Airworthiness Directive

Federal Register Information

Header Information

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [60 FR 28702 NO. 106 6/2/95]

Docket No. 92-CE-63-AD; Amendment 39-9251; **AD 95-12-01**

Airworthiness Directives; Piper Aircraft Corporation PA-25 Series Airplanes

PDF Copy (If Available):

Preamble Information

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes Airworthiness Directive (AD) 93-21-12, which currently requires inspecting (one-time visual and dye penetrant) the wing forward spar fuselage attachment assembly for cracks or corrosion on certain Piper Aircraft Corporation (Piper) PA-25 series airplanes, and replacing or repairing any cracked or corroded part. This action requires repetitively inspecting (using ultrasonic and dye penetrant procedures) the wing forward spar fuselage attachment assembly for cracks or corrosion, replacing or repairing any cracked or corroded part, and reporting to the Federal Aviation Administration (FAA) the results of the inspections. This action is prompted by the FAA's lack of confidence in detecting internal corrosion in the wing forward spar fuselage attachment fittings while accomplishing the inspection methods required by AD 93-21-12. A report of a crack in the wing forward spar fuselage attachment assembly on an airplane where the inspection requirements of AD 93-21-12 were accomplished also prompted this action. The actions specified by this AD are intended to prevent possible in-flight separation of the wing from the airplane caused by a cracked or corroded wing forward spar fuselage attachment assembly.

DATES: Effective July 7, 1995.

ADDRESSES: Information that applies to this AD may be examined at the FAA, Central Region, Office of the Assistant Chief Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri 64106.

FOR FURTHER INFORMATION CONTACT: Christina Marsh, Aerospace Engineer, FAA,

Atlanta Aircraft Certification Office, Campus Building, 1701 Columbia Avenue, suite 2-160, College Park, Georgia 30337-2748; telephone (404) 305-7362; facsimile (404) 305-7348.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to Piper PA-25 series airplanes was published in the **Federal Register** on January 20, 1995 (60 FR 4119). The action proposed to supersede AD 93-21-12 to require repetitively inspecting (using ultrasonic and dye penetrant procedures) the wing forward spar fuselage attachment assembly for cracks or corrosion, and replacing or repairing any cracked or corroded part. Accomplishment of the proposed actions would be in accordance with the APPENDIX included at the end of the AD.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

A number of commenters recommend a longer inspection interval for the affected airplanes, specifically:

o Four commenters recommend that the FAA establish a more frequent inspection interval for those airplanes operating in agricultural conditions. Two of the commenters recommend utilizing the proposed two-year inspection interval for those in agricultural operation and a longer interval for those in non-agricultural operation;

o One commenter recommends that the repetitive inspection only apply to those airplanes in agricultural operation;

o One commenter recommends a repetitive inspection interval of 2,000 hours time-in-service (TIS);

o Six commenters recommend a 10-year repetitive inspection interval;

o One commenter recommends a 5-year repetitive inspection interval;

o One commenter recommends a 3 to 5-year repetitive inspection interval for those airplanes in non-agricultural operation;

o One commenter recommends a 5-year repetitive inspection interval for those in NORMAL category operation; and

o One commenter recommends a repetitive inspection interval of 5 years or 2,000 hours TIS, whichever occurs first.

The FAA analyzed and evaluated all available information relating to the Piper PA-25 series airplane wing forward spar fuselage attachment assembly crack and corrosion condition when establishing the repetitive inspection intervals. Based on this information, no correlation exists between the type of operation that these airplanes are utilized and the time it takes for corrosion to develop. The AD compliance time, including the repetitive inspection interval, is unchanged as a result of these comments. However, the FAA is adding a reporting requirement to the final rule as a method of further analyzing this condition on the PA-25 series airplane fleet. Based on this data, the FAA may adjust the repetitive inspection interval in the future.

Three commenters feel that AD action is unjustified because the Piper PA-25 series airplane

design is no different than that of any other airplane constructed with a steel fuselage frame. While there are literally thousands of airplanes constructed with steel fuselage frames, each airplane series or model is unique to its own type design. AD's are issued to correct an unsafe condition that exists or could develop on a specific type design aircraft. The FAA continuously analyzes the data of each specific type design aircraft to determine whether an unsafe condition exists or could develop for a particular airplane. Regardless of how many AD's exist on other airplane type designs utilizing steel fuselage structures, the FAA has received sufficient data to justify issuing an AD to require repetitive ultrasonic and dye penetrant inspections of the wing forward spar fuselage attachment assembly of the Piper PA-25 series airplane type design. The AD is unchanged as a result of these comments.

