

TRAINING BULLETIN No. 1

Introduction: Hickok & Associates has provided a new charting legend... *Hickok & Associates Helicopter Instrument Approach and Departure Charts - Charting Format & Legend (Revision2)*, subsequently referred to herein as the “Company’s Charting Legend”, which can be downloaded from the company’s website at <http://www.hickokgpsifr.com/>. We have also been working with FAA toward providing an improved FAA Form 8260-7B *Special Instrument Approach Procedure Authorization* to be issued with the company’s special Copter Instrument Flight Procedures. The charting legend is ready for downloading. Our purpose in working with FAA on an improved FAA Form 8260-7B has been to provide procedure specific items that we feel should be included therein, and hope it can be finalized soon.

This **TRAINING BULLETIN No. 1** is being released by Hickok & Associates, Inc. as an intermediate step to convey the subject matter provided herein pertaining to the company’s Copter Departure Procedures. Please understand that it is not our intention to interfere with individual operators training programs or to be assuming a training role in your flight operations, however, the following should be understood by pilots using Hickok & Associates Copter Departure Procedures.

The following subject matter is discussed herein:

1. Applicable departure minimums and relevance to CFR § 135.613(b) Helicopter Air Ambulance, Commercial Helicopter, and Part 91 Helicopter Operations. (*Note. Pilots can depart visually on Hickok & Associates departures and use the published T/O minimums.*)
2. Setting a course to the Initial Departure Fix (IDF) crossing course published in the DP ROUTE DESCRIPTION when a curving visual climb area (VCA) is depicted in the Visual Segment/Heliport Egress Plan View of the chart. (*Note. Setting the course is not required for departures depicted with a straight VCA to the IDF, provided the departure procedure is selected while on the heliport. However, with a curving egress/VCA departure, it is important that the pilot set the course to intercept the course provided in the DP ROUTE DESCRIPTION to cross the IDF to ensure that the helicopter remains within the VCA and intercepts the VCA course to cross the IDF (e.g. within the protected airspace), and; is therefore directly related to whether the pilot can enter IMC prior to the IDF.*)
3. How to depart and transition *visually* to cross the IDF at-or-above the IDF crossing altitude on the charted course when only the ceiling and visibility weather/takeoff minimums are published. (*Note. Entry into IMC begins at the IDF when only ceiling and visibility T/O minimums are published.*)
4. How to depart and transition *visually* within the visual climb area (VCA) to cross the IDF at-or-above the IDF crossing altitude on the charted course when the published weather/takeoff ceiling and visibility minimums include... “or standard with (minimum climb) to cross (named IDF) at (altitude)”. (*Note. Entry into IMC prior to the IDF is protected when standard take off minimums are provided in the T/O minimums, but, the pilot must ensure that the aircraft can meet performance requirements, and must have established positive course guidance to cross the IDF on the charted course prior to entering IMC.*)

This **TRAINING BULLETIN No. 1** will discuss this subject matter using example departure procedures provided in the Company’s Charting Legend the following two Sections: (1) Departure Minimums, and; (2) Pre-Takeoff and Takeoff Procedures.

(1) Departure Minimums:

Introduction: Hickok & Associates provide Obstacle Departure Procedures (ODP) based on the company's FAA-approved criteria. Takeoff minimums are published on the ODP charts and always include the ceiling and visibility takeoff weather requirements to provide the pilot with weather minimums to see and avoid obstacles during the *visual* transition to climb and cross the IDF at the published crossing altitude. In addition to the ceiling and visibility, takeoff minimums may also include standard takeoff minimums when a Visual Climb Area (VCA) assessment provides obstacle protection within the VCA with a published climb gradient.

Hickok & Associates departure charts are not annotated to depart *visually*, or conversely to depart VFR, nor is an annotation required. The company's published takeoff minimums is relative to the following reference provided from FAA's *Helicopter Air Ambulance, Commercial Helicopter, and Part 91 Helicopter Operations; Clarifications*, in which FAA has clarified the following:

Note. FAA's clarification can be downloaded at:

<https://www.federalregister.gov/articles/2014/09/30/2014-23250/helicopter-air-ambulance-commercial-helicopter-and-part-91-helicopter-operations-clarification>

“With respect to instrument departures, § 135.613(b) addresses only VFR to IFR transitions, not departures conducted under an IFR clearance with takeoff minimums published on an ODP. If a departing flight obtains an IFR clearance valid from lift off and weather meets or exceeds the published ODP takeoff minimums, the pilot can “proceed visually” under the IFR clearance to the Initial Departure Fix (IDF). In this case, there is no VFR segment, the published takeoff weather requirements are in effect, and § 135.613(b) does not apply.”

