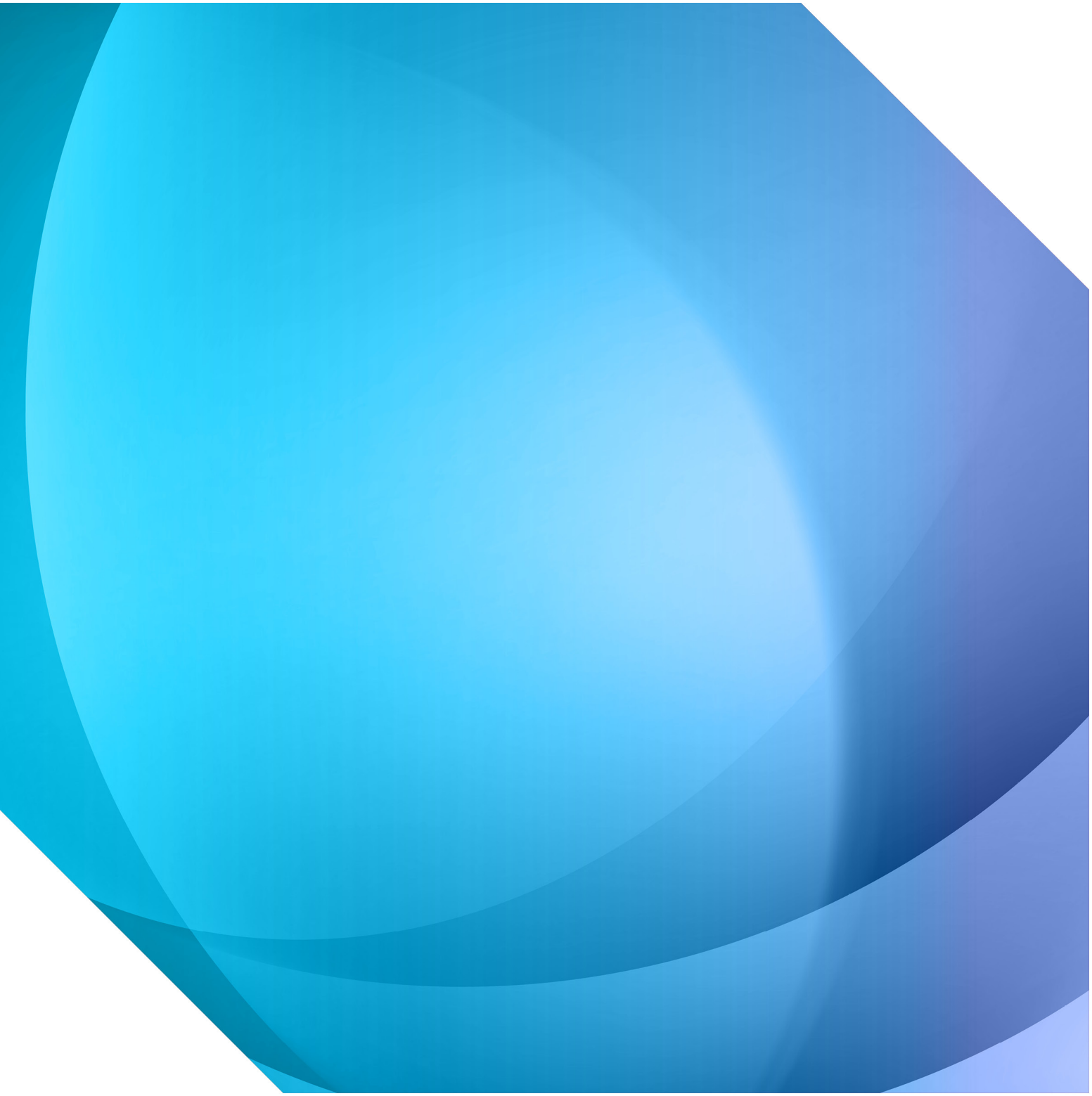
Non EASA fleet aircraft: Industry consultation on seat harness / belt lives

