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July 5, 2023

Transport Canada CARAC Feedback via E-mail only: TC.CARConsultations-RACConsultations.TC@tc.gc.ca

RE: NPA 2023-005 – Minimum Visual Meteorological Conditions for VFR flight in Controlled and Uncontrolled Airspace - Parts I, IV, VI, VII of the CARs and Associated Standards.

To Whom It May Concern:

The Canadian Owners and Pilots Association (COPA) represents close to 13,000 thousand pilots, aircraft owners, aerodrome and airport users in Canada, whose mission is to to promote, advance and inspire general aviation, and to preserve Canadian's freedom to fly. Our association is the largest Aviation Association in Canada and third largest in the world. Our work includes advocating on behalf of our members to ensure fair and equitable practices within the aviation industry, to protect their interests, and to ensure our members are represented in situations that appear to be unreasonable by aviation industry standards and practices.

COPA strongly supports the promotion of flight safety and believes any opportunities to reduce risk in aviation should be pursued. While supporting this philosophy COPA also believes that any changes must be done in consultation with the aviation industry and must also be balanced in costs and benefits. To this end in 2021 COPA provided detailed input in response to the previous Notice of Proposed Amendment (NPA) NPA2021-007 Minimum Visual Meteorological Conditions (VMC) for Visual Flight Rules (VFR) Flight. That response was intended to provide a comprehensive assessment of the proposal, as it was at that time, and make recommendations to be considered if the proposal was to continue. In response to the consultations NPA2021-007 did not proceed as proposed but instead the work appears to have moved forward into the new NPA2023-005. Additional changes and recommendations are now being included which further broaden the scope of the new proposed NPA.

On review of NPA 2023-005, COPA continues to have many of the same concerns highlighted in response to the previous NPA, in addition to new concerns due to:

- Lack of industry consultation – COPA represents over 13,000 pilots in Canada and yet no meaningful consultation with COPA was solicited prior to the issuance of NPA2023-005.
- Recommendations without sufficient detail – many of the proposed changes withing the NPA2023-005 lack detail or clarity in wording, so impacts are unable to be assessed.
- Apparent overreach in response to TSB Recommendation A016-08 – changes to areas outside the scope of the recommendation.
- Lack of data, evidence, and associated statistical analysis in support of the recommendations.

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- Lack of detailed assessment of value of proposed changes versus financial impacts to industry – mitigation of risk versus costs.
- Failure to recognize the unintended consequences that will result due to the lack of industry and stakeholder consultations.

Additionally, previous COPA input and recommendations do not appear to have been considered or addressed. At best it appears that any recommendations which might have support the proposal have been taken without consideration of qualifying statements. To avoid reiterating COPA's previous input verbatim please see the attached copy of the 2021 response for reference.

COPA's previous response covers many areas of concern but the new NPA introduces new changes which broaden the scope and impact to industry. For detail on COPA's concerns please see the included attachment which maps responses to each section of the current NPA into one document for your consideration.

While COPA applauds Transport Canada's efforts to improve safety, we would also like to highlight the Safety Management System (SMS) philosophy of "ALARP." Across the aviation industry one of the core philosophies for managing risk is the assumption that risk should be mitigated "As Low As Reasonably Practicable" or "ALARP." This philosophy stresses that mitigations to risk need to be balanced with costs and that expectations that risk be reduced at all costs is not reasonable. Transport Canada promotes this as a key consideration in any SMS but appears to have not tested the proposals of this NPA to this standard. Restricted access / high costs for specialized equipment, significantly increased training costs, and the need for fundamental changes to weather, or flight condition, reporting all point to exceedingly high implementation costs and significant changes / impacts to regulation and operators without a quantifiable reduction in risk. COPA would argue that the current NPA, as proposed, does not meet the threshold of ALARP but will impose costs for change that far outweigh the potential reduction in risk.

Finally, COPA would like to highlight the continuing need for consultation as the scope of these proposals appears to be extremely far reaching across current regulation. At first assessment, and without complete detail, many of the proposed changes appear to bring unintended consequences, and impacts, to the industry which are beyond the recommendations from the TSB in A16-08.

COPA remains committed to continuing dialogue and looks forward to participating in future consultation on this matter.

Respectfully,

Mark van Berkel

President and CEO / Président et chef de la direction

Canadian Owners and Pilots Association / Association Canadienne des pilotes et propriétaires d'aéronefs



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NPA2023-005 Comments

Paragraph Number	Contents	COPA Stance	Comments
1	Executive Summary	Disagree	<p>In this executive summary, the NPA describes the process in which the current NPA is an extension of NPA 2021-007 and is a result of content of responses received regarding that NPA and ongoing internal working group discussions.</p> <p>A major point made by COPA in response to NPA 2021-007 centered on the fact that a significant part of the industry and General Aviation groups, who are the most affected by the proposed changes, were not consulted. This is an ongoing problem, comments regarding this issue appear to have been ignored in 2021 and did not receive a response from TCCA.</p> <p>A proper CARAC process should not result in a NPA being published which is a complete surprise to the industry. Stakeholders can be TCCA's best resource in the identification of problem areas, developing solutions, and reducing the risk that regulatory change would have negative unintended consequences to the whole industry. (Reference TP 11733 CARAC Management Charter paragraph 4. Objective)</p> <p>“..soliciting and identifying aviation industry needs for full consideration through direct involvement and consultation;”</p> <p>Prior to any NPA being published. The PICA process should be observed, all stakeholders should be consulted and when the NPA is finally published for public consultation there should not be any unexpected changes. (Reference TP11733 para 6.1 and Appendix A). While content should not be a surprise to any of the stakeholders, stakeholders may not necessarily be in total</p>

