:

- (a) Runway, runway markings, or runway lights.
- (b) Approach light system (in accordance with 14 CFR Part 91, § 91.175(c)(3)(i)).
- (c) Threshold, threshold markings, or threshold lights.
- (d) Touchdown zone, touchdown zone markings, or touchdown zone lights.
- (e) Visual glide path indicator (such as VASI, PAPI).
- (f) Any other feature which clearly identifies the landing surface.

Appendix U. Sample OpSpec P120, Airports Authorized for Scheduled Operations: 14 CFR Part 135

a. Definition. An airport is a location from which aircraft flight operations take place, regardless of whether they involve air cargo, passengers, or neither, and regardless of whether it is for public or private use.

b. Airports Authorized for Scheduled Operations. The certificate holder is authorized to conduct scheduled passenger and cargo operations between the regular airports listed in Table 1 below.

(1) The following definitions apply:

(a) Regular Airport (R). An airport used by a certificate holder in scheduled operations and listed in its operations specification.

(b) Alternate Airport (A). An airport at which an aircraft may land if a landing at the intended airport becomes inadvisable.

(2) The certificate holder may use any regular airport listed in Table 1 of this operations specification as an alternate airport, provided it is authorized for the type of aircraft being used.

(3) The certificate holder may not use any airport as an alternate airport unless it is authorized for the type of aircraft being used and meets the alternate airport requirements contained in 14 CFR Part 135 subparts D and I and this operations specification.

Table 1 – Authorized Airports

Airport Name	Airport Designation (‘R’ or ‘A’)	Powered-lift

Appendix V. Sample OpSpec P121, Terminal Area IFR Powered-Lift Operations in Class G Airspace—Scheduled Passenger Operations: 14 CFR Part 135

a. The certificate holder is authorized to conduct the following terminal area IFR powered-lift operations specified in accordance with the limitations and provisions of this paragraph. The certificate holder must not conduct any other terminal area IFR operations under this operations specification.

b. The certificate holder is authorized to conduct scheduled passenger terminal area IFR powered-lift operations in Class G airspace provided that the certificate holder determines that:

(1) The airport is served by an authorized instrument approach procedure.

(2) The airport has an approved source of weather.

(3) The airport has a suitable means for the pilot-in-command to acquire air traffic advisories and the status of airport services and facilities.

(4) The facilities and services necessary to safely conduct IFR operations are available and operational at the time of the operation.

c. The certificate holder is authorized to designate and use an alternate or diversionary airport which will involve terminal area IFR powered-lift operations in Class G airspace provided that at the time of any operation to that alternate or diversionary airport, the certificate holder determines that the provisions specified in subparagraphs a(1) through (4) are met.

d. The certificate holder is authorized to conduct scheduled passenger terminal area IFR powered-lift operations in Class G airspace when, at the scheduled time of operation, the airspace would have been Class D or E airspace but, because of air traffic control (ATC), weather, or mechanical delays, the flight arrives at a time when the controlled airspace is not operational, provided the certificate holder determines that the provisions specified in subparagraphs a(1) through (4) are met.

e. The certificate holder is authorized to conduct scheduled passenger terminal area IFR powered-lift operations in Class G airspace provided an authorized instrument approach procedure and the facilities and services listed in Table 1 are available and operational at the time of the operation.

Table 1 – Authorized Airports

Airport Name/Location & Identifier	Weather Source	Traffic & Airport Advisory Service

Appendix W. Sample OpSpec P122, Special Instrument Procedures: 14 CFR Part 135

a. The certificate holder is authorized to conduct special instrument approach procedure (IAP), departure procedure (DP), Standard Terminal Arrival Route (STAR), and Area Navigation (RNAV) Visual Flight Procedure (RVFP) operations specified by airport and procedure name, as listed in Table 1 of this operations specification.

[Select the powered-lift M/M/S authorized to conduct special instrument and RNAV VFP procedures. For selecting more than one aircraft from the list, hold down the control key (“Ctrl”) while clicking on the value(s) in the list. [DO NOT USE THE ENTER KEY when selecting multiple values. Click back on the dropdown arrow to close the dialog.] For listing all aircraft within a specific Make/Model, you can Enter “ALL” along with making the entry of “MAKE/MODEL”, e.g. “ALL B-747”]

Table 1 – Authorized Airports, Procedures and Powered-Lift

Airport Identifier (ICAO)	Procedure Name, ORIG or AMDT NO.	Airport State	Powered-Lift M/M/S	Limitations and Provisions

b. Additional Requirements. The following operations specifications may be required for the authorization of specific procedures in this operations specification P122.

(1) The certificate holder must be authorized P102, Authorized Straight-in Instrument Approach Procedures. The “type” of approach authorized in P122 must be authorized in P102.

