



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

**NOTICE
N 8000.333**

Effective Date:
11/14/06
Cancellation Date:
11/14/07

**SUBJ: HELICOPTER EMERGENCY MEDICAL SERVICES (HEMS) USE OF THE
AVIATION DIGITAL DATA SERVICE (ADDS) EXPERIMENTAL HEMS TOOL**

1. PURPOSE. This notice provides principal operations inspectors (POI) assigned to Title 14 of the Code of Federal Regulations (14 CFR) part 135 certificate holders conducting helicopter emergency medical services (HEMS) operations guidance on the approval of such operators to use the Aviation Digital Data System (ADDS) experimental HEMS ceiling and visibility weather product.

2. DISTRIBUTION. We will distribute this notice to the division level in the Flight Standards Service in Washington headquarters, including the Regulatory Standards Division at the Mike Monroney Aeronautical Center; to the branch level in the regional Flight Standards divisions; and to all Flight Standards District Offices. Inspectors can access this notice through the Flight Standards Information Management System (FSIMS) at <http://fsims.avr.faa.gov>. Operators may find this information on the Federal Aviation Administration's (FAA) Web site at: http://www.faa.gov/library/manuals/examiners_inspectors/8000.

3. BACKGROUND.

a. Introduction. HEMS operate in a demanding environment. They provide an invaluable service to the public by providing crucial, safe, and efficient transportation of critically ill and injured patients to medical care facilities. While the contribution of HEMS is profound as a component of the nation's medical infrastructure, from an operational standpoint, it is a commercial aviation activity performed by FAA certificated air carrier operators. Therefore, operations must have the highest level of safety.

b. Accident Data. A review of the commercial HEMS accidents from January 1998 through December 2004 revealed that controlled flight into terrain (CFIT), inadvertent flight into instrument meteorological conditions (IMC), and lack of operational control are predominant factors, particularly at night and during low visibility conditions. Of the 27 fatal HEMS accidents, 21 occurred during night operations. Of the 21 night accidents, 16 of the operations originated under visual flight rules (VFR); the pilots inadvertently flew into IMC conditions, resulting in a CFIT accident.

4. DISCUSSION.

a. The HEMS Weather Summit.

(1) In order to support avoidance of CFIT and loss of control (LOC) accidents, the FAA, the HEMS industry and the University Center for Atmospheric Research (UCAR) conducted a HEMS Weather Summit in early 2006. One of the conclusions of the Summit was the absence of usable ceiling and visibility data between reporting and forecasting stations. Often, HEMS operators conduct entire HEMS flights in the area between such stations, with reliance on off-course stations and area forecasts to make critical flight planning decisions. One of the outputs of this Summit was a commitment to providing the HEMS operating community access to information which might support better weather decisionmaking in VFR operations.

(2) Accordingly, FAA asked UCAR's Research Applications Laboratory (RAL) to develop a tool as a part of the Aviation Digital Data Service (ADDS) experimental web site. This tool would provide access to "gridded" ceiling and visibility assessment in areas between METAR and TAF reporting/forecasting sites.

b. Gridded Ceiling and Visibility Assessment.

(1) This ceiling and visibility data are "assessments," meaning they are determinations of the ceiling and visibility that is likely to exist in the grid block based on terrain influences, technical assessments, and observations provided to software forecasting models that automatically generate the graphical product. The user must understand that this weather product is *not* a report of an observation or a forecast. It is an assessment of the ceiling and visibility at the time chosen by the user and at the location of the grid block(s).

(2) In addition, this product has not completed a rigorous Flight Standards operational suitability assessment. This assessment establishes the product as either a primary weather product that meets all safety and regulatory requirements (e.g., METAR or TAF) or as a supplementary weather product for increased situation awareness. Until that assessment, the product currently is experimental.

(3) The user should be aware that the Tool derives ceiling and visibility by *interpolating* the nearest METAR data. This interpolation process, in effect, "stretches" limited-area METAR observations across a broader area between stations accounting for terrain effects on ceiling height. The results are the likely conditions between METAR stations. However, a critical issue is that the reliability of the information generally degrades as distance from a METAR site increases. Thus, users should apply practical judgment when considering the "likely" weather conditions that are remote from a METAR site. To aid in this judgment, the product provides Confidence fields that integrate a variety of product quality factors. Accordingly, indications of a "likely" weather condition that indicates a no-go condition should strongly influence the decisions of certificate holders authorized to use this product.

c. **The ADDS HEMS Tool.** The ADDS HEMS Tool allows the user to identify gridded weather assessments in 5 km x 5 km blocks. The weather data available includes flight category,

ceiling, visibility, radar, convection, icing, temperature, relative humidity, and wind. Overlays on the graphical data include wind barbs, METARs, PIREPs, AIRMETs/SIGMETs, TAFs, VORs, state and county boundaries, and a base map of terrain and cultural information.