Example 1: *See the Company's Charting Legend, pg. 4 of 5, Basic Departure Chart Format... FABIN ONE.*

FABIN ONE illustrates a straight VCA to the IDF in the Visual Segment/Heliport Egress Plan View (also referred to as the “Sketchbox”). The published takeoff minimums are: 500 – 3/4, or standard with minimum climb of 611 ft per nm to 1340.

As described with ball note 17 in the Company's Charting Legend (*see Page 5 of 5 of the Company's Charting Legend*), FABIN ONE includes a VCA that has been assessed for obstacle clearance and identification, and standard takeoff minimums are provided on the chart with aircraft climb performance requirements.

To use standard takeoff minimums on FABIN ONE the pilot shall determine that the helicopter can meet the charted climb performance of 611 ft per nm to 1340 MSL. This determination is a pre-takeoff task. (*Note. If climb performance is met and the helicopter is established on the direct course to the IDF from the helipad, the pilot may enter IMC prior to the IDF... see Pre-Takeoff and Takeoff Procedures for FABIN ONE below.*)

If it is determined the helicopter cannot meet the climb performance required, the published ceiling and visibility weather/takeoff minimums of 500 – 3/4 are required and standard takeoff minimums are not authorized to be used. (*Note. In this instance, the pilot may not enter IMC prior to the IDF... see Pre-Takeoff and Takeoff Procedures for FABIN ONE below.*)

Per FAA's clarification to § 135.613(b), FABIN ONE's published takeoff minimums can be used for the departure to proceed *visually* to the IDF.

Example 2: See the Company's Charting Legend, Appendix B, pg. 4 of 9... COXOS ONE

COXOS ONE illustrates a curving VCA in the Sketchbox to the IDF. The takeoff heading of 246 and instructions to maneuver to cross COVED on course 330 is also provided in the Sketchbox. The direct course from the heliport to the IDF is provided for reference only. The published takeoff minimums are: 500 – 3/4, or standard with minimum climb of 638 ft per nm to 600.

As described with ball note 17 in the Company's Charting Legend (see Page 5 of 5 of the Company's Charting Legend), COXOS ONE includes a VCA that has been assessed for obstacle clearance and identification, and standard takeoff minimums are provided on the chart with aircraft climb performance requirements.

To use standard takeoff minimums on COXOS ONE the pilot shall determine that the helicopter can meet the charted climb performance of 638 ft per nm to 600 MSL. This determination is a pre-takeoff task. (Note. If climb performance is met and once the helicopter is established on the 330 course line to the IDF, the pilot may enter IMC prior to the IDF... see Pre-Takeoff and Takeoff Procedures for COXOS ONE below.)

If it is determined the helicopter cannot meet the climb performance required, the published ceiling and visibility weather/takeoff minimums of 500 – 3/4 are required and standard takeoff minimums are not authorized. (Note. In this instance, the pilot may not enter IMC prior to the IDF... see Pre-Takeoff and Takeoff Procedures for COXOS ONE below.)

Per FAA's clarification to § 135.613(b), COXOS ONE's published takeoff minimums can be used for the departure to proceed *visually* to the IDF.

Example 3: See the Company's Charting Legend, Appendix B, pg. 9 of 9... JINAM ONE

JINAM ONE illustrates a curving VCA in the Sketchbox to the IDF. The takeoff heading of 025 and course 323 to ZOTRU are illustrated in the Sketchbox, and the direct course from the heliport to the IDF is provided for reference only. The published takeoff minimums are: 400 – 3/4 and do not include standard takeoff minimums.

As described with ball note 17 in the Company's Charting Legend (see Page 5 of 5 of the Company's Charting Legend), the ceiling and visibility/weather takeoff minimums provide the pilot with the ability to see and avoid any obstacles during the *visual* transition to climb and cross ZOTRU at or above 1500 MSL while remaining VMC. Takeoff obstacles identified during the VCA assessment are charted both graphically in the Sketchbox, and, textually in the Takeoff Obstacles on Depicted Route in the Egress Profile View. The pilot may not enter IMC prior to the IDF.

Per FAA's clarification to § 135.613(b), JINAM ONE's published takeoff minimums can be used for the departure to proceed *visually* to the IDF.

