

Comment Response Document
NPA 22-75

After circulation of the NPA to the subscribers, 13 comments were received.

Comments were received from:

BGA (agrees)
LBA (agrees)
CAA Hungary (agrees)
AOPA Germany (agrees)
FAA USA (no comment)
JAA HQ (comment on wording)
CAA Sweden (comment)
Swedish Soaring Federation (comment)
FOCA Switzerland (several comments)
DGAC France (several comments)
ENAC Italy (several comments)
ACG (several comments)
CAA UK (several comments)

BGA, LBA, CAA Hungary and AOPA Germany agreed.
FAA USA had no comments to offer.

No.	Commenter	Comment	Response
1.	JAA HQ	The following terminology is used in the NPA: Towing, aerotowing. Do these words have the same meaning, if so it is advised to use the same terminology for consistency reasons; if not is a definition or explanation of terminology anticipated.	The comment was accepted by the SG and the expression „aerotowing“ is now used consistently through the NPA.
2.	CAA Sweden and Swedish Soaring Foundation had the same comments:	Delete the following: JAR 22.1583 paragraph (k) „(4) Statement that only the sailplane nose hook must be used for the tow.“	This requirement was essential from the sponsor's (LBA) view, as it supports the safety of the pilot of the tug plane. Since the year 2000, this requirement is covered by operational orders of the German air law. So it was possible for the SG to delete this operational requirement from the NPA.
3.	FOCA Switzerland:	The commenter proposed that the performance requirements of §22.51 and §22.65 must be shown at 500 m above sea level.	The proposal was accepted by the SG.
4	FOCA Switzerland:	The commenter proposed to add the following under §22.1307: „It must be possible for the pilot to visually check that the tow cable is properly retracted or jettisoned after the towing phase.“	The comment was accepted but the wording was slightly changed and put under §22.711, as the SG felt it would be more adequate to put this wording adjacent to other close related requirements of this NPA. The wording is now under §22.711 (j): „It must be possible for the pilot to visually check the aerotow cable situation.“
5	DGAC France:	DGAC is not in favour of changing the text without any justification.	The existing lower limit of 500 daN is too high to protect the structure of

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		<p>The deletion of the lower limits of Q_{nom} (500 daN or 1.3 times the sailplane maximum weight) and the decrease in the maximum load from 1.2 Q_{nom} to 1.0 Q_{nom} have to be justified.</p> <p>Should a rupture occur, the weak point should be on the cable rather than on the sailplane itself.</p>	<p>many current powered sailplanes intended for aerotowing. Instead of installing a new value for the weak link, the SG felt it is adequate to leave the value to be chosen by the applicant. The research project „Aerotowing by motorgliders“, performed at the flying school of Unterwössen has shown, that weak links significantly below of 500 daN are sufficient for all operational aspects during performing safe aerotows. Therefore the NPA does not require the minimum values of JAR 22.581. To reflect the comment of DGAC, JAR 22.581(b)(2) has been amended in regard of operational aspects.</p> <p>Regarding the decrease from 1.2 Q_{nom} to 1.0 Q_{nom}, the use of textile ropes is assumed (see 2.2 Note to §22.581 (b) of the NPA). This is consistent with NPA 22C-85 AEROTOWING</p>
6	DGAC France:	Add the following sentence to §22.991 (a): „When the emergency pump is on, an indication must appear on the powerplant desk control.“	An identical discussion was held in the SG when NPA 22F-74 Power Plant Instruments was in the consultation process. In regard of this, in §22.991 (b) the wording „If both the normal pump and the emergency pump operate continuously, a means or a procedure must be provided to indicate failure of either pump“ was chosen. In the opinion of the SG, this covers the concerns of the commenter. The proposal was therefore rejected.
7	ENAC Italy:	The commenter felt that a sufficient rate of climb (RoC) for the aerotow shall be required, suggesting a minimum of 1,5 m/s.	Taking into account the comments of FOCA, a RoC of 1,5 m/s at an altitude of 500 m above sealevel has been introduced into the NPA. This covers the comment of ENAC.
8	ENAC Italy:	ENAC stated also that information about the weights of aerotowing motorglider as well as aerotowed sailplane shall be given in the flight manual.	This was accepted by the SG and introduced into item 6.2 of the NPA.
9	ENAC Italy:	ENAC commented that additional information about performance variations with weight, field elevation and temperature shall be given in the flight manual.	This is seen to be covered by the requirements of item 6.3 and 6.4 of the NPA.
10	ENAC Italy:	Further on, the commenter considered the reliability of the engine. He felt that at least double ignition reliability should be required.	The group felt, there is no need for the requirement of double ignition, as the reliability of a type certified engine was considered adequate. This has been introduced into item 4 of the NPA.
11	ENAC Italy: Subpart B - Flight	The commenter stated that the expression „weight“ instead of „mass“ shall be used.	This was accepted and introduced into the NPA
12	ENAC Italy: Subpart B - Flight	The commenter felt that it shall be stated, that the relevant C.G. positions shall be tested.	The SG thought that the relevant C.G. range will be flown according to §22.21 during these tests automatically, as different loading situations for showing