Comment and response document

CAP 1757



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Consultation Response	CAA's Comments
I would object to mandatory life for harnesses especially if there is no demonstrated risk arising from accident investigation or from history of failure in use. The useful life of harness must vary considerably depending on whether storage is in direct sunlight and the amount of wear and tare in use. This appears to be an area where the judgement of an appropriately informed inspector is particularly relevant.	The demonstrated risk that prompted this consultation is outlined in SN-2018/005 and also in the consultation's overview. Comments noted.
The idea of allowing automotive harnesses such as Willans etc is a good one, each FIA approved harness has a life span tag stitched to the upper belts, usually this is 3 years, I would consider it an acceptable replacement if this life span is observed as per motorsport regulations.	Relevance of manufacturers stated life noted.
Why do we need to do this at all? Car seat belts (highly similar technology and materials) are not life-limited in this way, they are inspected for integrity and safety as part of the annual MOT test. Permit aircraft undergo annual inspections, and the integrity of their seat belts should be inspected at that time. Moving to a mandatory replacement cycle seems disproportionate, adding yet more cost to the ownership of aircraft. And if we do get forced to take this disproportionate and unnecessary step, a 10 year replacement cycle is way too short.	The demonstrated risk that prompted this consultation is outlined in SN-2018/005 and also in the consultation's overview. Comments noted.

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Please can you provide the data to show there is actually a problem? How many have failed i.e. broke especially ones that looked fine, that were not snagged on the annual inspection. a. In normal use, b. As a result of in flight forces e.g. turbulence, aeros, c. In a crash where belt failed but structure did not. I do understand that some old belts made from natural fibres do age and loose strength, just like cotton or linen fabric, but so not synthetics unless left exposed to UV when they will gradually degrade but usually discolour first and fray through adjusters, stitching etc. The mechanical degradation such as fraying stitching edge fibres etc. is more likely to determine replacement than loss of strength. One of my aircraft has ex MOD seat belts from 1960s that show no sign of degradation and I am sure are still stronger than structure they are bolted to. A tensile test could be defined but there are many types of end fittings and as I said the structure is likely to be the limiting factor if tested in situ and to what load should they be tested? In my experience the corrosion of metal fittings, adjusters and catch plus wear on latches is likely to be more of a problem than loss of strength of a seat belt. If there were a serious problem then it would have been thrown up by failures in old cars which are subjected to far more abuse than an aircraft and tend to be lighter construction. Yes inertia mechanisms fail but I do not believe the belts do else there would be a thriving OEM seat belt replacement industry. Of course this is not to be confused with those used in competition cars and replaced on a major rebuild because the old ones were dirty. Please do not impose another extra cost unless there is clear evidence there is a problem that the annual inspection will not pick up.	The demonstrated risk that prompted this consultation is outlined in SN-2018/005 and also in the consultation's overview. Comments noted.

Consultation Response	CAA's Comments
While support from the regulator would be welcomed in regulating seat belt life to some extent, a hard 10 year life for all would be inappropriate. Currently, with Non-EASA aircraft that do not have a regulated seat belt life, it can be hard for maintainers to insist to an owner/operator that the belts need replacing when there is no regulation to back us up and the seat belt look in reasonable condition but are 30+ years old! As is often the case. CAP 562, leaflet 25-40 requirement for batch testing of harness for integrity is not realistic. Certainly, an annual inspection for integrity should be mandatory with a back stop ultimate life of 20 or 25 years, straight away this would replace the majority of the harnesses in the UK GA non-EASA fleet I think. Depending on how an aircraft is kept will directly affect the life of the harness. Comparing outside parking with no cockpit cover to inside a dry hanger with a cover on to block UV, these will give 2 vastly different conditions for the harnesses and affect ultimate life each way by many years. I have changed many harnesses on the EASA fleet prior to MIP that were 10 years old and where in near perfect condition. Of course, we still have to consider the actual failure rate and this is only likely to come to light as a result of an accident. In summary, I would welcome some appropriate support on Harness inspection and ultimate life, certainly 25 years should be a hard stop and complemented by an MPD.	Agreed Leaflet 25-40 is more orientated towards a transport aircraft and is therefore not appropriate in this area. Noted suggestion of hard-backstop.
Our group operates a Chipmunk from ********; we are happy to continue with our seat belts on condition, they are inspected by an LAA inspector annually. The aircraft has a cockpit cover and is kept hangared and fly's about 50 hours a year. A service life, would unnecessarily shorten the life of our seat belts.	Noted.

