October 7, 2024

U.S. Department of Transportation
Docket Operations, M-30, West Building Ground Floor, Room W12-140
1200 New Jersey Avenue SE
Washington, DC 20590

Subject: Piper Aircraft, Inc. Comments to the Notice of Proposed (NPRM), Docket No. FAA-2024-2142, Project Identifier AD-2024-00033-A

Background

For more than 85 years, Piper Aircraft, Inc.'s highest priority has been the operational safety of our products and the people that fly in them. Throughout its history, Piper has earned one of the safest records in the global General Aviation community, has one of the best Air Safety Investigation teams in the industry, and has consistently worked closely with the FAA and NTSB in determining the root cause of accidents and incidents involving any Piper produced aircraft.

Piper manufactured the PA-28/32 wing spar, at issue in the above referenced NPRM, from 1961 until 2023, which has been installed in more than 40,000 aircraft. Domestically, over 20,000 of those aircraft remain airworthy, continuing to fly in safe operations, remain dependable, and continue in service today fulfilling diverse needs across the entire GA landscape. Via this letter, Piper Aircraft, Inc. is responding directly to the NPRM Docket No. FAA-2024-2142.

Piper wants to clarify its position as it relates to:

1) General areas of disagreement with the NPRM as published in the docket; and
2) To provide clarification, factual data and details that refute certain assumptions, provide context and contrast with opinions expressed by the FAA in this NPRM

Previous AD

In 1987, the FAA issued an Airworthiness Directive (AD) mandating a one-time inspection of PA-28 and PA-32 series aircraft. This inspection involved removing both wings and conducting a visual and dye penetrant inspection of the lower spar cap. During this process, 559 aircraft were inspected, resulting in two (2) reports of cracks. Both cracks were from aircraft that operated in severe environments – more specifically, severe usage and severe abuse, resulting in high loads on the wing spar. On May 22, 1989, the FAA made the justified decision to rescind the AD, citing that performing the inspections could damage the wing spar bolt holes resulting in premature fatigue and failure of the wing spar, and therefore the safety benefits did not justify the inspection costs. The justifications provided by the FAA at the time, remain valid, relevant and compelling today.

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1989 FAA Rescission Justification #1

- "… would necessitate the removal and reinstallation of high tolerance critical wing spar attachment bolts; and, that if this was not done carefully, such process could cause damage to the wing spar cap material that could in turn result in a **future fatigue failure**."

Current Condition #1

- The same concern over damage to the holes still exists today, and likely to a greater extent. Piper has provided countless repairs to fielded aircraft due to damage caused by improper removal of wing spar bolts. To minimize this effect, complicated and lengthy procedures have been included in SB No. 1372. However, the fact remains that when these bolts are removed, damage may and has in fact occurred.
- Damage is expected with this inspection routine; therefore, SB No. 1372 was developed to accommodate oversize hole conditions. The FAA accurately recognized that more frequent inspections lead to increased damage, potentially resulting in fatigue failures caused by the inspections themselves. As inspection intervals shorten, mechanical damage will escalate, leading to premature fatigue failures. This creates a self-perpetuating cycle that will only worsen as damage accumulates and the need for inspections intensifies.

1989 FAA Rescission Justification #2

- "The fatigue life of a joint is highly dependent on the quality of the hole. Removal and replacement of tight-fitting bolts can create stress risers which result in earlier than usual fatigue failures."

Current Condition #2

- While there is no known correlation between inspections of the ~560 aircraft from 1987-1989 to the known eddy current indications observed from AD 2020-26-16, it is a noteworthy point that increased bolt removal frequency also increase the chance of future indications which could lead to future fatigue failure. The FAA specifically warned about future fatigue failures as a result of the removal and replacement in 1989.
- As recently as January 14, 2022 the FAA specifically cited in correspondence, "Hole quality issues caused by maintenance issues have shown to cause premature fatigue crack nucleation" but has chosen to ignore their own recommendations now.

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1989 FAA Rescission Justification #3

- "There are airplanes in the fleet with 19,000 plus hours' time-in-service (TIS) that complied with the inspections of the AD and reported no cracks found."

Current Condition #3

- The fleet of aircraft with 19,000 plus hours TIS and no cracks has increased significantly in the last 35 years. Likewise the overall fleet age with no cracks continues to increase. One operator reports a fleet of 11 PA-28-181 Archer II's ranging in age from 22-47 years old, with no cracks, operated in a flight training environment, with four (4) aircraft over 23,000 hours TIS (CSH is equivalent) and one aircraft with a max time of over 41,000 hours with no cracks.