Seven commenters feel that there is an increased potential for causing damage to the airplane during the disassembly and re-assembly necessary to accomplish the repetitive inspections. The commenters' main concern is the repeated removal of the close-tolerance attach bolts every two years. The FAA concurs with the idea that frequent disassembly and re-assembly of the airplane provides the potential for damaging the airplane, as is true for removing any component to facilitate inspection. However, the FAA considers the removal of PA-25 series airplane close-tolerance bolts within the skill requirements of a mechanic certified in accordance with part 65 of the Federal Aviation Regulations (14 CFR part 65), and that a mechanic certified in this manner can assemble and disassemble the airplane in a non-damaging manner. The AD is unchanged as a result of these comments.

Two commenters state that the probability of wing failure caused by human error during frequent wing removal is greater than wing failure caused by a cracked or corroded wing attach fitting. The FAA does not concur. The FAA has not received any reports, data, or information related to Piper PA-25 series airplane wing failure caused by disassembling and reassembling the wing; however, the FAA has received information and data related to two accidents of Piper PA-25 series airplanes where the wing failed because of cracked and corroded wing forward spar fuselage attachment assemblies. The AD is unchanged as a result of these comments.

Three commenters believe that accomplishing the visual and dye-penetrant inspections specified in AD 93-21-12 are sufficient to detect corrosion and cracks in the wing forward spar fuselage attachment assembly. One commenter states that this assembly may be adequately inspected without removing the wings. The FAA does not concur. Analysis of the wing fittings in the two accidents revealed that corrosion internal to the fitting assembly was a contributing factor to the failures. The FAA developed the proposed ultrasonic and dye penetrant inspection procedures while actually examining a Piper PA-25 series airplane. The development of these procedures confirmed to the FAA that it is possible to inspect a Piper PA-25 series airplane as required by AD 93-21-12 and not detect corrosion, and that using ultrasonic inspection procedures is the only FAA-known way of detecting internal corrosion in the wing forward spar fuselage attachment assembly on the affected airplanes. The AD is unchanged as a result of these comments.

Three commenters state that the one-time inspection required by AD 93-21-12 is sufficient. The commenters feel that this AD raised the PA-25 series airplane operators' awareness of and emphasized to the applicable mechanics the importance of performing inspections of the wing forward spar fuselage attachment assembly on a regular basis in the future. The FAA does not concur. A one-time inspection mandated by an AD may make airplane operators aware of the importance of future repetitive inspections; however, AD action mandating ultrasonic and dye penetrant repetitive inspections is the only method the FAA is aware of to ensure that the unsafe condition of internal corrosion in the wing forward spar fuselage attachment assembly on

the affected airplanes is detected and corrected.

One commenter states that the provision for replacing the wing attach cluster every five years instead of repetitively inspecting every two years is too short of a repetitive interval. The commenter feels that, if the existing fittings have been installed for 20 to 30 years, then justification exists for allowing additional time between repetitive inspections if the cluster is replaced. The FAA partially concurs. The FAA included this cluster replacement provision to give owners/operators a grace period if the cluster was recently replaced. The reason for a five-year threshold is to ensure that repetitive inspections are initiated on the assembly before corrosion develops or a crack initiates. The addition of the inspection reporting requirement will allow the FAA to continuously evaluate this threshold, and, as appropriate, either extend or shorten the repetitive inspection interval in the future.

Five commenters believe that repetitive inspections are unjustified. These commenters state that, because the FAA issued AD 93-21-12 to require a one-time inspection 20 to 30 years after the PA-25 series airplanes were manufactured, it is unrealistic to believe that corrosion or cracks could occur in the cluster assembly in the two years since the initial inspection required by AD 93-21-12. The FAA does not concur. As stated earlier, the airplanes in the referenced accidents had corrosion internal to the wing fitting assembly. The FAA has determined that the inspections currently required by AD 93-21-12 will not adequately detect internal corrosion and, this internal corrosion could develop to the point of structural failure to the wing when not inspected ultrasonically on a regular basis. The AD is unchanged as a result of these comments.