		<p>agreement with proposed changes, CARAC NPA and Gazette I offer final opportunities for comment.</p> <p>Going forward TC would be benefit by engaging with COPA on issues affecting general aviation, aircraft equipage pilot training, licensing, currency, and any other proposed regulatory amendments affecting the viability of general aviation.</p> <p>Also, in the executive summary it is explained that the amendments included in this NPA are a result of TSB recommendation A16-08. While TSB recommendations are supposed to be a result of a serious and thoughtful process, the question remains how a valid risk assessment was made in the absence of current numerical data and a proper statistical analysis of day and night VFR movements. Without analysis of empirical data, it becomes difficult to determine whether VFR flying in night conditions is inherently more dangerous when you remove other contributing factors that would be common to daytime incidents such as equipment failures, fuel starvation, navigation errors, loss of control, etc. Without such statistical analysis, the system is proposing rule changes based simply on numerical events and using a very small sample base consisting of 14 incidents over a 10-year period in which night flying conditions can be assumed to be only one factor of several contributing factors.</p> <p>A principal consequence of the proposals within this NPA would be to decouple the current VMC and IMC determination criteria from observed and forecast weather conditions and to introduce the new terminology Visual Flight Conditions (VFC) and Instrument Flight Conditions (IFC). While the actual definitions being proposed in this document are not disclosed, the inferences are that these definitions would include the elements of discernable horizon, cultural, and celestial lighting. Unfortunately, without specific details or guidelines, these definition changes potentially make determining what is considered legal VFR flight, in both day and night situations, much more complex and difficult.</p> <p>Statements describing vast areas of Canada as being devoid of cultural lighting are correct, and under the proposed definition, discernable horizons</p>
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			<p>are often not apparent due to obscuring phenomena both day and night, also celestial lighting is diminished on no-moon periods and even non-existent under high overcast conditions.</p> <p>Aviation weather reporting and forecasting currently conform to ICAO standards and do not include elements by which any pilot can reliably ascertain whether VFC or IFC conditions can be met based on the new definitions. Changing from an ICAO standard would put Canada alone in a situation with respect to mutual agreements that are in place regarding licensing and aircraft equipment. Certainly, a state difference would need to be filed with ICAO as Canada would be unique in application of weather minima.</p> <p>The NPA is redefining what constitutes legal VFR and IFR flying both day and night, this is an extremely complicated task which is far beyond the scope of what has been presented in this NPA. Furthermore, the stated purpose of the NPA was to respond to recommendations based on helicopter operations at night. Changes being proposed are far reaching and extend far beyond commercial night helicopter operations and would require considerable consultation with the industry which has not been completed.</p>
2	Issue and Object	Disagree	<p>Section 2 states that the key objective this proposal to increase safety and to modernize the CARs by responding to the TSB recommendation A16-08 and to allow for increased use of NVIS.</p> <p>The proposals contained in this NPA extend well beyond use of NVIS which at the current stage of the technological cycle is only practically available to high end commercial users, military, police, and special operations such as medevac. Currently technology and training does not exist for most aviation operators, commercial and private. In most, if not all cases, NVIS technology is a controlled technology not even available to private users. This limitation could effectively eliminate VFR flying as an option in many cases. COPA's contention is that to address TSB recommendation A16-08, other avenues including training and equipment should be pursued using equipment that is available to most users. The addition of new equipment that is available, like synthetic vision, should be encouraged in order to improve safety.</p>

			<p>The NPA recommendations also have the potential to impact legal day VFR operations as it is not understood how the use of NVIS would be beneficial in those circumstances. The proposal that that NVIS would be the only solution outside of IFR flights or severely restricted VFR is not reasonable or practical.</p> <p>This section contains the statement that night and daytime VFR operations in reduced visibility have been a concern for decades. In fact, this is supported by previous TSB recommendation A90-72 dated in 1990, this recommendation was open for 28 years, spanned the development of the current CAR, and was finally closed with the assessment of “Fully Satisfactory” in 2018. A proper assessment of the effect actions taken as a result of A90-72 should be made using the same statistical comparative methodology as was completed in 1990. An anomaly such as the Moosonee accident which falls beyond the norms for the typical night VFR accident should not in itself be a driver for the expansive regulatory change being proposed.</p>
3	Background	Disagree	<p>Both this NPA and the NPA from 2021 describe the air ambulance accident of 2013 as the driving force for the proposed changes. COPA addressed this issue in response to the 2021 NPA which identified 12 accidents over 10 years that had a nighttime component.</p> <p>The unfortunate Moosonee event involved an operator using a very sophisticated machine with a well-trained and qualified 2-person crew. While this response cannot address the underlying factors leading to this particular incident, it is comfortable stating that this incident does not resemble in any way typical night fixed wing operations for which the proposed changes contained in this NPA would have the most impact.</p>
4	Proposed Approach	Disagree	<p>The statement in this section is NVIS centric and does not clarify how the many included changes will interact. The proposed approach statement understates the impact this NPA will have on the industry.</p> <p>Many of the proposed changes exceed the scope of NVIS operations and it is difficult to assess how such changes will increase flight safety. The broad scope of the proposed changes without accompanying detail or explanation, in many areas,</p>

