

Memo

Date: May 20, 2010
To: Fred Jones
From: Bob Toews
cc: IFR Committee
Re: Convention 2010 Action Items

The HAC IFR Committee convened for 3 meetings during the recent 2010 Convention in Quebec City. The following action items were identified and are supported by operator members. A point form summary of our deliberations may be found in the IFR Committee 2010 Minutes and Notes:

1. NVIS National Exemptions & Best Practice Working Group

Continued collaborative development between the HAC and Transport Canada of an integrated system of regulation, advisory circulars, exemptions and best practices to govern the use of NVIS by Canadian helicopter operators (commercial, state, and private).

Required Actions:

- a. Ongoing meetings of the HAC/Transport Canada NVIS Working Group:
- b. Drafting and submission to the CARAC process of a regulation prohibiting NVIS use by helicopter operators unless authorized to do so by exemption. IFR Committee NVIS Working Group participants support the extension of this prohibition to all types of helicopter operations provided that associated exemptions are simultaneously enabled which support safe and effective use of NVIS for each industry segment. The NVIS Working Group would like to review and approve the supporting exemptions and Transport Canada advisory circular(s) before the regulation prohibiting NVIS use is brought into effect;
- c. Drafting and approval of a Transport Canada NVIS Basic Exemption to (a) above for CAR 600 and 700 helicopter operators which will permit them to use NVIS within the scope of their current operations specification and/or regulatory framework in compliance with Transport Canada NVIS advisory material and circulars.
- d. Review, revision and approval of Transport Canada Basic NVIS Advisory Circular in support of (a) & (b) above. This Circular will specify the requirements for approval to use the Basic NVIS Exemption and will include practices and standards for crew qualification, training, Standard Operating Procedures, equipment, lighting, design, test proce-

dures, and documentation. Operators using NVIS under the Basic Exemption will comply with all regulations and standards which normally apply to unaided night flight in addition to those specified in this Advisory Circular.

- e. *Drafting and approval of Advanced NVIS Exemptions* to allow safe and effective deviation from specific CARs in order to fully utilize the capability of NVIS to increase safety and night time situational awareness. These operation-specific exemptions will be available to operators once they have qualified for, been granted, and demonstrated competency under, the Basic NVG Exemption. Each unique Advanced NVIS Exemptions will be supported by an appropriate HAC NVIS Best Practice which specifies, to Transport Canada's satisfaction, safe and effective practices and standards under the same categories as listed above for the Basic NVIS Advisory Circular (c). Specific Advanced NVIS exemptions may be developed to allow safe and effective deviation from the following regulations for an approved operational need;
 - i. CAR 602.115 Airspace - ability to fly on NVG at night using weather minima which is lower than currently applicable night VFR minima;
 - ii. 700 operator night MOCA - appropriate reduction in minimum vertical and/or lateral obstacle clearance requirements for night VFR enroute operations;
 - iii. Landing LZ lighting CAR 602.40 and CAR 722.18 (5) and CAR301.07 (9) - operations specific relief from requirement for night aerodrome lighting;
 - iv. Heliport Design Criteria TP325 - permission to operate to day-only certified heliports with appropriate restrictions (e.g. obstacle identification and marking).
- f. *Drafting and approval of Advanced NVIS Best Practices* to allow operators to qualify for and operate safely under one or more Advanced NVIS Exemptions as described in (d) above.

2. Class 1 Heliport Risk Assessment & Mitigation

Increasing urban density, airspace encroachments and more restrictive assessment by Transport Canada of acceptable emergency landing areas has resulted in a trend toward more Class 1 classifications for new or upgraded heliports in Canada. This has a significant impact on operators who are unable to meet the land-back or fly-away performance required at a Class 1 heliport using their existing twin-engine aircraft, or may only be able to comply with large and uneconomic reductions in payload.

While TP325 specifies the required obstacle clearance required during a OEI fly-away, Transport Canada does not provide compliance or aircraft performance qualification guidance to operators. The Category A take-off performance information found in most twin-engine helicopter AFMs is either inadequate, or too restrictive to be practically useful.

Required Actions:

- a. Form an HAC/Transport Canada Helicopter Performance Working Group;
- b. Develop helicopter and helicopter performance risk assessment and mitigation guidelines to help operators comply with the intent of CAR325 and H1 criteria. The risk of engine failure and unplanned landing during a critical phase of flight should be managed so that it is of the same magnitude as other critical system or component failures for a twin-engine transport category helicopter. Some reasonable exposure to the risk of an emergency landing should be incorporated into a new H1 risk management SMS process.
- c. Develop HAC/TC helicopter zoning and/or local planning guidance material to help protect new and existing heliports from airspace and emergency landing area encroachments.