Eleven commenters state that the ultrasonic inspections contained in the proposal would provide a financial impact upon the operators of the Piper PA-25 series airplanes. Two of these commenters feel that the impact could be severe enough to eliminate the Piper PA-25 series airplane fleet. The FAA concurs that the actions would present a financial impact upon the Piper PA-25 series airplane operators. Although the main criteria for issuing an AD is to correct a known unsafe condition and maintain a level of safety for the airplane equivalent to that originally certificated, the FAA must present an estimated cost impact upon the public for each AD. The FAA analyzes each AD to ensure that the condition specified in the AD is unsafe and is needed to maintain the original level of safety and that the estimated cost is a fair representation of reality. The FAA has determined that the level of safety needed for the Piper PA-25 series airplanes would no longer be achieved if this AD action was not mandated, and that the cost presented in the economic paragraph of this AD is an accurate assessment of the actual cost impact upon the public. The AD is unchanged as a result of these comments.

One commenter states that the ultrasonic inspection specified in the proposal is not necessary for the steel fuselage tubing. The FAA concurs. The requirements of the AD are only to inspect ultrasonically the wing attach fitting clevis ears for internal corrosion. The AD is unchanged as a result of this comment.

Two commenters recommend that the FAA include certain corrosion preventative treatments as an option for extending the time that the repetitive inspections are required. One of these commenters specifically recommends packing zinc chromate paste on the wing attach fitting area or treating the fuselage tubing with linseed oil. The other commenter recommends treating the clusters with Neutrasol after the initial inspection to halt any additional corrosion development. At this time, the FAA does not have enough data to ensure that corrosion inhibitors will deter or eliminate the development of internal corrosion of the wing forward spar fuselage attachment assembly. The FAA will keep these ideas in mind while analyzing the data

of the inspection results obtained through this AD. As in any AD action, the airplane owners/operators may submit any data or ideas to the FAA as a request for an alternative method of compliance as specified in paragraph (k) of the AD. The AD is unchanged as a result of these comments.

After careful review of all available information related to the subject presented above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed except for the addition of the reporting requirement and minor editorial corrections. The FAA has determined that the reporting requirement addition and the minor editorial corrections will not change the meaning of the AD over that which was proposed. The addition of the reporting requirement only adds a paperwork burden upon the public over that already proposed, and the data obtained from the reports may lead the FAA to extend the repetitive inspection interval in the future.

The compliance time for this AD is presented in calendar time instead of hours TIS. The FAA has determined that a calendar time for compliance is the most desirable method because the unsafe condition described by this AD is caused by corrosion. Corrosion can occur on airplanes regardless of whether the airplane is in service or in storage. Therefore, to ensure that corrosion is detected and corrected on all airplanes within a reasonable period of time without inadvertently grounding any airplanes, the FAA is mandating a compliance schedule based upon calendar time instead of hours TIS.

The FAA estimates that 1,272 airplanes in the U.S. registry will be affected by this AD, that it will take approximately 30 workhours per airplane to accomplish the required inspection, and that the average labor rate is approximately $60 an hour. The FAA has become aware that the affected airplane owners/operators could incur additional expenses to have their airplanes ultrasonically inspected. This figure will vary based on scheduling and travel time; however, for the purposes of this AD the FAA is using a figure of $500. Based on these figures, the total cost impact of this AD on U.S. operators is estimated to be $2,925,600. This figure is based on the assumption that no affected airplane owner/operator has accomplished the required inspections, and does not reflect the cost of repetitive inspections. The FAA has no way of determining how many repetitive inspections a particular owner/operator may incur. In addition, the figure reflects a $500 expense charge for the ultrasonic inspection. The FAA anticipates that many of the affected airplane owners/operators will have ultrasonic expense charges much less than $500.

The regulations adopted herein will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the final evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption "ADDRESSES".

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment
Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39 - AIRWORTHINESS DIRECTIVES
1. The authority citation for part 39 continues to read as follows:
Authority: 49 U.S.C. App. 1354(a), 1421 and 1423; 49 U.S.C. 106(g); and 14 CFR 11.89.

Section 39.13 - [AMENDED]
2. Section 39.13 is amended by removing AD 93-21-12, Amendment 39-8763 (58 FR 65104, December 13, 1993), and by adding a new AD to read as follows:

Regulatory Information

95-12-01 PIPER AIRCRAFT CORPORATION: Amendment 39-9251; Docket No. 92-CE- 63-AD. Supersedes AD 93-21-12, Amendment 39-8763.

Applicability: Models PA-25, PA-25-235, and PA-25-260 airplanes (all serial numbers), certificated in any category.

NOTE 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must use the authority provided in paragraph (k) of this AD to request approval from the FAA. This approval may address either no action, if the current configuration eliminates the unsafe condition, or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any airplane from the applicability of this AD.