Consultation Response	CAA's Comments
I am unable to comment on behalf of LAA owners but I have owned CAA, non EASA aircraft for over 50 years. Many of those were ex MoD and came with the RAF blue four point harness. The policy with these was to examine the fabric and stitching of the harness, make an assessment of their condition and include that as something to do at each annual inspection. When I had G-1 and G-2 rebuilt 1 was fitted with new harness from Seat belts Inc., whilst 2 had most of a Seat Belts Inc. harness (some had been nicked and had to be replaced) and these came with a more synthetic type of webbing, without the stitching found on Z harness. The factors that need to be consider are : Aircraft utilization, Type of flights and aircraft storage. The requirements for a club aircraft, doing 2 -300 hours per annum. Which might be achieved for something like a Tiger Moth doing pleasure flights must always be different from a private owner aircraft, kept in a dry hangar and doing maybe 30 hours a year. 1 had rear seat belts only but 2 has full harness, however in neither case was the rear seat normally occupied, in fact for 1 I can only think of about six trips that I did when one of the rear seats were occupied and on the majority of flights I was actually flying solo and otherwise the aircraft was kept in the hangar at ***** or *****. Aircraft kept outside probably require closer seat belt inspections. Annex Two aircraft are maintained in an environment controlled by a licenced engineer. I strongly suggest that rather than have a set of rules dictated by somebody in an office in the Belgrano and coming from a CAT background any concerns should be addressed by means of guidance note to licenced aircraft engineers.	Noted.

Consultation Response	CAA's Comments
I have a personal interest as the owner and operator of a **** autogyro, G-****. Although quite an old aircraft in calendar years, it has only **.* flying hours logged. The seat harness (four straps) is as old as the aircraft, but a visual inspection shows almost no wear and my examination before the last annual inspection using a powerful lens gave me no cause for concern. The Inspector was wholly content. I submit that it is the condition of a seat belt that matters, not its age. I learned to fly when a CCF cadet in Tiger Moths fitted with Sutton harnesses that must have been twenty years old but were in good condition and useful when demonstrating one's skill at spinning to a critical instructor or examiner. I drive an old car and frequent donning and doffing has scuffed the edges of the harness. At the last MoT inspection I asked about this because I did not want the car to be off the road pending the arrival of a new harness. The inspector informed me that he was only concerned with the strength of the harness, and although it had deteriorated cosmetically, its strength was very close indeed to that of a new harness. Premature replacement of seat belts increases the cost of flying without any commensurate improvement in safety or pilot performance. Please do not introduce mandatory replacement of harnesses on calendar age. On flying time, perhaps. Replacement every two thousand flying hours might be a good idea.	Noted. Visual deterioration of harness not just cosmetic, it can be an effect of material deterioration that affects strength.