			<p>make this document difficult to analyze. Also missing is detail to how this broad set of changes could be implemented, in a structured way, without driving extensive and expensive changes for operators and an overall negative effect on the industry.</p>
5a	Analysis – Options Considered	Disagree	<p>This section opens with the statement that the reissue of NPA2023-005 is to expand on comments that were received for NPA 2021-007. COPA’s observation is that it appears that during the creation of this NPA various comments which support underlying positions were selected without engaging in any meaningful consultation with stakeholders on any qualifying factors.</p> <p>The comments received from NPA 2021-007 were not disclosed nor did Transport Canada respond individually to any of the respondents to the previous NPA to clarify comments or request additional information. The CARAC process regarding NPA 2021-007 was not respected.</p> <p>With respect to international coordination and cooperation, and preliminary impacts risk assessment, this document suggests that these changes involved no international coordination, despite an entirely new standard being created with VMC and IMC being redefined. This is concerning as there is no data or experience upon which to assess the practical success or failure of such changes.</p>
5b	Analysis – Risk Assessment	Disagree	<p>No evidence or findings from either the risk assessment or the results from the review of international regulations are included in the NPA to be able to comment on.</p> <p>The results of the risk assessment would be useful to understanding the reasoning and justification for the decisions and proposed changes made in this NPA.</p>
5c	Analysis – Preliminary Impacts	Disagree	<p>This NPA states that the amendments are expected to have a moderate impact on industry operations, however no assessment appears to have been made on the impact to private or commercial VFR operations.</p> <p>Impacts will likely reduce the availability to dispatch aircraft by flight training units both day and night if VFR is redefined. Not only will this have a significant financial impact on flight training, in Canada, it will also reduce international</p>

			<p>competitiveness and small business competitiveness with respect to large operators. The impacts on any commercial VFR operation are also impossible to accurately assess. If it were not clearly defined whether an operation would remain legal or not depending on flight conditions, there would be added uncertainty for scheduling and flight operations for FTUs.</p> <p>While the document states an expected equipment expense to FTUs and other operators, with respect to other aircraft equipment, this NPA identifies no additional equipment requirement other than NVIS equipment. As stated earlier, NVIS is not currently available for fixed wing flight schools and other operators.</p>
5d	Analysis – Rationale, Implications and Outstanding Issues	Disagree	<p>The section of the document TCCA references consulting with stakeholders, mostly in the helicopter operations and specialty operators, however it is all centered on NVIS operations. However, the current NPA is now proposing vast changes that will affect all aspects of day and night VFR aviation without consultation with other commercial and non-commercial operators or the broader population of the aviation community.</p> <p>In general, the NPA calls into question TCCA's ultimate intention with respect to night VFR operations without NVIS. It is agreed that a large percentage of VFR night flying in Canada takes place in areas devoid of cultural lighting and may at times due to weather conditions also be challenged with respect to the absence of celestial lighting and a distinct horizon, however COPA contends that such operations can be conducted safely with sufficient training and equipment that does not include NVIS.</p>
6	International Coordination and Cooperation	Disagree	<p>While new standards could see “Canada leading the world in improving VFR operations” it also creates standards not compatible with other countries and therefore inhibits international cooperation and creates different standards for pilots flying into Canada.</p>
7	Consultations	Disagree	<p>In response to concerns of the cost of NVIS and that small aircraft cannot be equipped. this section states that under new regulations operators would have a choice of methods to meet compliance including conducting flights under instrument flight rules. This statement is far reaching in that it leads the reader to understand that under the new series of proposed regulations the only acceptable</p>