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			the different weight combinations will be flown. The comment is covered.
13	ENAC Italy: Subpart B - Flight	The commenter felt that a sufficient rate of climb (RoC) for the aerotow shall be required, suggesting a minimum of 1,5 m/s.	Regarding the statement about sufficient performance, the comments of ENAC are covered by the acceptance of the FOCA comments (performance required in 500 m above sealevel).
14	ENAC Italy: Subpart C - Structure	ENAC commented that 22.301, 22.303, 22.305 shall apply for the aerotow.	The comment is covered, as the NPA now states in the „Applicability“, that „the following requirements apply in addition to those in the main code“, which means that all other requirements of JAR 22 also apply. The „Applicability“ of the NPA was amended to cover the ENAC comments.
15	ENAC Italy: Subpart C - Structure	JAR 22.581: The proposed paragraph is not consistent with the corresponding paragraph used for demonstrating compliance for the sailplanes. The main differences are summarised in the following matrix:. (Matrix followed)	Based on the research project of Unterwoessen, a conservative value of 50 daN cable load has been established instead of requiring computation for initial towing loads, based on V_T , which will vary with the different gliders towed. The SG felt it to be adequate to make this simplification only in Appendix K, the need for an NPA to amend the main code was not considered to be necessary. The other comments of ENAC regarding 2.2, §22.581, about strength values and snatch loads are seen to be covered by the response to the comments of DGAC France, which concerned the same issue
16	ENAC Italy: Subpart D - Design and Construction	ENAC commented that 22.601 to 22.611 and from 22.613 to 22.627 and 22.779 shall apply for the aerotow.	This comment is already covered, as the NPA states under „Applicability“, that „the following requirements apply in addition to those in the main code“, which means that all other requirements of JAR 22 also apply. The „Applicability“ of the NPA was amended to cover the ENAC comments.
17	ENAC Italy: Subpart E - Powerplant Installation	ENAC commented that the engine of the aerotowing motorglider shall comply with paragraph 240 of JAR E.	The group felt, there is no need for the requirement of double ignition, as the reliability of a type certified engine was considered adequate. This has been introduced into item 4 of the NPA
18	ENAC Italy: Subpart E - Powerplant Installation	ENAC gave the editorial comment that in §22.991 (a), the words „... fuel if the main pump fails. The power supply ...“ were missing.	Comment accepted
19	ENAC Italy: Subpart G - Operating Limitations and Information	ENAC commented, that the maximum weight of the combination powered sailplane - sailplane shall be incorporated	The comment was accepted (see 22.1583 (k)(3) of the NPA).
20	ENAC Italy: Subpart G - Operating Limitations and Information	ENAC commented, that aerotow speed range information shall be incorporated.	The request for aerotow speed information (22.1583 (k)(2)) has been covered by item 6.3 of the NPA.
21	ENAC Italy:	ENAC commented, that	The request for additional information

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	Subpart G - Operating Limitations and Information	additional information about the aerotowing cable shall be incorporated	about the aerotowing cable (22.1583 (k)(3)) is accepted and introduced into the NPA under 22.1583 (k)(7).
22	ENAC Italy: Subpart G - Operating Limitations and Information	ENAC commented that take-off distances and influence of density on performance shall be given in the Flight Manual.	The SG felt this is already covered, as the NPA states under „Applicability“, that „the following requirements apply in addition to those in the main code“, which means that all other requirements of JAR 22 also apply, e.g. the information requested by the commenter (see JAR 22.1585 and JAR 22.1587).
23	ACG Austria:	ACG, Mr. Andreas Winkler was so kind to visit the LBA in Braunschweig to go through the ACG comments and amend the NPA accordingly. So, the revised NPA gives the harmonized version, covering the ACG comments. The general comments of ACG were the following: Issue an interims policy for towing applicable for JAR VLA, 22, 23 products	This was discussed by the SG, but harmonization was not possible with JAR-23 and JAR-VLA, due to organizational reasons.
24	ACG Austria:	PS not able to taxi alone shall be excluded from aerotowing.	This was accepted and introduced under 1.9 of the NPA.
25	ACG Austria:	The engine certified under JAR 22 App. H shall have dual ignition or show equivalent reliability.	This has been discussed with the commenter and a requirement has been introduced under item 4. of the NPA, that „the engine must be type certified“. (See also the response to ENAC's comments.)
26	ACG Austria:	Towing of more than one sailplane at the same time shall be prohibited.	This was (partly) accepted and a sentence introduced under the notes of the „Applicability“ section of the NPA, that „Aerotowing of more than one sailplane at the same time needs additional consideration“.
27	ACG Austria:	Cable retracting devices are state of the art, the requirement shall be included.	It was discussed with the commenter that such a requirement will be considered again when it is required.
28	ACG Austria:	Banner towing shall be included.	It was discussed with the commenter that such a requirement will be considered again when it is required.
29	ACG Austria:	The noise aspect shall be included in the justification.	This has been accepted and introduced under „Economic aspect/ Safety assessment“.
30	ACG Austria:	The commenter felt that the min. tow speed shall be not less than 1.2 V _{s1} or the min. tow speed of the glider.	The Research work of DLR and Flying School in Unterwoessen has shown, that 1.3 V _{s1} gives the best climb rate. The comment is therefore rejected.
31	ACG Austria:	ACG proposed a different text in 22.1305 (e), requiring a cylinder head temperature indicator or an indicator for the critical temperature determined in the cooling test.	This was accepted
32	ACG Austria:	ACG proposed a different text in 22.1307, requiring a specification of the tow cable.	This was accepted, the text was put under 22.1583 (k)(7), where information about „The specification of the aerotow rope (length, material,