(2) Operations specifications P112, Instrument Approach Operations Using an Area Navigation System; P113, Terminal Area IFR Operations in Class G Airspace and/or at Airports Without an Operating Control Tower—Nonscheduled Passenger and All-Cargo Operations; P121, Terminal Area IFR Powered lift Operations in Class G Airspace—Scheduled Passenger Operations; and/or P123, IFR Operations for Powered-Lift Utilizing Required Navigation Performance (RNP) 0.3 for Enroute and Terminal Operations, may be required.

(3) The certificate holder must be issued operations specification P384, Required Navigation Performance (RNP) Procedures with Authorization Required (AR), if an RNP AR-like special procedure is authorized in Table 1 above. The authorization in P384 must contain the “lowest RNP” and “additional aircraft capabilities” meeting the requirements of the special procedure.

c. Required Training. Flightcrews must be trained in accordance with the certificate holder’s training program before conducting any operations authorized by this operations specification.

Appendix X. Sample OpSpec P123, IFR Operations for Powered-Lift Utilizing Required Navigation Performance (RNP) 0.3 for En Route and Terminal Operations: 14 CFR Part 135

a. The certificate holder is authorized to conduct en route and terminal navigation under IFR utilizing Required Navigation Performance (RNP) 0.3 while operating in the vertical-lift flight mode. This includes En Route CLASS I and CLASS II navigation on published airways, published helicopter routes, random and point-to-point navigation, under IFR.

Note: Persons operating powered-lift in the vertical-lift flight mode may use RNP 0.3 copter procedures as defined in 14 CFR Part 97, § 97.3 if the aircraft is certified for instrument flight rule operations and the aircraft flight manual does not contain a limitation against using copter procedures per 14 CFR Part 194, § 194.305.

b. Powered-Lift and Navigation Equipment. The certificate holder is authorized to conduct Class I and Class II navigation en route and terminal using the powered-lift listed in Table 1.

Table 1 – Powered-Lift and RNP 0.3 Authorization

Powered-Lift M/M/S	Navigation Specification(s)	Additional Capabilities	Limitations and Provisions

c. Bundling and Authorized Powered-Lift/Equipment. In Table 1, under the Navigation Specification(s) column, RNP 0.3 may be combined with Advanced RNP or RNP 0.3 with Radius to Fix (RF) or RNP 0.3 only (without the Advanced RNP option). As a minimum for Advanced RNP, the certificate holder must be qualified for the following Advanced RNP capabilities: scalability, RF, and parallel offset. Additionally, the Advanced RNP certificate holder must have adequate continuity for the operation.

d. Additional Capabilities. Fixed Radius Transitions (FRT) and/or Time of Arrival Control (TOAC) may be selected in Table 1 under Additional Capabilities for those who qualify for Advanced RNP.

e. Provisions and Limitations. The certificate holder must comply with the following limitations and provisions when conducting any operation authorized by this paragraph.

(1) The certificate holder must not conduct such operations unless the certificate holder’s approved training program provides training for the equipment and special procedures to be used.

(2) Powered-lift and RNP system must meet the airworthiness requirements for RNP 0.3 operations contained in AC 20-138() and the AFM must not contain a limitation against using copter procedures.

(3) Any pilot used in operations authorized by this paragraph must be qualified in accordance with the certificate holder's approved training program for the powered-lift and navigation system being used.

(4) Certificate holder's training programs must include training based upon the operational guidance in the Advisory Circular (AC) 90-105(), Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace for RNP systems to operate on RNP routes and procedures.

(5) Powered-lift operations in the continental United States and Alaska using RNP 0.3 routes requiring GPS with WAAS augmented equipage must be within air traffic control (ATC) communication. If the RNAV or the LRNS fails, notify ATC as soon as possible.

Appendix Y. Sample OpSpec P384, Required Navigation Performance (RNP) Procedures with Authorization Required (AR): 14 CFR Part 135

a. The certificate holder is authorized to conduct operations using 14 CFR Part 97 Required Navigation Performance (RNP) Instrument Approach Procedures (IAP) with Authorization Required (AR). Such operations must be conducted in accordance with the provisions and limitations of these operations specifications.

b. Authorized Aircraft and Equipment. The certificate holder is authorized to conduct RNP AR IAP operations using the powered-lift aircraft and area navigation systems listed in Table 1 below.

Table 1 – Aircraft and Navigation Systems Eligible for RNP Procedures with AR

Powered-lift M/M/S	Navigation System M/M/ Software Version	Limitations	Lowest RNP	Additional Aircraft Capabilities

c. Flightcrew Qualifications. The flightcrew must not conduct any operations authorized by this paragraph unless they have successfully completed the certificate holder’s RNP AR IAP approved training and qualification program.