1989 FAA Rescission Justification #4

- "Fatigue tests were conducted on a full-scale test article in the late 1950's and early 1960's prior to certification of the PA-28. These tests were run to the equivalent of 300,000 unfactored cycles with no failure. The FAA has carefully reviewed all of the available information…"

Current Condition #4

- In the late 1950s during the development of the PA-28, the wing spar joint was fatigue tested. At that time in history, fatigue testing was not a common occurrence and not a regulatory requirement. The FAA personally witnessed the first 70,000 plus cycles and the test went past 300,000 cycles with no fatigue failures. While this fact was highlighted in the NPRM from the late 1980s, it has not been given consideration now and was omitted from the NPRM discussion. The results and validity of the test have never been disputed by the FAA.
- Operating the aircraft within the defined limitations in the POH will result in an aircraft service life without failure, consistent with the structural fatigue test. Piper SB No. 1372 is conservative to this, requiring recurring inspections, however the FAA's approach is to ignore this logical conservatism and instead make it even more conservative. However, as noted above, taking this more conservative approach of requiring inspections more often, will likely cause more damage resulting in a higher likelihood of fatigue and therefore fatigue cracks.

1989 FAA Rescission Justification #5

- "Striation counts on the fracture surface of the spar cap removed from one airplane showed that it would require extraordinary stress levels to produce the growth rate found. Airplanes operated in a normal general aviation type environment would not be exposed to sufficient loads to create these high stress levels. Therefore, it is concluded that the cracks found were isolated occurrences and those **failures are not likely to exist or develop in other PA-28 series or PA-32 series airplanes operated in a normal manner**."

Current Condition #5

- Independent (non-Piper) crack growth analysis performed in 2021 by the USAF A-10 Aircraft Structural Integrity Program showed that to analytically calculate a PA-28 aircraft life of less than 25,000 hours, the aircraft would have to be operating in a severe (Survey Gust, AC23-13A) environment or worse, and/or have a significant defect in the hole beyond industry standard values.

1989 FAA Rescission Justification #6

- "… the cost of this inspection is extremely high or the safety benefits were not commensurate with the cost of the inspection. The FAA agrees."

Current Condition #6

- This NPRM requires an eddy current inspection technique that is more costly than the previously defined visual and dye penetrant technique. As noted herein the costs of these inspections will be borne by the entire fleet of aircraft in service today, which the NPRM does not address.

Summary of Fleet Inspection Findings

Over the history of the aforementioned 40,000 aircraft produced, with an estimated 200 million flight hours in all forms of usage from personal to severe (per AC23-13A), **there are a total of eleven aircraft that have been confirmed by metallurgical exam to have cracks as outlined in this NPRM**. Three (3) of these aircraft are those cited from the late 1980s when the FAA rescinded the proposed AD. In an effort to provide full transparency we include the following history of these eleven (11) aircraft below:

The first group (1-3) discussed are from the late 1980s as a result of AD 87-08-08.

1) **PA-28-181 (S/N 28-8090115)**
    - 1987 Marlin Texas accident that instigated AD 87-08-08. NTSB examined the spar.
    - Aircraft was operated in a pipeline patrol **(severe usage)** environment.

2) **PA-32-300 (S/N 32-7240076)**
   - Crack discovered during AD 87-08-08 inspections. Metallurgical exam from Piper's consultant lab.
   - Piper/FAA investigation showed airplane was **heavily modified** with landing gear per STC #SA281AL, large tires, struts over inflated to expose more strut, wheel and brake conversions, **numerous entries of landing scissors being replaced, and a host of damaged structure replaced over time.**

3) **PA-32-300 (S/N 32-7340109)**
   - Crack discovered during AD 87-08-08 inspections. Metallurgical exam from Piper's consultant lab.
   - Piper/FAA investigation showed airplane was **heavily modified** with landing gear per STC #SA281AL, large tires, struts over inflated to expose more strut, wheel and brake conversions, **numerous entries of landing scissors being replaced, and a host of damaged structure replaced over time.**
   - Some of the damage to the airplane was the result of the hangar that the aircraft was stored, collapsing and falling on the aircraft

In 1993 in Provincetown Massachusetts a PA-28-181 had an accident with the NTSB investigating (NTSB Case No. NYC93FA140). The spar was analyzed by a metallurgist from the NTSB (Report No. 94-34).