Consultation Response	CAA's Comments
I always favour good practice and advice over regulation due to the inflexibility of regulations in regards to inspectors using their judgment as you allude to. Very rarely is the failure caused by lack of regulation. Aviation is already one of the most highly regulated environments, and unless new technology, processes, procedures or materials are involved there is generally no need for new regulation, the proper application of the existing should suffice. Indeed there is nothing new about seat harness degradation, it's been happening ever since they have been used i.e. for at least the last 100 years! In my opinion failure of the airworthiness system in these cases are due to a failure to implement or adhere to the existing regulations, guidance and good practice, etc.. This failure is due to one of two things. a) wilful disregard or b) lack of knowledge or appreciation of the factors involved. Wilful disregard can only be tackled by enforcement. From the picture of the seat harness in the yak 52 accident, it is quite clear to any inspector worth their salt, or indeed I would suggest by most lay persons, that that harness is seriously suspect and has been so for a good number of years. Was any action taken against those responsible for signing the aircraft off I wonder? Without enforcement what tends to happen is that those inspectors and owners doing a good job within the existing regulations and good practice are then penalised by new regulations, whereas those who ignore current regulations and good practice continue to do so regardless of how much more you introduce. Therefore the gap between the gooduns and baduns increases making the later ever more competitive, driving more customers their way etc, etc. The only way to prevent this is to enforce the existing regulations and good practice rather introduce new ones. I am very pleased to see that recently the GA department appears to have more teeth than it did in the past – this can only be a good thing. A lack of knowledge we can do something positive about. There are quite possibly some misnomers out there that can be addressed. For instance it may not be appreciated that synthetic fabrics deteriorate, in many cases, much more quickly than natural fabrics in UV/ sunlight. The vast majority of factors effecting the serviceability of a harness should be readily apparent by visual inspection, with the exception perhaps of some chemical and temperature related degradation (though in both these cases there is likely to also be some related visible clues). Please don't give us any more regulations. Good advice and targeted enforcement are most welcome however.	Noted.

Consultation Response	CAA's Comments
Unusually for EASA the liberal provisions of CS-SC153b - part of CS Stan, Part 21, already offers for EASA aircraft some alleviation from certain draconian and arbitrary prescription of TC holders. Viz Cessna and the 182 (in respect of harness life) It would be of the utmost simplicity if CAA could be persuaded to adopt (without conceding any credit to EASA) ALL of the provisions of CS Stan thus sweeping away the medieval minor/major mod philosophy which has forbidden responsible owners from installing modern safety critical equipment without laborious and expensive supplication to CAA. For the considerable number of UK Annex 2 aircraft with North American provenance, AC-43-13 must be respected as approved data which curiously CAAIP is not. EASA destroyed several dedicated and highly proficient Harness overhaul agencies with the imposition of AD No.: 2013-0020R4 thus giving OEM suppliers a market which quickly became dominated by greed. Harness condition is pretty easy to assess by fraying, colour degradation, contamination, stitching failure, buckle and fastening corrosion so that the decision of an appropriately licenced Engineer or LAA inspector, NOT to release dubious components for Service or Flight should be considered enough impetus to induce responsible owners to take note, always with the option of seeking a second opinion. Perhaps a GR dedicated to harnesses, rather in the same vein as GR 24 (and to INCLUDE ELA1 aircraft!) giving extension to a mandated 10 year life would allow indefinite extension to service for those harnesses which suffer little use or abuse.	Please see CAA CAP1419 re. minor modifications to non-EASA aircraft. This CAP includes a mechanism to enable the use of CS-STAN for standard changes and repairs on Non-EASA aircraft, including the use of CAA Form 123 to act as the embodiment record. Note that EASA is responsible for providing equivalent guidance (CS-STAN) to EASA aircraft and thus a CAA GR couldn't carry-over to ELA1 aircraft, though a GR for Non-EASA aircraft harnesses is an interesting one. The CAA will endeavour to ensure the existence of CAP1419 is well promulgated.