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			weaklink strength)" must be furnished.
33	ACG Austria:	ACG commented that the requirement for aerotowing sailplanes only at the nosehook shall be deleted.	This was accepted, as it is an operational requirement.
34	CAA UK	Introduction: The commenter felt that the tow combination shall be addressed specifically.	The comment has been addressed by changes to the applicability section of the NPA which states that „hereafter the combination is referred to as the „aerotow““.
35	CAA UK	IEM 22.21 Proposal of different text (wording)	Editorial comments were accepted.
36	CAA UK	22.51: Proposal of different text (wording)	Comment about „tow combination“ is addressed by „Applicability“, editorial comment accepted.
37	CAA UK	22.65: Propose different text (wording)	Comment about „tow combination“ is addressed by „Applicability“, editorial comment accepted.
38	CAA UK	22.77: amend the text by the words „... for the range of towed sailplane characteristics for which approval is sought ...“	The comment regarding the determination of speeds for the range of towed sailplane characteristics is covered by item 1.1 of the NPA.
39	CAA UK	22.143: Propose different text (wording)	Editorial comment accepted.
40	CAA UK	The following IEM would also apply. IEM 22.151(c) In showing compliance with both paragraphs (c)(1) and (2) consideration should be given to the controllability of the towing powered sailplane with specific demonstration that the tug is not pitched dangerously nose down nor stalled if the towed sailplane gets high/low.	This comment has been addressed by clarification in 22.151, stating that 22.151(c) and (d) are applicable to the aerotow combination.
41	CAA UK	22.151(e): Propose different text: JAR 22.151(c),(d) and (e) apply also to the tow combination. When the sailplane is undergoing manoeuvres under 22.151(c),(d) and(e), the towing pilot must be able to maintain full control without exceptional piloting skill.	22.151(e): This comment was rejected, as aerotowing powered sailplanes have only 1 towing hook used for towing of another sailplane. For the towed sailplane, the item is already covered by its own certification.
42	CAA UK	22.207(b): Propose different text: (b) an audible artificial stall warning giving a clear and distinctive indication is to be provided for the powered sailplane unless the stall warning is clear and distinctive under normal towing conditions.	The comment to require an artificial stall warning that is audible, is accepted. The SG felt that the reference to the additional workload shall be kept in the NPA.
43	CAA UK	22.307: Propose different text: JAR 22.307 applies to the tow combination.	The comment is covered by the change to the „Applicability“ of the NPA.
44	CAA UK	22.581(a): Propose different text: It must be assumed that the tow combination initially is in	The comment in regard to the „launching“ hook was rejected; this requirement is applicable to the aerotowing hook at the rear of the