3. Copter PINSAs Obstacle Assessment & IFR Heliport Design Criteria

Most, if not all, of the company (restricted) GPS helicopter instrument approach procedures designed and approved in Canada over the past decade have been based on TP308 Point-in-Space (PINSAs) criteria. All PINSAs, until recently, have included instructions to “Fly visually” upon leaving the MAP even though TP308 requires continued visual flight after the MAP to be conducted “under VFR.” Designers, operators, Nav Canada, and, in the past, Transport Canada, have all accepted the less restrictive terminology on the assumption that safe and prudent airmanship practices would be followed. These implied but unspecified practices include: proceeding visually at less than VFR minima only when the landing zone can be seen from the MAP, that no obscurations which may force a return to IMC exist, and that the PINSAs is restricted to company pilots who are familiar with area hazards and have previously flown the approach in VFR conditions.

TP308 does not prescribe obstacle assessment and procedure design criteria for the PINSAs visual flight area beyond the MAP or for the heliport departure area.¹ Despite these deficiencies, PINSAs have become the procedure of choice for IFR approaches to non-IFR certified Canadian heliports.² The PINSAs offers the best attainable minima since straight-in approaches cannot be designed to a non-IFR heliport. TP308 Table 1-1 which prescribes increased MDA and visibility for straight-in approaches which terminate at a non-IFR airport does not exist for heliports. Even if it did, the resulting minima would be higher in most cases than for a PINSAs at the same location.

¹ PINSAs were originally intended as a cloud-breaking procedure in order to establish VFR flight and continue to an unspecified destination. Visual transition and departure areas to and from a specific heliport were by definition not included.

² There are no IFR heliports certified in Canada even though CAR 325 includes IFR heliport design criteria. Very few of the existing Canadian heliports located within urban areas could be practically modified to meet the IFR certification criteria because of insufficient ground area for visual aids and obstacle incursions.

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Transport Canada has recently determined that the instruction to “proceed visually” at what may be less than VFR minima through an area which has not been assessed for obstacle clearance and for which no missed approach is available in the event of an aircraft encountering IMC, is unacceptable. At TC’s request the instruction must be changed to “Proceed under VFR” for all new and reviewed PINSAs approaches. This will have a significant impact on the practical usability of these approaches within controlled airspace and at night in uncontrolled airspace. At the same time, TC has also asked that all PINSAs which are associated with a specific heliport include a departure obstacle assessment and procedure.

Required Actions:

- a. *Form an HAC/Transport Canada Helicopter Instrument Procedure Working Group;*
- b. *Develop new criteria and or best practices* for:
 - i. PINSAs visual transition and departure obstacle assessment and procedure design;
 - ii. CAR 325 IFR heliport design which will permit the certification of existing heliports to harmonize with TERPS 42a GPS straight-in visual assessment slopes and through the use of new compact and affordable heliport identification, lead-in, and approach slope guidance systems;
- c. *Incorporate the most recent amendment to TERPS 42a into TP308*
- d. *Develop or harmonize TP308 WAAS and helicopter LPV criteria.*

4. Participation in the ICAO HEMS Study Group

An ICAO HEMS Study Group was formed in early 2009 to consider the need for international recommendations or standards to improve safe practices within the HEMS industry. This initiative was undertaken in response to the public concern over US HEMS accidents over the past few years and the recent NTSB report.

The HEMSSG met twice in North America 2009. The first meeting scheduled for Cologne Germany in 2010 was cancelled due to the disruption of air travel following the eruption of the Icelandic volcano. This meeting has been re-scheduled for early October, 2010, in Cologne.

The fall 2009 meeting of the HEMSSG in Montreal determined that action is warranted and that a ICAO HEMSSG advisory circular should be drafted and submitted to PANSOPS. The Study Group is currently reviewing international regulations, recommendations, and industry practices in an effort to identify critical safety issues. The Fall 2010 meeting in Cologne will assess the results of this review and begin to develop mitigations and recommended practices and standards.

Required Actions:

- a. *Continue support for HAC and Transport Canada representation to the ICAO HEMSSG.*
- b. *Report back to the IFR Committee on HEMSSG recommendations and canvas for support*