Consultation Response	CAA's Comments
We addressed the seat harness problem on our fleet some 15 or so years ago by obtaining limited permission to re-web ****** type harnesses. This permission was, and still is I guess, limited to Permit aircraft and for our own aircraft only. Incidentally we did at the time re-web the 45 year old harness on our Chipmunk but as it was on a C of A at the time (no choice back then) our surveyor made us remove the new harnesses and refit and ancient ones! It took a couple of years to get permission to make a new harness for that and two other C of A aircraft in our care! I would also strongly support the move to allowing suppliers such as Willans or indeed our-selves (Not that I see it as a revenue stream for us as we are too slow at making them to compete!) to make or indeed refurbish harnesses and an easy approval system with minimum cost and paperwork for all. One of the reasons that I'm against mandating a hard life for harnesses is that the application can vary enormously. For instance I would be cautious about a 20 year-old harness in say a Spitfire even in perfect visual condition as it is a high energy aircraft with substantial harness anchor points. We have the same Z type harness fitted in the **** which is a very low energy aircraft and the most substantial structure on which to anchor the harness is ½" square section spruce longerons! Therefore, I would be happy with a significantly older harness being used in this aircraft. Our harness re-webbing approval allows us to go to 15years before having a portion of the fleet leader's harness tested to destruction to ascertain the typical reduction in strength in our service. Incidentally this is coming up this winter and I will be very interested in the results which I'm happy to share. The webbing used on the Z type harnesses has a minimum strength requirement of 29000N. When we had our stock, manufactured in 2000, tested in 2006 it was a minimum of 19% over min strength (failed at 34560N), we tested our stock again in 2012 its average strength was 32437N i.e. reduced to 12% over the minimum. On this very limited evidence, the stock material (kept in cool storage, completely out of sunlight) the strength reduction appears to be about 1% per year. I'm not sure what the forward g requirement for say Spitfire is but the old BCAR Section K specifies 9g forwards for emergency alighting conditions. CAA Spec. No1 iss 6 Safety Belts gives 670N/g for each member so on this bases the harness webbing at min new strength should be good for 43g with no safety factor	Respondent same as response 8. The points raised in this response are of interest. The CAA will endeavour to discuss further with this respondent and would be keen to see the results of the respondents testing this winter, however noting that this would only represent one specific type of harness.
It would seem sensible to have inspection/replacement periods, which bear some relationship to the use and storage condition of the aeroplane. That is to say for how many flying hours the belts have been fitted and whether the aeroplane is hangared and/or protected from UV. Any condition set should certainly be less than any current requirement to replace seat belts in a CoA aeroplane. The best solution may be to leave it to the discretion of Licensed Engineers/LAA Inspectors,	Noted.

Consultation Response	CAA's Comments
I hold an NPPL SSEA and TMG together with an SPL with FI(S) Rating and I would like to offer a few simple observations on the debate of creating a component life for aircraft seat harnesses: 1. As the proposal document describes, different harnesses in different fitting configurations will have different lives. Unless specific lives are determined for each type, fitting configuration etc, any life set will have to be the shortest one applicable and may impose a change significantly earlier than necessary for some types / configurations. Not only is this expensive to aircraft owners but is unnecessarily wasteful in an era when we should be promoting better use of resources and reduction of waste. 2. If a life cycle replacement point is set owners, inspectors/engineers etc will only focus on the life cycle replacement and may not focus sufficiently on the actual condition of the components. 3. There are significantly more car mile journeys made per year and more car occupants killed or injured each year compared to the aviation industry in general and general aviation in particular. Most cars sit outside for a considerable part of the daytime and are exposed to the same levels of sunlight. I'm not aware of any proposals to life seat belts in cars where the potential risks of needing to use them is statistically a lot higher. I feel that the aviation industry should be looking at other more important areas to continually improve an already high safety record and allow engineers / inspectors / owners to make a subjective assessment of the continued condition of the components.	Noted.