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		stabilised level flight and that a towing cable load of 50 daN (in the absence of a more rational analysis) acts at the launching hook in the following directions:	aerotowing powered sailplane.
45	CAA UK	22.581(b): Propose different text: „ ... suddenly increases to 1.2 Q _{nom} .“	An identical comment was received from ENAC and DGAC. Please see above.
46	CAA UK	22.581(a) Tow cable: If only textile towing cable is assumed to be used, this should be an AFM limitation.	The comment is covered by paragraph 6.2 22.1583(k)(7) of the NPA.
47	CAA UK	22.581(b): Propose different text: (b) it must be assumed that the tow combination is initially ... (2) Q _{nom} is the rated ultimate strength of the weak links to be used for the towed sailplanes.	Editorial comments accepted and incorporated.
48	CAA UK	22.711: Propose different text: JAR 22.711 applies also for the <u>towing</u> powered sailplane.	Comment concerning clarification was accepted.
49	CAA UK	22.711(h): Propose different text: (h) Release mechanisms for sailplanes must be installed so that there is no interference between the tow rope and any flying surface throughout their full angular movement, with the towed sailplane in any position as defined in JAR 22.581(a).	Editorial comment accepted, except the word „flying“ control surfaces, because of consistency with the main code.
50	CAA UK	22.711(i): Propose different text: (i) The release mechanism of the towing sailplane must be suitably protected against loss of reliability due to corrosion and general degradation by mud and dirt, etc.	Comment accepted except the word „corrosion“, which is covered by 22.609 in the main code.
51	CAA UK	22.713(c): Propose different text: JAR 22.713(c) is applicable to the release mechanism of the towing sailplane, where more than one launching hook is fitted.	Editorial comments accepted, except the comment regarding more than one hook, because this is already covered by the main code.
52	CAA UK	Subpart D - Note: The requirements of Appendix K do not constitute all the requirements necessary to cover the installation of cable retracting devices. The Authority should be consulted if it is intended to install such a device.	The comment was rejected as the SG felt the current NPA text is clear.
53	CAA UK	22.991(a): Propose different text: (line missing in text - re-instated by commenter)	ENAC made an identical comment, see above.

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54	CAA UK	22.991(b): Propose different text: (b) If the normal pump and the emergency pump operate continuously, a means must be provided to indicate malfunction of either pump.	Comment rejected. The comment is identical to a comment of DGAC, see above.
55	CAA UK	22.1047: Propose different text: JAR 22.1047 must be applied to the towing sailplane.	The comment is rejected. The additional requirement is intended to ensure that cooling is adequate for the aerotowing powered sailplane during aerotowing.
56	CAA UK	22.1307: Propose different text: An easily removable rear-view mirror of sufficient strength and rigidity must be attached and so located that the pilot, when seated with the seat belts fastened, has full and unobstructed view of the towed sailplane in any position as defined in JAR 22.581(a). It must be possible to observe the towed sailplane without other pilot's tasks being affected and without major turning movements of the head.	Editorial comments are accepted, except the deletion of the word „permanently“, which is considered necessary due to the high workload associated with aerotowing.
57	CAA UK	22.1529: Delete paragraph.	The Study Group considers that although compliance with the requirements of JAR 22.1529 will already have been shown during the certification of each aircraft, changes to maintenance information to address aerotowing aspects may be necessary. Compliance with this requirement needs to be shown for aerotowing operation.
58	CAA UK	22.1583: Propose different text: JAR 22.1583 is amended	The editorial comments regarding 22.1583 have been incorporated in the NPA.
59	CAA UK	22.1583(k)(3): Propose different text: The minimum value for the maximum ...	The editorial comments regarding 22.1583 (k)(3) have been incorporated in the NPA.
60	CAA UK	22.1583(k)(4): Delete paragraph The statement that only the sailplane nose hook must be used is a limitation for the towed aircraft, not the tug, and should be deleted. It is permissible to tow gliders using either hook.	This comment is the same as a comment from CAA Sweden and Swedish Soaring Foundation, see response above.
61	CAA UK	22.1583(k)(5): Delete paragraph	Motorgliders are towing with minimum weight, so their minimum speed might be considerably lower than that of the towed glider (especially if the glider is loaded with water ballast). A recent accident involving a microlight aerotowing a glider was caused by the microlight lifting off before the glider. This will be prohibited by 22.1583(k) (5). Therefore the proposal was rejected.
62	CAA UK	22.1583(k)(6): Propose different text for clarification.	The comments regarding wording of this requirement have been addressed in the NPA.

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63	CAA UK	22.1583(k)(7): Propose different text.	The comment concerning the wording of 22.1583(k)(7) is the same as a comment raised by ACG, see response above.
64	CAA UK	<p>22.1585: Propose different text. JAR 22.1585(a) is to be applied to the tow combination.</p> <p>(g) The minimum towing speed and the best-rate-of-climb speed for the tow combination must be furnished. Furthermore, sailplane types whose relevant characteristics are comparable to those of the types used in the flight test must be furnished as examples.</p> <p>Reason: It is not seen why „as far as applicable“ is here and only (a) is relevant. The remainder of the text is better added as sub-para (g) to 22.1585.</p>	The commenter felt that only paragraph (a) was applicable to the aerotow. The SG felt that all requirements of 22.1585 should be addressed to ensure that any changes due to the intended operation, such as special manoeuvres, are covered. The NPA has been amended to state „as far as applicable for the intended operation“ to clarify the reason for the requirement.
65	CAA UK	<p>22.1587(c): Editorial comment</p> <p>The commenter felt that the additional information required for compliance with this requirement should be included as a new paragraph of the requirement.</p>	The Study Group considers that as this additional requirement relates to take-off performance information, the requirement should be included under 22.1585(c), which is already covered.