4) **PA-28-181 (S/N 28-7990103)**
   - Probable cause of accident was **attributed to weather with signs of structural overload.**
   - A fatigue crack was noted by the factual report; however, several other discrepancies were noted with the aircraft. **This crack was located outboard of the wing attach bolt that is in question with this NPRM AD-2024-00033-A and therefore, it is not the same condition.**
   - The NTSB's Metallurgist's report cites that the **RH aft wing attach bolt did not appear to be installed** as there was no hole damage in the aft wing attach lugs that would be present if a bolt was installed.

In 2018 in Daytona Beach Florida a PA-28R-201 had an accident associated with flight training that instigated AD 2020-26-16. The following are those aircraft that were inspected as a part of the AD (including EASA), Service Bulletin and accident investigation.

5) **PA-28R-201 (S/N 2844XXX)**
   - Fatigue crack was confirmed by NTSB factual report No. 18-061.
   - Aircraft was used for flight training
   - 7690.6 hrs. TIS / 33,276 landings

6) **PA-28R-201 (S/N 2844XXX)**
   - Fatigue crack was confirmed by NTSB factual report No. 18-061.
   - 'Sister' aircraft to accident aircraft above, aircraft was used for flight training
   - 7660.7 hrs. TIS / 33,288 landings

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7) **PA-28R-201 (S/N 2844XXX)**
   - Fatigue crack was confirmed by NTSB factual report, NTSB No. ERA18FA120
   - At the time of the inspection the aircraft was owned privately however it was owned by the same flight school from 5 and 6 above, for 7 years previously
   - TIS = 9378.4 hrs.

8) **PA-32-300 (S/N 32-7940XXX)**
   - Piper microscopy exam confirmed crack, **spar was never examined with Scanning Electron Microscope (SEM) to confirm or deny the presence of fatigue**.
   - **Aircraft had a damage history** involved in previous incident
   - This aircraft is the basis for the inspection time of a separate proposed rulemaking action, NPRM Docket No. FAA-2024-2143
   - **Wing was replaced and crack was discovered on the installed salvage wing of unknown TIS but with ~8,000 hrs. on this airframe, Total airframe TIS = 15,580 hrs**

9) **PA-28-181 (S/N 2881XXX)**
   - Independent metallurgical exam confirmed fatigue crack, unknown initiation
   - Aircraft was operated in a flight school environment
   - TIS = 4156 hrs.

10) **PA-32-300 (S/N 3240XXX)**
   - Aircraft was inspected as a part of AD 2020-26-16 and a piece of the spar was sent to the NTSB for further evaluation.
   - NTSB factual report, NTSB No. ERA18FA120 states the **crack is a result of "ductile overstress fracture" and there is "no evidence of fatigue"**
   - Aircraft has a damage history, involved in previous incident
   - TIS = 5318.9 hrs.

11) **PA-28RT-201T (S/N 28R-7931XXX)**
   - Fatigue crack was confirmed by NTSB factual report, NTSB No. ERA18FA120
   - **Aircraft has unknown history**
   - TIS = 5858.5 hrs.

Comparison of Inspection Findings

As previously stated, a total of 559 aircraft were inspected as of January 6, 1988, in response to the 1987 AD. Among these, two cracks were identified during inspections, alongside the accident aircraft from Marlin, Texas, yielding a confirmed percentage of 3 out of 559, or 0.537% of the fleet. In the current inspection efforts (post-2018), including those related to AD 2020-26-16, we conservatively found six (6) confirmed cracks (one aircraft PA-32-300 was found to not be fatigue). This quantity considers aircraft 5, 6, 7, 8, 9, 11 above as cracks. Given the fleet inspection size of approximately 3,100 aircraft today, a confirmed percentage of 6 out of 3,100, equating to just 0.194% is determined. The percentage of cracks in the fleet is lower today - **less than half of the rate recorded in 1989 when the AD was rescinded.**

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Areas of Disagreement

Issue #1

The following statement in the NPRM is not technically accurate.

“Finally, new wing spars are available from Piper that have machined the spar dihedral bend instead of the cold bending process, eliminating the residual stress factor in these spars. These new wing spars have a different life limit and will not require any inspections.”