Consultation Response	CAA's Comments
I am currently the owner of two Annex II (non-EASA) sailplanes, one built in 1950 and the other in 1965. They were both acquired for nominal sums of money because they required work to make them airworthy. They are now airworthy under the auspices of the British Gliding Association. I have also been involved in restoring a 1950's built two seater glider for our gliding club. The seat belts of all these sailplanes are of unknown age and have been accepted by the inspectors "on condition". All the aircraft I mention above are stored either in closed trailers or hangered when not being flown. They are also flown infrequently. In your discussion document you suggest that these points could be "adjustment factors" to any age limit but without a baseline age they could probably not be applied. Any fixed age limit would presumably mean that all the belts would require replacing immediately since no age could be established. This might well double the cost of the aircraft and mean that the aircraft would be economic write offs – clearly not a desirable outcome. I would therefore strongly object to mandatory lives for seat belts. Having read SN 2018/005, I consider that the recommendations made cover the topic very adequately. I also believe that gliding inspectors have sufficient common sense and experience to assess the condition of seat belts and mandate replacement when required without further regulation.	Noted the content. It is likely that a review of SN 2018/005 will take place with the aim of including increased guidance.

Consultation Response	CAA's Comments
While we can understand the temptation to 'life' safety harnesses, we think that this should be a last resort (if safely operating on condition is found to be impossible). Our experience of blanket calendar life limits for indeterminate environmental degradation is that they are generally unsatisfactory: not short enough for the worst case, and too short for the vast majority. In the case of safety harnesses, the degradation of concern is due to UV exposure, which is only weakly dependent on flight hours. The BMAA experience of attempting to correlate the UV-degradation of polyester covered wings with reported storage conditions is that it is highly unreliable. We note that instances of safety harness failure raised by the AAIB are for aircraft with safety harnesses made from unconventional materials – see Note 1 below. These materials had significantly less original strength than modern polyester safety-harness webbing, and were consequently significantly less tolerant of losing strength in service. The automotive safety harness webbing typically used in modern aircraft (including all aircraft in the BMAA fleet – see Note 2 below) is significantly stronger than necessary – see Note 4 below. It can therefore afford to weaken significantly before becoming unairworthy. We wonder whether there is sufficient automotive experience that retiring modern polyester safety-harness webbing by inspection is satisfactory – see Note 3 below. If possible, we would like to see better inspection criteria for safety harness webbing. This might use the bleaching that results from UV exposure (and the fact that there is always somewhere on a harness that is protected from UV light to compare against). As an aside, the BMAA has significant experience of assessing the residual strength of polyester wing coverings using NDT – in particular the Betts test. It may be worth investigating whether a similar test could be used on harness webbing, or harness stitching, to give an indication of deterioration.	Thanks for the detailed response, the contents of which are noted. The calculation provided in paragraph 4 is interesting, although this represents failure / loading in pure tension. In the U.S, SFI Foundation (not for profit organisation that sets standards for safety equipment in the American racing industry) conducted a series of dynamic testing on a variety of harness samples. This also featured testing including the phenomenon of 'dumping' (polyester harness) where the belt is pulled significantly to one side of the adjustment device - this phenomenon can occur in a dynamic situation and can reduce the breaking strength of the harness to as low as 35% of the original strength in pure tension. The reserve factor could therefore be further reduced to 2.4 for a new poly harness. This figure does still provide a considerable reserve.