			<p>method of flying at night would either be under IFR or using NVIS.</p> <p>TCCA attempts to explain the methodology of issuing a new NPA rather than responding to the comments received to NPA 2021-007. Using this method for rule development TCCA continues to act without proper industry consultation and appears to disrespect the concerns of the greater aviation industry. The statement that this NPA constitutes official consultation with the stakeholder is not consistent with the published CARAC process.</p>
8	Anticipated Timelines and Implementation	Disagree	Content requires further consultation. Recommendation that publishing for Canada Gazette be postponed until meaningful dialogue is completed.
9	Proposed Amendments	Disagree	<p>In many cases the description of the proposed changes lacks detail or the text of the actual amended CAR's section.</p> <p>Without further details provided, any comments would be hypothetical.</p>
9	CAR 101.01(1)	Disagree	<p>Changing the definition of IMC and VMC to IFC and VFC effectively decouples IFR and VFR from meteorological limits and introduces a new set of criteria for determining legal flight.</p> <p>Currently no supporting policies or infrastructure to support this change in assessing flight conditions There is no set of tools / products / systems available for pilots to determine IFC or VFC which makes it difficult to understand how new definitions can be introduced. The proposed text of this new regulation is missing therefore making full comment not possible.</p>
9	CAR 101.01(1)	Disagree	Lack of wording provided to understand the definitions.
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9	CAR 400.01	Disagree	No wording for the definition provided for response. Definition should comply with contents of ICAO Annex 10 Volume 1, that describes ground and space-based external navigation aids. If the definition is intended to describe equipment on board an aircraft, the term "Aircraft Navigation Systems" should be used.
9	CAR 401.05	Agree	No Comment
9	CAR 401.05(7)	Agree in principle	<p>This section proposes the addition of "1 hour of instrument time within 12 months" to the current recency requirements for the night rating. Under the current definition of instrument time, which includes simulated instrument time, this is an achievable objective if simulated instrument time with a safety pilot is deemed to be acceptable.</p> <p>Again, the full and final text of the proposed regulation is not included in the NPA leaving the reader to speculate as to what would constitute acceptable "instrument time" for the purposes of recency.</p> <p>No comment on section related to instructor recency.</p>
9	CAR 421.05	Disagree	<p>Affects virtually all non-commercial general aviation pilots. The proposal deletes all knowledge only based methods of recency compliance and introduces a new biannual flight review requirement. This biennial requirement would comprise of one hour ground training and one hour of flight training.</p> <p>This change appears beyond the original stated purpose and scope of the NPA. With no prior stakeholder consultation this raises multiple questions on how this change can be implemented when considering the availability of geographically dispersed flight instructors, and specialty aircraft, required for the recurrency training.</p> <p>No industry consultation held with regards to this change.</p>

			Note: COPA has received significant funding from Federal Government - Public Safety to develop an online system for pilot recency to support reducing SAR responses. This amendment would make this project redundant as this system would no longer meet recency requirements.
9	CAR 401.08(2)	Agree	No comment
9	CAR 421.30(4)	Agree	No comment
9	CAR 421.30(5)	Disagree	Further clarification required. Why reference to Standard 421 “Schedule 1 - Flight Test for the Issuance of a Passenger Carrying Rating – Ultra-light Aeroplane”? Is this reference to “Schedule 4, Section 1 – Prerequisites for the commercial flight test”? If so, what is expectation of qualifying flight?
9	CAR 421.31	Agree	Credit for helicopter simulator included in this section, not mentioned in fixed-wing requirements.
9	CAR 421.42(1)(a)	Agree	No significant comment.
9	CAR 421.42(1)(b)	Disagree	Section requires a definition of qualifying flight.
9	CAR 421	Disagree	Difficult to comment without seeing the text of the proposed change, however this appears to create a difference between “new” night ratings and current “legacy” ratings. This has to be interpreted in conjunction with CAR 602.113 (below).
9	CAR 421.42(2)	Agree	No comment
9	CAR 401.77	Agree	No comment
9	CAR 421.69(3)	Agree in principle	No objections to concept, however increased flight training costs.
9	CAR 421.77	Agree in principle	No objections to concept, however increased flight training costs.
9	CAR 405.11	Agree	No comment
9	CAR 425.21	Agree in principle	Flight Training Units may face operational challenges with new Flight Instructors not sufficiently qualified due to industry turnover.
9	CAR 426.75(1)	Agree	No comment
9	CAR 426.75(3)	Agree	No comment
9	CAR 426.75(5)	Agree	No comment
9	CAR 602.25(2)	Disagree	No content available for review or comment.
9	CAR 602.40(2)	Disagree	No content available for review or comment.
9	CAR 602.113	Disagree	Without actual wording, it is difficult to comment in detail on the proposed amendments. This regulation has the potential to significantly limit daytime operations in reduced visibility and operations at night. Areas of “insufficient lighting” will include most of Canada as a substantial portion of the country

			<p>lacks significant cultural lighting. Additionally, there is no measurable definition provided for “insufficient lighting”.</p> <p>Knowledge/experience requirements for VFR pilots to operate using IFR rules/procedures is not defined.</p> <p>This also increases pilot requirements with annual instrument training component for unusual attitudes required. Does this introduce annual requirements for the currency of a Night Rating? Who is qualified to validate this requirement?</p>
9	CAR 602.114 & 602.115	Disagree	<p>The actual text of the proposed changes is required.</p> <p>These are very important sections of the CARs that describe legal VFR flight in conditions which are currently coupled to weather minima. Decoupling from weather minima has far reaching implications including special VFR, section 602.117, and special air operator certificates, 702.17 (1)(a), which permit operations in reduced visibilities. These issues are not addressed from what I can determine.</p> <p>Lack of standards and infrastructure to measure and report meteorological and lighting conditions for pilots to determine if VFC or IFC exist.</p>
9	CAR 605.14	Agree	No comment
9	CAR 605.16	Agree	No comment
9	CAR 702.17	Agree	No comment
9	CAR 702.18(3)(a)	Agree in principle	Question rationale of decrease in requirement and qualification for IFR. Without detail of a completed risk assessment, difficult to determine if suitable alternative.
9	CAR 722.07(2)(b)(II)	?	CARs reference appears to be incorrect. Unsure how proposal relates to “Chief Pilot Responsibilities” section of the Standard.
9	CAR 702.19(b)	?	No comment. CARs reference appears to be incorrect.
9	CAR 722.19(a)	Agree in principle	No comment. CARs reference appears to be incorrect.
9	CAR 703.27	?	Question wording operating below highest obstacle? Without detail of a completed risk assessment, difficult to determine if suitable alternative.
9	CAR 723.34(1)(b)	Agree in principle	Without detail of a completed risk assessment, difficult to determine if suitable alternative.
9	CAR 704.23(a)	Agree in principle	Without detail of a completed risk assessment, difficult to determine if suitable alternative.