Piper has been delivering PA-28 aircraft with machined spars since 2019. This change was implemented due to increasingly longer lead times from extrusion suppliers and was provided as an alternate to the extrusion. Many of these spars are contained within the effectivity of the NPRM and will require the inspections, however the quantity and/or serial numbers are unknown. In 2023 Piper introduced a spar assembly that utilizes this same machined spar configuration and incorporates additional details (angles). This spar assembly is effective for Archer S/N 2881688 and up, and Pilot 100i 28020149 and up, which will not require the inspections as defined in this NPRM. Therefore, it is incorrect to state machined spars do not require inspections as those before Archer S/N 2881688 and Pilot 100i 28020149 will require these inspections regardless of whether the spar is an extrusion or machined.

Issue #2

The following statements mis-characterize the extent of collaboration between Piper and the FAA.

“Both the FAA and Piper attempted to determine an inspection program that would manage risk to an acceptable level using inspection alone; however, no method could be found that did not eventually require spar replacement.”

“The FAA has worked with Piper to develop the specific timing for these actions using actual service data to determine current and future risk of fatigue cracks developing, and analysis using the physical properties of the structure to estimate formation and growth of cracks in the critical area of the spar.”

While it is true that the FAA and Piper worked together to determine an inspection program, the FAA rejected the proposals put forth by Piper. Throughout this process, Piper Aircraft has consistently supported the FAA's efforts while formulating a conservative corrective action plan. **The FAA requested extensive data and analysis, and Piper delivered countless pages of comprehensive documentation, most of which appears to have gone unused by the FAA.** To meet these requests, Piper engaged both internal and external experts, ensuring compliance with every data requirement.

Damage tolerance analysis was completed and delivered, guided by AC 23-13A and as requested by the FAA. In comments received on this analysis the FAA stated, “As part of the review of this analysis, it was noted that the flight spectra used out of AC 23-13A, though directed to use for damage tolerance analyses, may be overly conservative and may be leading to inaccuracies in the calculation of damage tolerance-based repetitive inspection intervals.” The FAA specifically noted that **the Piper analysis may be**

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overly conservative and requested it be updated for different spectra which was promptly completed by Piper. Even after this analysis update, the FAA rejected the analysis for general use, limiting its application solely to the repetitive inspections for a reinforcement kit.

The FAA opted for a direction not supported by current publicly available advisory documents, employing a different analysis technique. In contrast, Piper's damage tolerance analysis adhered to established advisory materials and fatigue spectra as defined by the FAA, resulting in different recurring inspection intervals that were ultimately ignored in favor of more conservative methods. Despite the FAA acknowledging that Piper's analysis "may be overly conservative," they chose an even more conservative approach.

Piper has not been afforded an opportunity to review and check the FAA calculations and analysis that were completed to get to the proposed corrective action in this NPRM. Throughout this process, FAA management made multiple agreements to provide transparency regarding the analysis that never came to fruition. While a high-level overview was provided, it was in no way adequate to provide Piper with a reasonable degree of confidence in the FAA program used which could be referred to as a "black box", since the inner workings of the program were obscured and unknown to the users. The detail of the high-level overview does not meet the standard of engineering substantiating data that would be required for a finding of compliance in any other instance, and therefore Piper cannot support the FAA's findings. If Piper, or any other manufacturer for that matter, had provided the same high-level overview to the FAA or a DER for a finding of compliance, it would have been rejected for lack of substance and the inability to peer check the calculations to ensure it is error free.

Issue #3

The method to determine CSH allows for hours to be accumulated faster than reality.

To determine inspection intervals the NPRM relies on establishing a new term, Calculated Service Hours (CSH). The intent of this term is to take the hours an aircraft operated in a flight training and personal usage environment and normalize to be the number of hours the aircraft was operated in the flight instruction environment alone. Utilizing the equations as defined in Figure 1 and 2 of the NPRM, allows for the calculation of CSH to be greater than TIS for values of N greater than TIS divided by 100. **Calculating in this manner provides for an opportunity for the aircraft to have more CSH than it has actual time on the aircraft. This should be an impossibility where CSH should never be greater than TIS. See the following example.**

An operator has 5000 hrs TIS on the aircraft all of which were operated as "flight instruction for hire" as described in 14 CFR 91.409(b). This operator was required to have 50, 100-hr inspections but likely inspected more often than that based on the typical intervals used by such organizations. If the operator did 50 inspections exactly the CSH would be the following:

$$\text{CSH} = (N \times 100) + [T - (N \times 100)]/3 = (50 \times 100) + [5000 - (50 \times 100)]/3 = 5000 \text{ CSH}$$