Consultation Response	CAA's Comments
1. Observations on previous cases of failed harnesses The two AAIB reports that we're aware of involving safety harness failures are: a. AAIB Report EW/C97/8/9, Tiger Moth, G-AOBJ b. AAIB Report EW/C2016/07/01, Yak 52, G-YAKB The Tiger Moth had an 'original' canvas and leather Sutton harness. Although built in 1992, the Yak 52's harness was not made of the materials that a 'western' design would have used at that time. The new strength of this harness (estimated as 900 kgf in the report) is significantly lower than automotive safety harness webbing (see Note 4 below). The Yak 52 harness was significantly bleached and could have been removed from service prior to the accident (at least with hindsight) on this basis. Does the AAIB have any experience of failure of 'modern' (polyester webbing) safety harnesses? 2. Notes on safety harnesses on BMAA aircraft All BMAA aircraft date from the early 1980s or later, and are fitted with automotive safety harnesses (or harnesses made using automotive safety harness webbing). Our safety harnesses are currently operated on condition. The BMAA fleet has its fair share of survivable accidents and – as far as we are aware – no unexpected safety harness failures. 3. Notes on automotive safety harnesses The MOT safety test assesses the condition of the harness webbing by visual inspection only. Automotive safety harnesses are not generally lifed, and this appears to be satisfactory. Does the DfT have access to data on safety harness failure in ageing vehicles in road accidents? 4. Reserve factor estimate on automotive safety harness webbing used in aircraft Occupant mass = 120 kg (19 stone); deceleration = 9g. Lap belt and two shoulder straps that attach to lap belt.	

Consultation Response	CAA's Comments
40% occupant mass restrained by shoulder straps (i.a.w AC 43.13-2B 924b). Shoulder strap tension = 1/2 x 0.4 x 120 x 9 x 9.81 = 2119 N. Lower body decelerative force = 0.6 x 120 x 9 x 9.81 = 6357 N. Lap strap reacts shoulder strap tension and lower body decelerative force. Lap strap tension = (2119^2 + (6357 / 2)^2)^0.5 = 3820 N. Typical breaking strength of 2” (nom.) safety belt webbing = 26.5 kN (https://westwardropeandwire.co.uk/50mm-seat-belt-webbing-blue.html). Estimated original RF = 6.9	

Consultation Response	CAA's Comments
I am not in favour of mandating lives of safety harnesses for a variety of reasons, the main one being my experience with TNS (Moth) 45 Schroth Harness Mod:158. This harness originally had a 12 year life on the webbing, when it came to do this the manufacturer eventually said to my colleague that everything had to be changed, metalwork as well, regardless of the use or condition and they had to do it themselves. In our case it meant a hardly used Tiger Moth (less than 10 hours a year) requiring a replacement harness. The manufacturers subsequently put a 5 year life for aerobatics regardless wether they had been used for aerobatics previously or not. GQ put a 10 year shelf life on their harness including the metal parts decades ago. The cost then was £700 just for the buckle. It should be noted that in the case of a Tiger Moth for example there is no life on the longeron the harness is ultimately attached to. Th supply situation is difficult enough as it is I see no justification for the many to be disadvantaged by the few who do not maintain their a/c in an appropriate manner. Legislation clearly doesn't guarantee compliance. I would suggest the requirements laid down in Para: 2 of SN2018/005 is entirely appropriate considering the wide range of a/c, harnesses and conditions in which they are installed and used.	Noted. It is likely that SN 2018/005 will be subject to a review with the objective of increasing the level of guidance provided.