9	CAR 704.29	Agree in principle	Without detail of a completed risk assessment, difficult to determine if suitable alternative.
9	CAR 724.29(1)(b)	Agree in principle	Without detail of a completed risk assessment, difficult to determine if suitable alternative.
9	CAR 705.37	Agree in principle	Without detail of a completed risk assessment, difficult to determine if suitable alternative.
9	CAR 725.37(1)(b)	Agree in principle	Without detail of a completed risk assessment, difficult to determine if suitable alternative.
9	CAR 703.88(3)	?	Question rationale of decrease in requirement and qualification for IFR. Without detail of a completed risk assessment, difficult to determine if suitable alternative.
9	CAR 723.07(2)(b)	?	CARs reference appears to be incorrect. Unsure how proposal relates to "Chief Pilot" section of the Standard.



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July 12, 2021

CARAC

Via email to: CARRAC@tc.gc.ca

Re: Response to Notice of Proposed Amendment (NPA) 2021-007 Minimum Visual Meteorological Conditions (VMC) for Visual Flight Rules (VFR) Flight

INTRODUCTION

The Canadian Owners and Pilots Association (COPA) is the largest Canadian aviation association and the second largest in the world. As the leading voice for the general aviation (GA) flying community nationwide, COPA's mission is to advance, promote and preserve the Canadian freedom to fly. We are proud to represent close to 15,000 members from every province and territory who recognize the need for strong, effective representation resting on our core principles of integrity, commitment, unity and leadership.

COPA has reviewed the subject document in detail and assessed all aspects of this NPA from the perspective of its impact on aviation, most particularly on GA. COPA deems that this NPA will introduce new risks to aviation safety as well as introduce significant costs to this sector of the industry which will impact the Canadian economy at an incredibly vulnerable time.

Our response will address the declared Statement of the Problem and Policy Considerations.

The Statement of the Problem is made with no mention to changing the meaning of VFR flight and wholly focuses on visual conditions at night:

- *The vast geographic expanse of Canada means that most of the country is in areas of insufficient cultural lighting. It is often impossible for pilots to have suitable light to maintain visual reference to the surface to maintain control of their aircraft and to navigate by external visual references. As such, night VFR flying is a combination of day VFR and IFR techniques.*

The Policy Considerations address defining VFR which is outside of the International Civil Aviation Organization's (ICAO) definition, increase in training for night VFR, procedural changes to night VFR, develop a whole new advanced rating system for night VFR which introduces new equipment such as flight displays with Global Positions System (GPS) and SVS (synthetic vision system) which are not included in the proposed changes.

The proposed amendments focused, in large part, on the review of one (of 14) Transportation Safety Board (TSB) report and recommendations.

The NPA failed to include, in its risk assessment, during initial stakeholder Advisory and Consultation (PICA), the most affected group and largest stakeholder group, GA, that represents close to 90% of all Canadian aircraft owners. As a result, Stakeholder impacts were improperly assessed and did not take into consideration the financial impact this would cause to the largest stakeholder group.

This NPA also introduces many other potential revisions to Canadian Air Regulations (CARs) which are not assessed or even addressed and will leave certain proposed policies open ended until such potential changes are addressed in subsequent



NPAs (with no mention of subsequent PICAs).

COPA has many concerns regarding this NPA and is opposed to its proposed changes, as written. Our recommendations will follow our thorough assessment of the proposed amendments, will actually address the safety concerns and propose practicable mitigations to the aviation safety vulnerability brought forth in the Statement of the Problem.

PRELIMINARY ISSUE CONSULTATIONS ASSESSMENT (PICA)

COPA is concerned that when Transport Canada (TC) sought industry input prior to developing this NPA, general aviation (GA), representing close to 90% of all Canadian aircraft owners, was not consulted.

The PICA phase of the CARAC process, which precedes the NPA, should have included COPA. It is through this process that CARAC members, such as COPA, are asked to comment on the assessment of the issue, including the need for focused technical and safety analysis through the establishment of a focus group.

The Preliminary Issue & Consultation Assessment:

- defines the issue;
- notifies stakeholders of Transport Canada's intent to assess possible
- solutions to address an issue;
- determines the need for a focus group; and
- assists in determining the appropriate consultation stream (low, medium or high) with stakeholders.

COPA's input at the PICA phase of this CARAC process would have been instrumental in broadening the scope and offer practicable mitigations to the statement of the problem and Policy Considerations.

TRANSPORTATION SAFETY BOARD (TSB) REPORTS ASSESSMENT

Although several TSB reports were mentioned in the background, this following statement is deemed to be inaccurate:

- *In the past 10 years, there have been 14 relevant TSB accident reports in which issues and concerns with night VFR are cited and where NVIS could have significantly reduced risk or prevented an accident altogether.*

Only one report, the one cited in the NPA, contains a TSB recommendation where NVIS could have significantly reduced risk or prevented an accident altogether. The bias of the NPA towards those who were consulted (only the helicopter sector of the industry, which is very small and distinct and not representative) is obvious.