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If instead the operator inspected more frequently than every 100-hrs, and instead did 53 inspections in this amount of time averaging every 94.3 hrs the CSH would be the following:

$$CSH = (N \times 100) + [T - (N \times 100)]/3 = (53 \times 100) + [5000 - (53 \times 100)]/3 = 5200\ CSH$$

It is not rational that calculated service hours can be accumulated on an aircraft quicker than the actual number of hours (TIS). In this calculation the operator is penalized for doing more frequent 100-hr inspections through an earlier retirement life and more frequent spar inspections. The result would encourage extending the time between inspections to perform the inspections less often. Piper is currently revising SB No. 1372 to a revision A to prevent this occurrence with the rule, CSH must be less than or equal to TIS.

Furthermore, for ease of use and decreased risk of error, the equation to determine CSH should be revised to be in the form as specified in SB No. 1372. The NPRM states, "This calculation is the same as the simplified calculation specified in Piper SB No. 1372, but with a different form…" There is no rational reason to keep the equation in an admittedly more complex form. Doing so does not promote operational safety, when using the simplified equation published in Piper SB No. 1372 has not been shown to be incorrect or susceptible to user error.

Issue #4

It is not appropriate, nor is it rational to base inspection times on a single airplane which will dictate the inspection program for the entire fleet of aircraft in the field.

The NPRM states that "The FAA has worked with Piper to develop the specific timing for these actions using actual service data to determine current and future risk of fatigue cracks developing, and analysis using the physical properties of the structure to estimate formation and growth of cracks in the critical areas of the spar." It then later goes on to state that "This new finding required the FAA to adjust the Group 1 inspection schedules to earlier times to ensure a similar crack would be found in time."

Analysis performed must be accomplished with good data of known pedigree to establish reliable results. Weibull analysis was performed on the full data set by both Piper and the FAA. While an advantage of Weibull analysis is that it can be performed with a very small sample set, the smaller the sample set is the more conservative the results will be, without known factors that represent the failure mode being investigated. **Piper consulted with Weibull analysis experts to do the analysis independently which was shared with the FAA and produced different results. These results were rejected by the FAA, who chose a path of additional conservatism requiring more frequent inspections as described in the proposed AD.** Despite the high confidence of the FAA with these calculations, the inspections have been further modified apart from previous analysis to capture anomalous fatigue indications, on a single aircraft, without any consideration for whether the inspection routine is reasonable and makes sense in the light of all other data from the 60 plus years of service history. **The fleet service data now is not being utilized and instead a single aircraft is being utilized to determine the inspection schedule.**

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This proposed inspection schedule in the NPRM requires an initial inspection at 3,000 CSH for Group 1 as opposed to the initial inspection at 4,500 CSH for Group 2. **In the case where aircraft are used for flight instruction in both of these groups the initial inspection at 3,000 CSH for Group 1 is not rational. This is supported by the statement in the NPRM that speaks to both groups.** "The airplane models discussed share similar spar structure, while one group (Group 2) experiences higher operational loads than the other, due mostly to differences in gross weight and maximum airspeed." This statement is true and does not support the FAA decision to require an initial inspection for Group 1 at a lower time than Group 2. **The initial inspection time for Group 1 must be greater than Group 2 as Group 1 is the same general spar design but has lower operational loads.**

Issue #5

On-condition costs do not accurately portray the overall cost of the action and the "install modification (reinforcement) kit" is described as a per wing spar cost but is shown as a per aircraft cost.

In the table showing on-condition costs it states that there are 190 work-hours per main wing spar. When this figure was provided it was intended to be a per aircraft labor cost. Therefore, the total labor hours quoted in the table per main wing spar should actually be 95 work-hours. This same situation is true for the parts cost where $4,000 is said to be the per wing spar cost but is actually the per aircraft cost. In addition, since the information was provided, Piper has been able to improve the cost of the parts from $2,000 per wing spar to $1,250 per wing spar.

Within this NPRM the FAA states "The agency has no way of determining the number of airplanes that might need these actions." Due to the inability of the FAA to produce an estimate and because of the magnitude of this proposed action, logical assumptions must be made to aid in fleet and operator impact. For instance, the labor cost quoted in this NPRM is $85 per hour. Piper monitors domestic shop labor rates across the country to determine an average labor rate of $141 per hour. The labor rate used in the NPRM is severely underestimating the total cost. Therefore, to provide a more accurate assessment, all cost calculations in this document will utilize the realistic figure of $141 per hour.