Consultation Response	CAA's Comments
The suggested imposition of a calendar life on all pilot restraint harnesses fitted to Annex 2 aircraft and gliders based on the failure of the harness in a YAK aircraft is considered an over-reaction to the situation and would impose an unnecessary burden on the owners of such aircraft. The CAA Safety Notice SN–2018/005 covers the maintenance of harnesses very well as does the British Gliding Association's Airworthiness and Maintenance Procedures Part 4, Leaflet 4-8. The webbing used in the harness that failed in the YAK is in my opinion not fit for purpose in the first place. Any degradation of the webbing - as has been suggested in the case of the YAK accident - is going to make the harness pretty useless under the ultimate loads put upon it in an emergency situation. I have seen and handled this type of webbing and it is almost elastic in nature, it certainly does not feel 'solid' as it tends to give slightly when pulled by hand. The inspections called for in both the above mentioned leaflets are more than adequate to maintain the UK's fleet of Annex 2/Permit aircraft and gliders in good condition. The CAA leaflet states: 'The determination of what constitutes an acceptable, or unacceptable, level of deterioration is the responsibility of the authorised person performing the maintenance task'. That statement assumes that the 'authorised person' has the ability and education to inspect restraint harnesses and thus relies on the integrity of that person. We rely on the integrity of aircraft engineers and glider inspectors to carry out various maintenance tasks to keep our aircraft safe in the air - we do not impose lives on the components they inspect 'just in case they get it wrong'. Imposing a life on harnesses also seems to be going against the grain when considering EASA aircraft and the arrival of the Self Declared Maintenance Programme (SDMP) where the owner can self authorise the extension of any life/TBO imposed upon a component by the manufacturer. We now see TBO's for propellers, hydraulic hoses, fuel hoses and so on all being extended by the owners so is it necessary to put a life on a non-EASA harness when the TBO of an EASA harness can be extended by the owner if he/she wishes to do that. In my opinion the two afore mentioned leaflets are more than adequate to ensure safe Pilot Restraint Harnesses. Education of owners, engineers and inspectors is the answer to the perceived problem of unserviceable harnesses. In my opinion the two afore mentioned leaflets are more than adequate to ensure safe Pilot Restraint Harnesses. Undoubtedly, if all the harnesses in the UK fleet were inspected tomorrow, there will be a number that are unserviceable and a few that are totally unsuitable for the task they are being asked to do. However, the imposition	The inclusion of the BGA's Airworthiness and Maint. Procedures Pt4, Leflet 4-8 is of note. It is likely that the CAA will review SN-2018/005 with the view to improving it's level of guidance. During this, the referenced document will likely be of use. The CAA notes the disparity that a finite life on harnesses could bring when considered with the SDMP for EASA aircraft. CAA also notes the response that a finite life could encourage less focus on the actual condition of the harness, with authorised personnel relying on the life-limit.

Consultation Response	CAA's Comments
of a life/TBO on harnesses will be a disproportionate response. Some people will take the meaning of a calendar life to mean that the harness will actually last that long. Of course a harness in a training aircraft will be subjected to more punishment than a harness in a privately owned aircraft/glider, where a harness can easily remain serviceable for more than 12 years. Education is the answer, not regulation. In conclusion, the imposition of a life/TBO on harnesses will not eradicate the use of serviceable but unsuitable harnesses, nor will it prevent harnesses remaining in use despite becoming unserviceable prior to reaching an imposed life. The third party risk associated with the (rare) occurrence of a harness failure must be negligible, if indeed measurable. We oppose the proposal to apply a life/TBO to non-EASA aircraft harnesses.	

Consultation Response	CAA's Comments
We have already discussed the topic at length with CAA and last year contributed significantly to the content of the CAA's Safety Notice, in fact we regard the project as a joint exercise between CAA and LAA which LAA has totally engaged. The main gist of our input has been to strongly discourage the adoption of any arbitrary life limit on harnesses, because the effect of age on many harnesses (especially those made from man-made fibres) will be trivially small, and such things as the utilisation of the aircraft, how it is stored, damp, chemical attack, UV light, the design of the end fittings etc will have a much greater significance to the long term airworthiness state of the harnesses. The key points, therefore, are for owners, to encourage best practises being followed to avoid degradation in harnesses, for inspectors, the thorough condition inspection of harnesses in the field, and for manufacturers, provision of appropriate continued airworthiness advice in maintenance schedules, maintenance manual etc. The LAA encourages the provision of improved guidance about the inspection of harnesses, and is involved in setting up a test programme with an Aerospace University to explore the effect of various types of degradation on harness strength, which we hope will yield useful data to help give substance to inspection guidelines in the future. LAA looks forward to continuing the project with the CAA as it develops, and sharing in the dissemination of ideas and for LAA aircraft, participating in the decision-making processes arising out of the consultation.	Noted. CAA will continue to engage with the LAA on this topic moving forwards.

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