COPA has done its own review of relevant accidents, of which 11 of the 14 are listed below. In almost every case, the TSB states that pilots found themselves spatially disoriented and unable to recover to VFR or converted to using IFR flying techniques to prevent losing control or flying into the local terrain. These Reports are:

1. A14O0217 – Cessna 150 Collision with Terrain (CFIT) – cross-country flight that got lost and crashed near Algonquin Park
2. A15O0188 – Cessna 182 – Crash shortly after Night Take-Off at Parry Sound. This is a “classic” night VFR blackhole syndrome accident and should have been considered.



3. A1700209 – Cessna 150 – Crash over Lake Huron near Goderich airport. This was another “classic” black hole syndrome with possible aircraft split flap but pilots overwhelmed with night and no horizon.
4. A11W0180 – Cessna 185 – Night CFIT. TSB assessed this as another “black hole” situation, spatial disorientation lack of references at night was a key factor.
5. A12C0141 – Lake 250 – Night CFIT at Pickle Lake (CYPL). TSB assessed this as yet another and earlier example spatial disorientation and the “black hole” phenomena.
6. A13H001 – S-76A Ornge helicopter – the NPA sole referenced event. This one accident caused TSB to make FOURTEEN recommendations, including 406 ELT, training and NVIS.
7. A13C0014 – Cessna 210 – DAY VFR flight into IMC. Day spatial disorientation, equivalent to night black hole was major factor, pilot recurrency training also a factor.
8. A16P0186 – Cessna Citation 500 jet – Night single pilot who did not meet night currency and likely suffered spatial disorientation. TC oversight of private operators was also cited
9. A17C0147 – Piper PA-23 250 Aztec – Attempted to conduct night landing at a private unlit runway in most probably very low light levels in white-out snowy conditions.
10. A18O0153 – Piper PA28R 200 – Night VFR in poor weather and pilot did not exercise good judgement or have valid license.
11. A19O0178 – Piper PA-32 260 – Night VFR in marginal weather with spatial disorientation resulting in LOC-I. This accident was cited by TSB as another example of vague Night VFR rules. No mention was made of NVIS but the TSB did note that TC was going to propose that “would lead to updates to the night VFR requirements and changes that would require 2 levels of night training.” TSB also stated that they had investigated 5 other fatal accidents that highlighted the lack of clarity in the regulations regarding visual references.
12. A19Q0153 – Cessna 172 – Cargair Night VFR flight into IMC twice near CYSC before the pilot under training crashed. Another example, like many above when GA pilots flew into deteriorating weather because of decision bias or ineffective training.

Most notably, the TSB did not propose an accident prevention strategy for these aircraft accidents that was technology driven. The TSB did note in its A19O0178 Report (number 11 above), that TC had advised the TSB that it would be developing a new two-tiered licensing structure and new equipment requirements that would be released in an NPA.

These reports, only one of which is a helicopter accident, demonstrate that when pilots attempt to fly VFR at night there are many weather and lighting (visibility) challenges. This supports the Statement of the Problem but not the proposed regulatory amendments or technology-based solutions for aircraft operators.

POLICY CONSIDERATIONS

Several policy considerations were provided, all of which addressed new requirements for night VFR only. However, the only proposed changes this NPA provides is the definition of VFR flight in controlled and uncontrolled airspace, CAR 602.114 (a) (b) (c) and CAR 602.115 (a) (b), to the current framework. The Proposed Changes make use of statements that are subjective and prescriptive. Most notably and more importantly, the impact to day VFR is as equally impacted however not assessed or even addressed in this NPA.

The Policy Considerations failed to address the impacts of redefining VFR in controlled airspace and uncontrolled airspace with respect to current available weather observations and the costs associated with introducing Night Vision Imaging Systems (NVIS) to its definition.

Introducing NVIS to its VFR at night definition is not only impractical and unreasonable, but it has not even been proven



to eliminate the risk associated with night VFR flight. There are no statistics corroborating the enhanced safety of this proposed change, particularly in fixed wing operations, and more research should be conducted prior to introducing it into a policy change of this significance.

Many of the elements that were identified in the policy considerations, such as increasing training for night VFR ratings, and introducing certain IFR procedures to night VFR were reviewed to address the Statement of the Problem (risks associated with night VFR in areas of the country of insufficient cultural lighting) however this NPA fails to address any of these elements.

WEATHER (VISIBILITY MINIMA) ASSESSMENT

Changing the definition of VFR flight to:

- a) *either by day or night, the aircraft is operated with visual reference to ground or water, including the frozen surface thereof, and objects on the surface that provide a discernible horizon outside of the cockpit to allow the pilot to maintain control of and to manoeuvre the aircraft by external visual reference;*

will make VFR flight planning virtually impossible unless changes to weather reporting is also changed, which has not been assessed in the NPA but proposed to be addressed and assessed in subsequent NPAs.