(2) Pre-Takeoff and Takeoff procedures:

Introduction: Per Hickok & Associate's FAA-approved criteria, and FAA Order 8260.46, a DP ROUTE DESCRIPTION is provided on the ODP chart. The setup by the pilot and how to perform the takeoff per the ODP is the key purpose of this **TRAINING BULLETIN No.1**.

Example 1: See the Company's Charting Legend, pg. 4 of 5, Basic Departure Chart Format... FABIN ONE.

DP ROUTE DESCRIPTION: Hover at or above 10' AGL: Climb to cross CENLI on course 328 at or above 1340. Continue climb on depicted route to cross FABIN at or above 3100, thence....

FABIN ONE provides a direct course of 358 from the heliport to the IDF. There is a 30 degree course change at the IDF to proceed to the 2nd waypoint on course 328.

Pre-Takeoff:

- The pilot shall complete the determination that the helicopter climb performance at the pressure altitude, temperature, and gross weight, to climb at or above the published 611 ft per nm for use of the standard takeoff minimums; otherwise, the published weather/takeoff ceiling and visibility of 500 – 3/4 is required for takeoff.
- The pilot shall perform all the normal IFR pre-takeoff checks.
- The chart is annotated RNAV-1 in the GPS Required box of the Pilot Briefing Information, therefore, the pilot shall set the CDI sensitivity to 0.3. (*Note. If the departure chart were annotated RNP 0.3 this step would not be required*)
- The pilot shall select and load the departure to CENLI (the IDF).

After Takeoff:

Note. All IDF's are coded as flyby waypoints; therefore, turn anticipation should capture CENLI prior to arrival and provide the 30 degree course change to intercept and proceed on course 328 to ENOPE; e.g. normal flyby operations.

If the pilot is using the charted standard departure minimums, is tracking to CENLI on the published 358 course to the IDF, and has maintained the charted minimum climb of 611 ft per nm, the pilot may enter IMC prior to the IDF. Other aircraft specific limits must also be met (*e.g. minimum autopilot and V_{mini} Airspeeds*). If any of these conditions are not met, the pilot should not enter IMC until arrival at CENLI at or above 1340 MSL.

Note. The obstacle clearance assessment of the straight visual climb area (VCA) is predicated upon tracking on the direct-to course from the heliport to the IDF and maintaining the charted climb gradient after takeoff to the IDF.

Example 2: See the Company's Charting Legend, Appendix B, pg. 4 of 9...COXOS ONE

DP ROUTE DESCRIPTION: Hover at or above 10' AGL: Climb to cross COVED on course 330 at or above 600. Continue climb on depicted route to cross COXOS at or above 2600, thence....

COXOS ONE provides a curving egress and VCA from the heliport to cross the IDF on course 330, which is the same course to proceed from the IDF to the 2nd waypoint.

Pre-Takeoff:

- The pilot shall complete the determination that the helicopter climb performance at the pressure altitude, temperature, and gross weight, to climb at or above the published 638 ft per nm for use of the standard takeoff minimums; otherwise the published weather/takeoff ceiling and visibility of 500 – 3/4 is required for takeoff.
- The pilot shall perform all the normal IFR pre-takeoff checks.
- The pilot shall select and load the departure to COVED (the IDF) and must set the course 330 to COVED manually. (*Note. The course to be set is provided in the DP ROUTE DESCRIPTION... "Climb to cross COVED on course 330 at or above 600". Consult the user manual for the*

GPS/FMS installed in the helicopter for steps to set a defined course to a direct-to destination waypoint.)

- The pilot should set the heading bug to the takeoff heading; which for COXOS ONE is charted in the Sketchbox as 246 degrees.

Note. The chart is annotated RNP 0.3 in the GPS Required box of the Pilot Briefing Information, therefore, the pilot does not need to set the CDI sensitivity to 0.3 in the Pre-Takeoff Steps..

Note: With a curving egress/VCA departure, it is important that the pilot set the course to intercept the course provided in the DP ROUTE DESCRIPTION to cross the IDF. This step is to ensure that the helicopter remains within the VCA and intercepts the VCA course to cross the IDF (e.g. within the protected airspace). The Sketchbox also provides the direct-to course and distance from the heliport to the IDF and is annotated “for reference only”. In the correct COXOS ONE departure scenario, the pilot shall activate the departure, manually select a course of 330 to the IDF in the GPS or FMS, and should set the heading bug to 246 degrees prior to takeoff from the heliport. After departing the heliport on a 246 heading, the CDI course line will be off to the left while the pilot maneuvers visually to intercept course 330 to the IDF and gains speed. Upon completion of the curving egress, the CDI will be centered on the VCA course of 330 to the IDF.