(1) This data became available effective November 1, 2006 on the ADDS Experimental Site at www.weather.aero/hems. The site contains a tutorial as well as “frequently asked questions.”

(2) In addition, you can find a technical report on the performance of this Tool at <http://www.avmet.com/> under the “Supplementary Weather Products” menu.

(3) We consider taking the tutorial and reviewing the report as vital to effectively using the Tool.

d. Limitations. Operators may not use this Tool in any way to support IFR operations. The only approved use of this Tool is in VFR operations and then only in the context of supporting a “no-go” decision. Operators may not use the Tool as the sole source for decisions to “Go.” They may only use established primary products such as METARs, TAFs, area forecasts, weather depiction charts, prognosis charts, etc., to make both “Go” and “No-Go” decisions. We have provided the following examples:

(1) If primary products, such as METARs, TAFs and area forecasts indicate a proposed flight would encounter weather conditions worse than those required by OpSpec for VFR operations, and the HEMS tool indicates that conditions meet OpSpecs minima, an operator cannot use the HEMS tool to support a “Go” decision not supported by primary products.

(2) If the primary products indicate that an operator could complete a flight in conditions at or above the OpSpec minima, and the HEMS tool indicated weather lower than required along the route of flight, the HEMS tool can support a “no-go” decision. This is particularly important since many primary products (such as area forecasts) do not have the specificity to identify highly localized low weather conditions. The HEMS tool can resolve assessments at the 5km x 5km grid level.

(3) The following table reflects the relationship of the HEMS tool to primary weather products:

Condition	Primary Weather Products	ADDS HEMS Tool	Decision
1	No-Go	Go	No-Go
2	Go	Go	Go
3	Go	No-Go	No-Go*

Table 1.

* Because the ADDS HEMS Tool is an experimental product, we encourage operators to make a “No-Go” decision when the Tool indicates ceilings and/or

visibilities below OpSpec minimums even when primary products indicate acceptable weather conditions (condition 3 in table 1).

(a) In cases where the tool supports an initial “No-Go” decision, depending on the extent of the area of assessed low ceilings and/or visibilities, it may also provide information which would support re-routing a flight to avoid indicated hazardous ceiling and visibility conditions. In these cases, the primary products, as well as the ADDS HEMS tool would then both indicate acceptable conditions along the re-routed flight path, meeting the criteria of condition 2 in table 1.

(b) In some cases, a certificate holder may choose to disregard the ADDS HEMS Tool on the basis of direct observations, pilot reports, or other data. However, should the certificate holder elect to operate when the Tool indicates unacceptable conditions, knowledge of the Tool’s assessment may increase the pilot’s situational awareness and support more timely in-flight decisions to divert or land short if the pilot observes deteriorating conditions in-flight. Delaying such in-flight decisions substantially increases the potential for inadvertent instrument meteorological conditions (IMC) encounters, with the resulting increased risk of a CFIT or LOC accident.

5. ACTION.

a. POIs assigned to HEMS part 135 certificate holders should distribute this Notice to affected operators and encourage them to consider adopting this HEMS tool into their approved weather program under OpSpec A010, Aeronautical Weather Data.

b. POIs should encourage operators to review the ADDS HEMS Tool tutorial and the “frequently asked questions” on the website, and the cited technical report of the product’s performance.

c. To obtain approval to use the ADDS HEMS Tool, the certificate holder must provide access to, and pilots and other personnel who will use the ADDS HEMS Tool must review, the ADDS HEMS Tool tutorial and the technical performance report before using the product.

d. After reviewing this documentation, and establishing the method to accomplish (b) above, the certificate holder may request authorization to use the ADDS HEMS Tool to support VFR flight operations under their OpSpecs. Accomplish this authorization by amending existing OpSpec paragraph A010 by inserting the following text in subparagraph (a) after the approved weather information entry:

“The FAA has authorized the certificate holder to use the experimental ADDS HEMS Tool to support VFR flight planning. The HEMS tool controls only in the negative (it is applicable only in the “no-go” decision). The certificate holder may not conduct flight operations based solely on an indication by the ADDS HEMS tool that safe conditions have been assessed along the proposed route of flight.”

6. TRACKING. Document accomplishment of the issuance of the amended OpSpec A010 by:

- a. Opening a Program Tracking and Reporting Subsystem (PTRS) record, using code 1327.
- b. Entering “**N8000333**” in the “National Use” field (without the quotes).

7. DISPOSITION. We will incorporate this notice into the FAA’s Flight Standards Information System (FSIMS) and associate it with OpSpec A010 in the guidance subsystem of the Operations Safety System (OPSS). Direct questions concerning this notice to the Commuter, On Demand, and Training Center Branch, AFS-250, at (202) 267-3437.

ORIGINAL SIGNED BY
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