- *the amendments to sections 602.114 and 602.115 of the CARs” will also require revisions of the weather reporting for VFR flight if no discernable horizon. Additionally, “night VFR rating assessment process and currency requirements ... will be done through a subsequent NPA.*

Since there are currently no weather reporting criteria which includes discernable horizon, pilots could not know, that at any point during their VFR flight, they may encounter periods of flight that would not meet the proposed definition. Transport Canada cannot consider imposing a change without considering all the effects it will cause. As written, pilots will be grounded during the day in marginal VFR and at night until these weather changes are assessed through another NPA and go through the CARAC process. This is unreasonable and directly impacts our freedom to fly.

VFR weather and lighting conditions changes need to be assessed and considered carefully. With current flight visibilities for aircraft as low as one mile during the day and two miles at night, clear of cloud in uncontrolled airspace, pilots have a brief window of time to react to rapidly deteriorating weather. At an average of 120 mph (100 knots), pilots have approximately 30 second during the day and approximately 60 seconds at night to recognize and avoid deteriorating weather.

Many human-factors studies have shown that a typical alert response for the average pilot is 15 seconds, leaving the average day VFR pilot 15 seconds to commence actions to avoid inadvertent Instrument Meteorological Conditions (IMC). The night VFR pilot has a few more seconds (due to the increase training requirements for night VFR) but detecting clouds and obscuring conditions at night is very difficult. Response times will therefore be longer at night. NVIS cannot detect clouds and weather well. In fact, pilots wearing NVIS can fly into IMC with just as little or no warning. Therefore, NVIS technology doesn't increase warning time for deteriorating weather. Day VFR and night VFR weather limits could be increased to enhance safety and avoid inadvertent IMC situations, especially for night VFR flights, without the requirement for NVIS.



NIGHT VISION IMAGING SYSTEM (NVIS) ASSESSMENT

Based on the current Transport Canada definition, NVIS means:

- *an imaging system worn or mounted to the aircraft allowing the pilot(s) to maintain control of the aircraft by visual references to terrain and ground objects as well as providing a discernible horizon. NVIS operations are not equipment specific such as Night Vision Goggles (NVG) or Enhanced Vision System (EVS) but rather **based on equipment performance**.*
- *While NVG and EVS are the most commonly available NVIS, an operator may request to use any existing or future imaging systems such as Combined Vision Guidance Systems (CVGS) or Fused Vision Imaging Systems (FVIS). Such technologies may include a variety of sensors capable of light intensification, thermal imagery, radar imagery, laser imagery, synthetic vision systems (SVS) or any combination thereof.*
- *Any imaging system chosen to conduct NVIS operations must be capable of meeting the requirements as per definitions included herein for VFR Aided and VMC and be accompanied Radio Technical Commission for Aeronautics or Canadian Technical Standard Order documentation.*

Although this NPA proposes the inclusion of NVIS in its definition of night VFR, it makes no mention of defining the equipment performance requirements that defines a NVIS. It is unreasonable for TC to expect stakeholders to provide feedback on the implementation of NVIS in the definition of VFR without considering the performance requirements.

Additionally, according to Advisory Circular (AC) No. 603-001, dated March 31, 2020, special authorization (SA) is still required to operate with an approved NVIS. The SA is mandatory for Canadian air operators holding an AOC issued under Part VII of the CARs and for private operators holding a PORD issued under subpart 604 of the CARs that wish to operate NVIS and is subject to a Risk Assessment and Dispatch Authority Procedures Matrix.

The AC on its own does not change, create, amend regulatory requirements, nor does it establish minimum standards and does not include GA aircraft operators, therefore was not assessed for GA use, yet the introduction of NVIS in the definitions of VFR would significantly impact GA, the majority, by a large margin, of VFR flights in Canada. Additionally, the AC introduces many new definitions that are being used to support the proposed changes in this NPA.

This NPA does not make any mention of the known risks associated with operating with NVIS (as per Flights Safety Foundation: Fatigue, over-confidence, complacency, lighting discipline) or weather minima required to operate with NVIS, flight experience using NVIS and recency/currency.

The introduction of NVIS in the definition night VFR fails to address any of the safety risks associated with its implementation and therefore should not be included in its definition without proper assessment and the consideration of the full potential of its impact.

It is therefore determined that this NPA should not introduce additional aircraft equipment requirements beyond those currently required for flight in either VFR conditions, either Day or Night or IFR conditions.

TRAINING REQUIREMENTS ASSESSMENT

The introduction of NVIS in the definition of VFR flight must take into consideration the implications to training requirements at the time of its introduction. It is unreasonable to introduce NVIS without also introducing the training requirements to meet the ground and flight requirements. This would leave all of general aviation pilots grounded at night in VMC for an undefined and potentially extended period of time which directly impacts our freedom to fly.



All NVIS operations currently come with very specific ground and flight training requirements for commercial and private aircraft operators (does not include general aviation), stated in AC 603-001. This NPA makes no proposed changes to night VFR training requirements, with or without the assistance of NVIS.

Considerations regarding training requirements and standards that will undoubtedly impact CARs Section 4 would be an eventual outcome of future policy amendments, are not addressed or assessed and are well beyond the scope of this NPA. While a few of the aforementioned TSB Reports did cite Pilot Decision Making (PDM) as an important cause factor in these accidents, and COPA would agree that enhancing PDM training is encouraged as a foundation of our Safety Program, these considerations seem to go beyond the proposed changes of this NPA but could address in whole or in part, the Statement of the Problem.