Compliance: Required within the next 12 calendar months after the effective date of this AD, unless already accomplished, and thereafter at intervals not to exceed 24 calendar months (except as noted in paragraph (h) of this AD).

To prevent possible in-flight separation of the wing from the airplane caused by a cracked or corroded wing forward spar fuselage attachment assembly, accomplish the following:

(a) Gain access to the left and right wing forward spar fuselage attach fittings by removing the screws retaining the wing fairing. Dismantle the wing fillet by removing the screws on the aft edge top and bottom and removing the wing fairing (see FIGURE 1 of the Appendix to this AD).

(b) Remove the wing attach bolts and wing. Remove paint from the wing forward spar fuselage attachment fittings and surrounding areas; do not sand blast because it may obscure surface indications.

NOTE 2: Saturation of the bolts with a penetrating oil may facilitate removal.

(c) Visually inspect the wing forward spar tubular fuselage attach cluster for damage (cracks,

corrosion, rust, or gouges). Prior to further flight, repair or replace any damaged tubular member with equivalent material in accordance with FAA Advisory Circular (AC) No. 43.13-1A, Acceptable Methods, Techniques, Practices - Aircraft Inspection and Repair.

(d) Inspect (using both dye penetrant and ultrasonic procedures) the wing forward spar fuselage attach fitting assembly, part numbers (P/N) 61005-0 (front spar fitting assembly) and 61006-0 (front spar fitting) for Model PA-25; and P/N 64412-0 (front spar fitting assembly) and 64003-0 (front spar fitting) for Models PA-25-235 and PA-25-260, for corrosion and cracks in accordance with the Appendix to this AD.

(1) If any corrosion is found that meets or exceeds the parameters presented in the Appendix to this AD or any cracks are found, prior to further flight, replace the forward spar fuselage tubular attach cluster with serviceable parts as specified in the Appendix to this AD.

(2) The inspection procedures in the Appendix of this AD, except for the dye penetrant inspection procedures, must be accomplished by a Level 2 inspector certified using the guidelines established by the American Society for Non-destructive Testing, or MIL-STD-410. A mechanic with at least an Airframe license may perform the dye penetrant inspection.

(e) Replacement parts required by this AD shall be of those referenced and specified in either Figures 3a and 3b, 4a and 4b, or 5a and 5b (as applicable), included as part of the Appendix of this AD.

(f) Prime and paint all areas where parts were replaced or where paint is bubbled or gone. Use epoxy paint and primer, and, after paint has cured, rust inhibit the entire area.

(g) Reinstall all items that were removed.

(h) If a new cluster is installed into the fuselage frame, repetitive inspections are not required until five years after the replacement date on the respective fuselage side. This cluster may be replaced every five years as an alternative to the repetitive inspections.

(i) Send the results of the inspection required by paragraph (d) of this AD within 10 calendar days after the inspection to the Manager, Atlanta Aircraft Certification Office (ACO), Campus Building, 1701 Columbia Avenue, suite 2-160, College Park, Georgia 30337-2748. Include the airplane model and serial number, the category of operation the airplane is operated in (normal or restricted), the location and condition of any cracked or corroded area, the number of hours TIS of the airplane at the time of inspection, and the approximate number of hours TIS accrued on the airplane annually. (Reporting approved by the Office of Management and Budget under OMB No. 2120-0056.)

(j) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

(k) An alternative method of compliance or adjustment of the initial or repetitive compliance times that provides an equivalent level of safety may be approved by the Manager, Atlanta Aircraft Certification Office (ACO), Campus Building, 1701 Columbia Avenue, suite 2- 160, College Park, Georgia 30337-2748. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta ACO.

NOTE 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Atlanta ACO.

(l) This document or any other information that relates to this AD may be inspected at the FAA, Central Region, Office of the Assistant Chief Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri.

(m) This amendment (39-9251) supersedes AD 93-21-12, Amendment 39-8763.

(n) This amendment becomes effective on July 7, 1995.

APPENDIX TO AD 95-12-01

PROCEDURES AND REQUIREMENTS FOR WING FORWARD SPAR ATTACHMENT ASSEMBLY; INSPECTION OF PIPER PA-25 SERIES AIRPLANES

EQUIPMENT REQUIREMENTS

1. A portable combination ultrasonic flaw detector with both an LED thickness readout and an A-trace with thickness gate display.

2. An ultrasonic probe with the following: a 15 MHz 0.25-inch diameter with a 0.375-inch plastic delay line. An equivalent permanent delay line transducer that provides adequate sensitivity and resolution to measure a 0.050-inch steel shim can also be used.