The following data shows the estimated economic impact to the fleet for the minimum and maximum scenarios. The total domestic fleet size is quoted as 10,665 aircraft. Looking at current data, Piper estimates approximately 2/3 of the domestic fleet is part of Group 1 and 1/3 is part of Group 2. For Group 1 airplanes, assuming the airplane follows the inspection schedule precisely over the 25,000 CSH life, there would be 16 inspections with a per inspection cost of $1,184 ($600 for eddy current + $20 parts + 4 work hours*$141 per hour). For Group 2 airplanes, assuming the airplane follows the inspection schedule, precisely over the 12,000 CSH life, there would be 19 inspections with a per inspection cost of $1,184.

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Action	Group	Estimated Domestic Fleet	Cost Per Aircraft	Cost per Group	Total Cost
Inspection	1	7146	16 inspections x $1184 = $18,944	$ 135,373,824	$ 214,537,248
	2	3519	19 inspections x $1184 = $22,496	$ 79,163,424	
Install modification kit (Group 1 only)	1	7146	$ 18,650	$ 133,272,900	$ 133,272,900
Replace main wing spars	1	7146	80 work-hours x $141 per hour + $21,966 part cost = $33,246	$ 237,575,916	$ 354,568,590
	2	3519	80 work-hours x $141 per hour + $21,966 part cost = $33,246	$ 116,992,674	
Replace both wings	1	7146	$ 140,214	$ 1,001,969,244	$1,495,382,310
	2	3519	$ 140,214	$ 493,413,066	

The estimated economic impact of just performing the inspections on the entire fleet over the life of the airplane is at a minimum, the summation of the Inspection row and the Install Modification Kit row for a total of **$347.8 million**. Note these figures assume a best-case scenario, whereby there are no repairs needed for “holes with non-crack damage”. As complications arise during the removal and/or installation of parts, the cost escalates with the complexity of the repair that is shown by the escalating costs associated with replacing wing spars and/or replacing wings. This analysis ‘book ends’ the estimated costs whereby **the actual cost is expected to be between $347.8 million and $1.5 billion**.

This proposed rule will disproportionately affect the training fleet, imposing significant maintenance costs and requirements that will permanently burden future flight students. Lower-cost preowned aircraft that are popular and needed in today’s flight training environment, such as the PA-28-151, PA-28-161, and PA-28-181, will be significantly impacted. The installation time for the wing spar kit will ground many of these aircraft, straining flight schools and potentially forcing several to cease operations. The economic impact of ceasing these operations is neither quantified nor considered in the calculations presented.

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Conclusion and Recommendations

Piper Aircraft, Inc. reaffirms its longstanding commitment to operational safety and the reliability of our aircraft, particularly the PA-28/32 wing spar that has served the aviation community for decades. Piper has identified significant areas of disagreement with the proposed rulemaking, Docket No. FAA-2024-2142. Through this response, we have provided detailed information, evidence and context that challenge certain assumptions made by the FAA and underscoring our position.

1. The FAA rescinded prior rulemaking in 1989 for valid reasons that remain valid today.
2. The inspection data does not support the FAA's assumptions and conclusions that resulted in an overly conservative inspection interval in the FAA's proposed AD. The percentage of cracks in the fleet is less than half what it was in the past.
3. Data clearly suggests the cracks are the result of an operational issue related to usage, not and issue with the design or materials.
4. Failures are not likely when operating aircraft within POH limitations.
5. Hole damage (particularly from inspection) has a significant impact on fatigue life and can cause premature failure.
6. Acceptable analytic approaches for inspection have been rejected by the FAA.
7. The FAA chose to deviate from previous agreements on a path forward and mischaracterized the level of collaboration and agreement between Piper and the FAA.
8. The FAA's Calculated Service Hours approach is overly complex and unnecessary in comparison to the method provided in Piper SB No. 1372.
9. Easier to follow solutions have been rejected by the FAA in favor of the more complicated.
10. The FAA has thus far been unwilling or unable to adequately substantiate its position and justification for issuance of this NPRM.

Piper Aircraft Inc. recommends the FAA reconsider their position as presented in Docket No. FAA-2024-2142, and similar to what occurred in 1989 when the FAA issued a similar NPRM which was later rescinded, or at a minimum align the current NPRM with the approach presented by Piper in SB No. 1372 and the upcoming revision.

Respectfully Submitted,

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