EASA CS-ETSO Deviation Consultation ETSO.DevP.01
COMMENT RESPONSE DOCUMENT ETSO.CRD.DevP01
Deviations Requests for an ETSO authorisation for ETSO-C78 (Crewmember demand oxygen masks) & ETSO-C89 (Oxygen regulators demand)
[initial consultation period closed 01/02/2007 extended to 02/04/2007]

DEVIATION COMMENTED	COMMENT / PROPOSAL	AUTHOR OF THE COMMENT	DATE OF COMMENT	PCM RESPONSE
Deviations #1 - #4	This equipment has been in use for many years, essentially unchanged and first obtained similar deviations from the FAA against the TSO C89 in 1973. Rather than persisting with deviations, it would be far better to revise the ETSO/TSO to reflect what has become inter-alia an accepted design standard.	CAA UK	28.02.2007	For 2007 rulemaking programme, ETSO.001 Task focuses on the validation of existing national equipment. For 2008, there is a proposed task related to the systematic review of FAA TSOs and standardisation bodies activities (e.g. EUROCAE, SAE). We hand in the comment to our Rulemaking Directorate for further consideration.
Deviations #1 - #4	In the justifications for these deviations it is stated that the applicant "claims" that the deviation was accepted by FAA. To facilitate approval in Europe, it would have been much better if the application had been supported by documentary evidence of FAA acceptance, rather than by a mere "claim".	CAA UK	28.02.2007	Intertechnique provided evidence of previous approval for: • Deviations #1, #2, #3 and #4 ➔ LODA GE/vk/12/04/Intertechnique, 04/12/1998 ; • Deviations were accepted in 1973 with a limitation at 40,000 feet ➔ FAA LODA MCB/11/26 dated 26/11/1973
Deviation #5	In the justification for this deviation it is stated that the SAE A-10 committee was "exposed" to the Annex 1 study. This statement falls short of saying that the committee endorsed the findings. If the study is to be used as support for the deviation request then there should be confirmation of this committee's approval, or that of an equivalent technical institution. In addition, if this endorsement is valid then there should be some commitment to revise the TSO/ETSO so that these deviations do not need to be perpetuated for another thirty-five years.	CAA UK	28.02.2007	Pr Henri Marotte's study has been reviewed by peers on several instances since its publications in May 2006. No contradiction with the underlying principles has been raised by physiologists so far. This document, **among others**, has been proposed as a basis for

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				fundamental physiological requirements in order to support an aerospace performance standard (AS document) for Cockpit Crew Equipment for use from 35,000 ft to 45,000 ft cabin altitude. It is expected that such a proceeding will probably take at least one year. Therefore, EASA tried to get SAE A-10 and FAA comments before the final SAE A10 Committee publication. See additional information below.
Deviation #5	EASA had initiated coordination with the FAA on all deviations before the formal submittal. The FAA indicated that SAE-10 had comments but that more days were needed to complete the review and consolidate the comments. The review period was subsequently extended up to 02.04.2006. The FAA was contacted again on 24.04.2007. The FAA indicated that a SAE A-10 meeting was scheduled for May the 10th and 11th. EASA waited for this meeting and requested the meeting minutes.	FAA	22.11.2006 11.01.2007 16.01.2007 25.04.2007 11.05.2007 06.06.2007 17.08.2007	A teleconference was organised with the FAA (17/01/2007). The FAA did not send official comments but advised to consult the SAE working group. The commenting period was extended by 1 month on 01/03/2007. It was than decided to wait the meeting minutes of SAE-10 (10th and 11th May 2007). In any case, SAE meeting minutes would not be usable without prior authorisation. There were several models proposed for the further update of the SAE standard, with the model

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				from Pr Marotte being one of those models. If the deviations could be granted, EASA was envisaging including limitations on the approval (assumptions of the model) in order to limit the applicability to the context of the assumptions and not to make a precedent on the overall acceptance of the model in all conditions. In the mean time, the FAA informally commented as accepting deviations #1 to #4 but not #5 and #6. The background was that there was not enough information to find those deviations acceptable at that time, and that it was necessary to await industry consensus on those deviations through the A-10 committee, and revision of the TSO-C89 breathing schedules reflecting this consensus. Indeed, the issue was not only to assess whether the proposed modification was technically acceptable but also whether it complied with the intent of the granting of deviations to CS-

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				ETSOs. Therefore, EASA sought another expert opinion. The objective was to review the assessment made by Pr Marotte to support the deviation requested by the applicant. During the peer review, no technical objection was raised. Several good recommendations were made to improve safety, the main one being that operational rule should force the Flight Crew to preventively wear oxygen mask when flying above a certain altitude (35 000 ft). It was determined that the deviations #5 and #6 were **not specific** to one product but were related to a **rule change**. The conclusion of the meeting was that compensating factors or design features were not provided to allow granting a deviation (as per 21A.610) and that the applicant should approach EASA to initiate an ETSO change. This should close the deviation request process on this product.
Deviation #6	The supporting argument for this deviation claims that the maximum	CAA UK	28.02.2007	The value of 12 in the proposed

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	pressure breathing schedule used by the applicant is higher than the ETSO/TSO one. This is deemed to be beneficial to the crew tracheal oxygen partial pressure. However, the maximum positive pressure (per TSO C89) given for 45,000 ft in the Table under Paragraph (6) of the consultation is incorrectly quoted as 12.0. The requirement at 45,000 ft, as given in Paragraph 4.3(a) of the ETSO/TSO is actually 12.0 ± 1.0, that is a minimum of 11.0 and a maximum of 13.0. Thus at the critical altitude of 45,000 ft the maximum pressure breathing schedule is NOT higher than the ETSO/TSO one, as claimed in the justification. At a value of 12, It is actually below the ETSO/TSO value of 13. Therefore, the written justification is based upon a false premise. Given this EASA must look carefully again at the claim that equivalent safety is shown.			deviation description is in error. The UK CAA is absolutely right. Intertechnique intends to be at the same level of breathing pressure as the value in the TSO for 45,000 ft: 13 inches of water. That means that all the 12 inches of water values in the proposed deviation have to be replaced by 13. When it is explained that the proposed maximum pressure breathing schedule is higher than the TSO one (13 inches of water), it is strictly true for all the altitude below 45,000 ft (at 45,000 ft the proposed value is the same, that is 13 inches of water). That's why this justification had been written. This justification remains applicable for a value of 13. EASA concurs with CAA UK comment regarding the equivalent safety. This is why EASA extended the comment period and sought feedback from FAA and SAE-10.
Conclusion	Deviations cannot be accepted. The applicant has to fill a request for an ETSO change.			