3. Three steel shims within the range of 0.050 to 0.100 inches are required. To ensure proper calibration, the steel shims should be smooth and free of dirt. In order to verify the shim thickness, use a calibrated micrometer to measure the steel shims.

4. Either glycerin, 3-in-1 oil, or equivalent ultrasonic couplants are used to conduct this test set-up and inspection. Water-based couplants are not permitted because of the possibility of initiating long-term corrosion of the wing forward spar fuselage attachment fittings.

NOTE: Couplant is defined as "a substance used between the face of the transducer and test surface to improve transmission of ultrasonic energy across this boundary or interface."

NOTE: If surface pitting is found on either side of the fitting ears, lightly sand the surface to obtain a smooth working surface. Removal of surface irregularities such as pits, rust, scale, and paint will enhance the accuracy of the inspection technique.

INSTRUMENT CALIBRATION:

1. Turn the instrument power on and check the battery charge status. The instrument should have at least 40-percent of available battery life. The screen brightness and contrast of the display screen should match the environmental conditions (i.e., outside sunlight or inside a hangar).

2. Depending on the ultrasonic instrument used, select or verify the single element transducer setting from the probe selection menu. If a removable delay line is used, unscrew the plastic delay line from the transducer. Add couplant to the base of the delay line, then reattach the delay line.

3. Obtain steel shims with known or measured thickness at or near 0.050, 0.075, and 0.100 inches. At least one steel shim shall be greater than 0.095 inches, one less than or equal to 0.050 inches, and one between these two values. Place the probe on the thickest steel shim using couplant. Adjust the gain setting to increase the backwall signal from this steel shim. An A-trace will appear on the screen and a thickness readout will appear on the display. The signal on the screen from left to right shows: the initial pulse, the delay line (the front surface of the steel shim) and the backwall echo of the steel shim. A second and third multiple backwall echo may also be seen on the A-trace. Enable the thickness gate. Adjust the thickness gate to initiate at the delay line to steel shim interface and terminate at the first backwall echo.

4. Place the probe on the thinnest steel shim using couplant. Adjust the damping, voltage and pulse width to obtain the maximum signal response and highest resolution on this steel shim. These settings can vary from probe to probe and are somewhat dependent on operator preferences.

5. To stabilize the interface synchronization, adjust the electronic triggering (blocking gate) to approximately three quarters of the distance between the initial pulse and the delay line interface echo. The thickness gate should initiate at the delay line interface echo and terminate at the first backwall echo.

6. Depending on the instrument and probe, select positive half-wave rectified signal display or negative half-wave rectified signal display. This selection should give the best signal display on the thinnest steel shim. Select the interface synchronization. This selection automatically starts the thickness gate at the delay time corresponding to the tip of the plastic delay line.

7. Couple the probe to the thickest steel shim using couplant. Adjust the range so the A-scan display reads from 0.000 to 0.300 inches. Several multiple backwall echoes will disappear from the screen.

8. Adjust the thickness gate to trigger on the first return signal. If instability of the gate trigger occurs, adjust the gain and/or damping to stabilize the thickness reading. A thickness readout should be present on the screen and near the known steel shim thickness.

9. Adjust the velocity to 0.231 inches/microseconds. The thickness reading should be the known steel shim thickness. Couple the transducer to the thinnest steel shim. If the thickness readout does not agree with the known thickness, adjust the fine delay setting to produce the known thickness. Re-check the thickest step. If the readout does not indicate the correct thickness re-adjust the fine delay setting. After this adjustment is made, record the thickness values for each of the steel shims on a set-up sheet.

10. Calculate the percent error for each measured steel shim. The maximum allowable percent error should not exceed 3-percent.

INSPECTION PROCEDURES:

1. Add couplant to the outside inspection surface (Refer to Figures 3a, 4a and 5a, as applicable). Add the appropriate gain to obtain the backwall echo from the inspection surface. If the gain setting is adjusted, re-check the thickness values on the steel shims. To assure proper coupling to the test sample, twist the probe clockwise and counter-clockwise (with a 45-degree twist) and maintain contact with the test surface. During the articulation of the probe, observe the A-trace on the screen and stop the probe twist at the point of adequate back surface signal amplitude to trigger the thickness gate on the first half-cycle. Measure and record the thickness.

Repeat the above process at eight equally-spaced locations around the surface. The weld bead near the spar cluster may be hard to access. Find a suitable location near the weld and measure the thickness.