After Takeoff:

After takeoff, and while maintaining VMC, the pilot will climb at or above 638 ft per nm, establish a turn to the right (as depicted in the ODP Chart Sketchbox), and select the NAV/GPS mode to intercept course 330 and establish positive course guidance to the IDF.

Note. During the turning portion of the curving egress/VCA a half-standard rate to standard rate turn bank angle, depending on the rate of acceleration to 70 KIAS and current winds, should allow rolling out on the VCA course to the IDF.

If the pilot is using the charted standard departure minimums, and once established on the 330 course to the IDF, and provided the pilot has maintained the minimum climb of 638 ft per nm, the pilot may enter IMC prior to the IDF. Other aircraft specific limits must also be met (e.g. minimum autopilot and V_{min} Airspeeds). If any of these conditions are not met, the pilot should not enter IMC until arrival at COVED at or above 600 MSL.

Note. The obstacle clearance assessment of the curving visual climb area (VCA) is predicated upon intercepting and tracking on the charted course to the IDF and maintaining the charted climb gradient after takeoff to the IDF.

Example 3: See the Company’s Charting Legend, Appendix B, pg. 9 of 9... JINAM ONE

DP ROUTE DESCRIPTION: Hover at or above 20’ AGL: Climb to cross ZOTRU on course 323 at or above 1500. Continue climb on depicted route to cross JINAM at or above 2700, thence....

JINAM ONE provides a curving egress and VCA from the heliport to cross the IDF on course 323, which is the same course to proceed from the IDF to the 2nd waypoint.

Pre-Takeoff:

- The pilot shall perform all the normal IFR pre-takeoff checks.
- The chart is annotated RNAV-1 in the GPS Required box of the Pilot Briefing Information, therefore, the pilot shall set the CDI sensitivity to 0.3.

- The pilot shall select and load the departure to ZOTRU (the IDF).
- The pilot should set the course 323 to ZOTRU manually.
- The pilot should set the heading bug to the takeoff heading 025 (*provided in the Sketchbox*).

Note. The published takeoff minimums are: 400 – 3/4 and do not include standard takeoff minimums. Therefore, the Pre-Takeoff step included for both FABIN ONE and COXOS ONE for the pilot to determine climb performance per a charted climb gradient to the IDF is not required. This of course does not suggest the pilot should not perform normal or routine performance checks. The Rate of Climb (ROC) table provided on the ODP chart is provided for reference and includes the climb required to ZOTRU (the IDF) and from ZOTRU to JINAM (the end of departure waypoint).

After Takeoff:

After takeoff, and while maintaining VMC, the pilot will climb to cross ZOTRU at or above 1500 MSL. The pilot may not enter IMC prior to the IDF.

Note. The Pre-Takeoff steps annotated above as should are recommended to enhance situational awareness. If used, after takeoff the pilot will establish a turn to the left (as depicted in ODP Chart Sketchbox), and select NAV/GPS mode to intercept course 323 and establish advisory course guidance to the IDF for the visual transition. If the course to the IDF is not set the course from heliport to IDF will be displayed and active. In either scenario used the pilot may not enter IMC prior to the IDF.

Note. The absence of standard takeoff minimums in the published Takeoff Minimums signifies obstacle protection for entry into IMC prior to the IDF is not provided. The published takeoff minimums of 400 – 3/4 provide a ceiling and visibility to see and avoid the charted obstacles during the visual transition to climb and cross ZOTRU at or above 1500 MSL.

Summary:

1. Per FAA's clarification to § 135.613(b) the takeoff minimums published on Hickok & Associates departure charts can be used to depart *visually* and § 135.613(b) does not apply.
2. Takeoff minimums will always include the ceiling and visibility to provide the pilot with weather minimums to see and avoid obstacles during the *visual* transition to climb and cross the IDF at the published crossing altitude.
3. When the VCA has been assessed standard takeoff minimums may also be provided and will include aircraft performance requirements to use the standard takeoff minimums.
4. When the VCA has been assessed and standard takeoff minimums are provided, the pilot may enter IMC prior to the IDF provided the pilot is established to the IDF on the charted course with positive course guidance and the charted climb rates have been met.

Note. The Company is aware that there are departure charts that certain operators may have, which remain usable, but, may not be consistent in all regards to what is provided herein this Training Bulletin No.1. The Company is working to update older departures and will provide new charts after amended departure procedures are approved by FAA.