SAFETY RISKS ASSESSMENT

The Statement of the Problem of this NPA is to address the risks associated with flying VFR at night in areas of the country with insufficient cultural lighting. Although COPA does agree that some revised regulations for VFR flight at night could reduce the numbers of incidents and accidents, changing the definition of VFR flight at night to include NVIS will not accomplish this. In fact, introducing new equipment without contemplating revising weather minima, training, currency, proficiency is not only short sighted but will in reality increase the risk to aviation safety.

As mentioned above, AIC 603-001 currently states the training and currency requirements for commercial and private aircraft operators which does not include general aviation, does not change, create or amend regulatory requirements, nor does it establish minimum standards.

Additionally, without a reportable discernable horizon or reportable sufficient cultural lighting in weather reporting systems, visibility remains subjective (“with the naked eye”) and does not address the Statement of the Problem and the risks associated with flying VFR at night in areas of the country with insufficient cultural lighting remain.

FINANCIAL IMPACT ASSESSMENT

The introduction of the requirement of the carriage of (certified) NVIS for night VFR, not only impacts weather reporting changes, training requirements changes but will also have a significant financial impact to a section of the aviation industry which is already heavily burdened by expensive mandatory regulations.

At the present time, there is a new 406MHz ELT mandate coming into effect in 2025 which requires all GA aircraft owners to purchase and install a new 406 MHz ELT. Any new potential equipment requirements will have to be heavily assessed against all current and other future potential equipment mandates. The majority of commercial operators affected by this change and extra equipment could be passed on to their customers, however, for GA, representing close to 90% of all Canadian registered aircraft are, the aircraft owner will bear the entirety of the cost.

Based on an economic impact assessment, conducted in 2017 by InterVistas for COPA, GA contributes over nine (9) billion dollars in economic output nationally and directly accounts for almost 36,000 full time jobs in communities across the country. Any financial impact to this sector of the aviation industry will have a significant impact on the Canadian economy as a whole, which is just starting to recover from the detrimental effects of COVID-19.

No financial impact assessment to Canadian and foreign operators, specifically general aviation, was conducted for the



proposed changes in this NPA. It is unacceptable to introduce new mandatory equipment without as financial impact assessment.

RECOMMENDATIONS

The recommendations herein focus on our assessment of the TC consultation process, the changes to the VFR flight definition and the introduction of NVIS to night VFR as well as the impact it will have on weather reporting, training and finance. The recommendations are:

1. No country has expanded on the definition of VFR flight. TC should collaborate with the International Civil Aviation Organization (ICAO), the Federal Aviation Administration (FAA), and other ICAO compliant countries as well as with leaders in the general aviation community such as COPA, to develop an effective, non-restrictive and objective definition. This change should not be addressed in this NPA.
2. In order to address the safety concerns associated with the risks of night VFR flight in areas of the country of insufficient cultural lighting, the definition of VFR flight need not be changed.
3. To create a much safer environment for VFR pilots flying at night in areas of the country of insufficient cultural lighting, which is the statement of the problem, consideration should be given to changing the training requirements for night VFR, which is outside the scope of this NPA. The definition of VFR flight at night need not be changed for these potential future amendments. COPA should be part of any initial discussions regarding changes in night VFR training requirements.
4. To create a much safer environment for VFR pilots flying at night in areas of the country of insufficient cultural lighting, which is the statement of the problem, consideration should be given to amending the minimum weather requirements for night VFR, which is outside the scope of this NPA. The definition for VFR flight at night need not be changed for these potential future amendments. COPA should be part of any initial discussions regarding changes in night VFR minimum weather requirements.
5. Discernible horizon and cultural lighting need to be defined in terms of visibility and be reportable through aviation weather dissemination tools in order that pilots can flight plan appropriately. Proper initial consultations with affected stakeholders should be conducted. This change is not addressed in this NPA.
6. NVIS operating training requirements and performance requirements are not addressed in this NPA. It is unreasonable to introduce the implementation of new technology to the General Aviation section of the aviation industry without having considered the training, financial and safety impacts. The introduction of NVIS in the definition night VFR should not be included in its definition without proper assessment and the consideration of the full potential of its impact. This NPA should not introduce additional aircraft equipment requirements beyond those currently required for flight in either VFR conditions, either Day or Night or IFR conditions.
7. TC must conduct a proper and extensive financial impact assessment on all operators and stakeholders affected by the proposed changes, such as the introduction to new certified equipment, additional training, changes to weather reporting (NAV CANADA, ForeFlight, Garmin, etc.) systems, etc.



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CONCLUSION

The proposed changes to the regulations introduce several future potential amendments that have not been properly assessed or addressed.

TC must rightfully engage with COPA on aircraft equipage, pilot training, PDM, proficiency, and any other proposed regulatory amendments that impacts general aviator's freedom to fly.

The scope of this NPA fails to address the Statement of the Problem which is the risks associated with night VFR in areas of the country of insufficient cultural lighting. Amending CARs 602.114 and 115 as proposed will not mitigate this risk. It has been determined that changing the definition of VFR flight is not judicious.

We thank you for the opportunity to provide our feedback for this NPA.

Sincerely,

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