2. Add couplant to the inside inspection surface (Refer to Figures 3a, 4a and 5a, as applicable). Add the appropriate gain to obtain the backwall echo from the inspection surface. To assure proper coupling to the test sample, twist the probe (clockwise and counter-clockwise with a 45-degree twist). During the articulation of the probe, observe the A-trace on the screen and stop the probe twist at the point of adequate back surface signal amplitude to trigger the thickness gate on the first half-cycle. Measure and record the thickness. Repeat the above process at eight equally-spaced locations around the surface.

3. If a thickness reading in any one of the eight locations from paragraph 1. of the **INSPECTION PROCEDURES** section (outside section surface) is .085-inch or less for the PA-25 Model or .055-inch or less for the PA-25-235 and PA-25-260 Models, or if a thickness reading in any one of the eight locations from paragraph 2. of the **INSPECTION PROCEDURES** section (inside section surface) is .055-inch or less for the PA-25 Model or .085-inch or less for the PA-25-235 and PA-25-260 Models, prior to further flight, replace the forward spar fuselage tubular attach cluster with serviceable parts in accordance with FAA AC No. 43.13-1A, Acceptable Methods, Techniques, Practices - Aircraft Inspection and Repair. This procedure requires the following:

a. Provide for the alignment of the airframe with an appropriate alignment fixture in accordance with FAA AC No. 43.13-1A, Acceptable Methods, Techniques, Practices- Aircraft Inspection and Repair.

b. Cut the tubular members as referenced and specified in Figure 2 and either Figures 3a and 3b; Figures 4a and 4b; or Figures 5a and 5b, as applicable.

c. Fabricate a cluster using all applicable part numbers referenced in Figures 3b, 4b, or 5b, as applicable; and

d. Splice the new cluster into the fuselage frame.

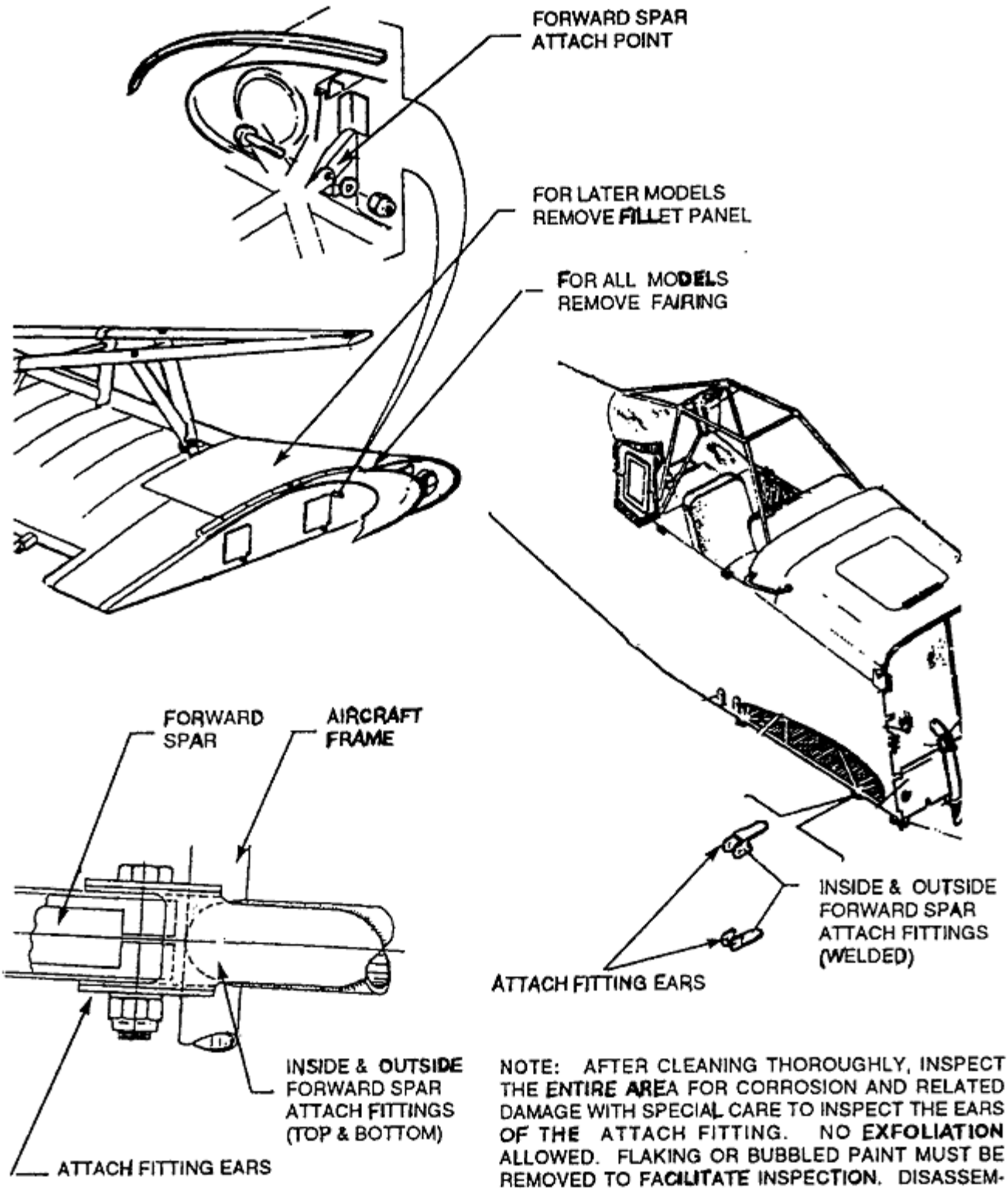
DYE PENETRANT INSPECTION:
Inspect the wing forward spar fuselage attach fitting assembly for cracks using FAA-approved dye penetrant methods. If any cracks are found, prior to further flight, replace the forward spar fuselage tubular attach cluster with serviceable parts in accordance with FAA AC No. 43.13-1A, Acceptable Methods, Techniques, Practices - Aircraft Inspection and Repair. This procedure requires the following:

1. Provide for the alignment of the airframe with an appropriate alignment fixture in accordance with FAA AC No. 43.13-1A, Acceptable Methods, Techniques, Practices- Aircraft Inspection and Repair.

2. Cut the tubular members as referenced and specified in Figure 2 and either Figures 3a and 3b; Figures 4a and 4b; or Figures 5a and 5b, as applicable.

3. Fabricate a cluster using all applicable part numbers referenced in Figures 3b, 4b, or 5b, as applicable; and

4. Splice the new cluster into the fuselage frame.



NOTE: AFTER CLEANING THOROUGHLY, INSPECT THE ENTIRE AREA FOR CORROSION AND RELATED DAMAGE WITH SPECIAL CARE TO INSPECT THE EARS OF THE ATTACH FITTING. NO EXFOLIATION ALLOWED. FLAKING OR BUBBLED PAINT MUST BE REMOVED TO FACILITATE INSPECTION. DISASSEMBLY WILL BE AS REQUIRED BASED ON CONDITION. RETURN TO SERVICE INCLUDES PRIME, PAINT AND RUST INHIBITOR.

FIGURE 1
AD 95-12-01

PA-25
Side View of the Front Wing
Fitting and Landing Gear Fittings

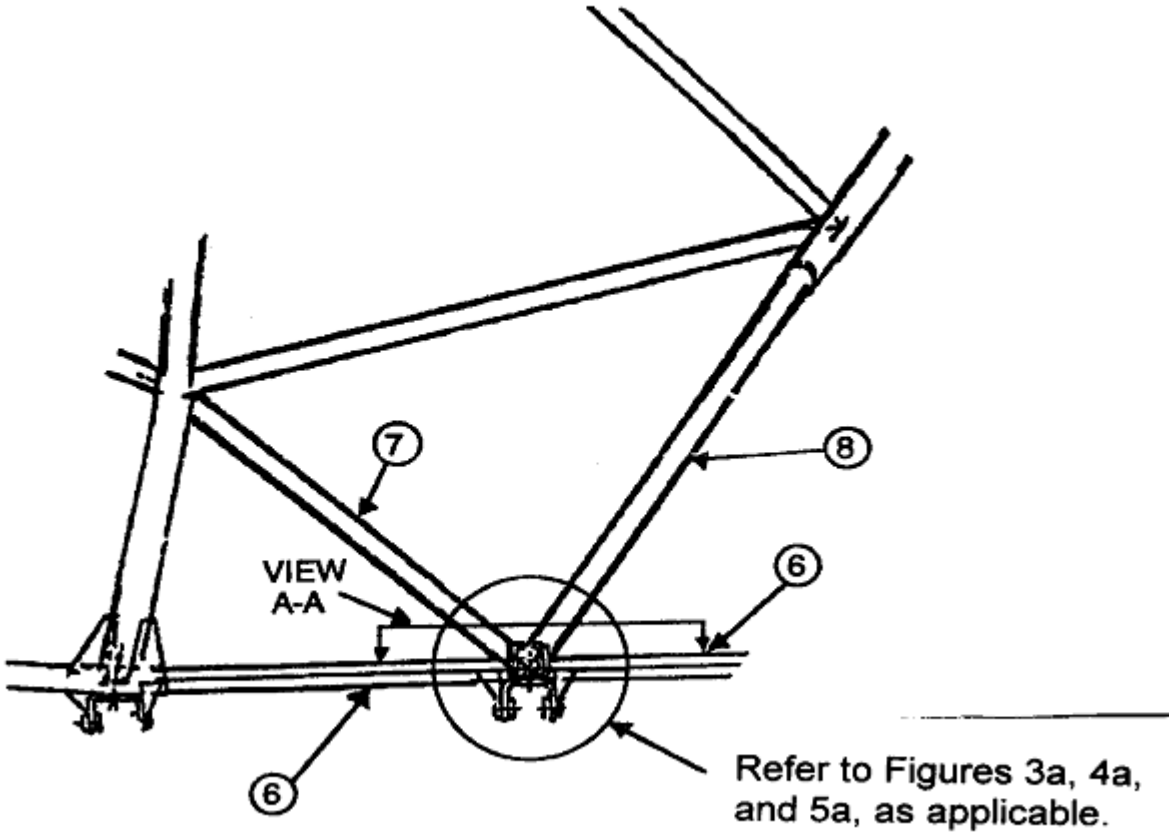
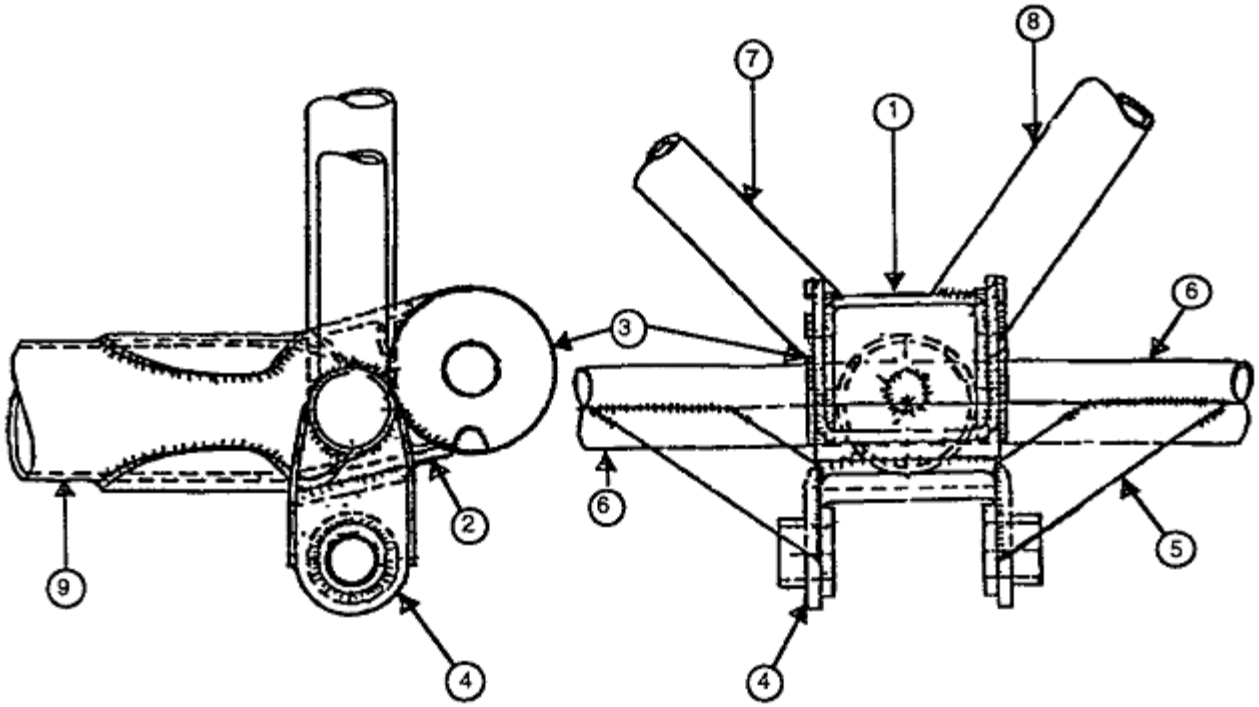
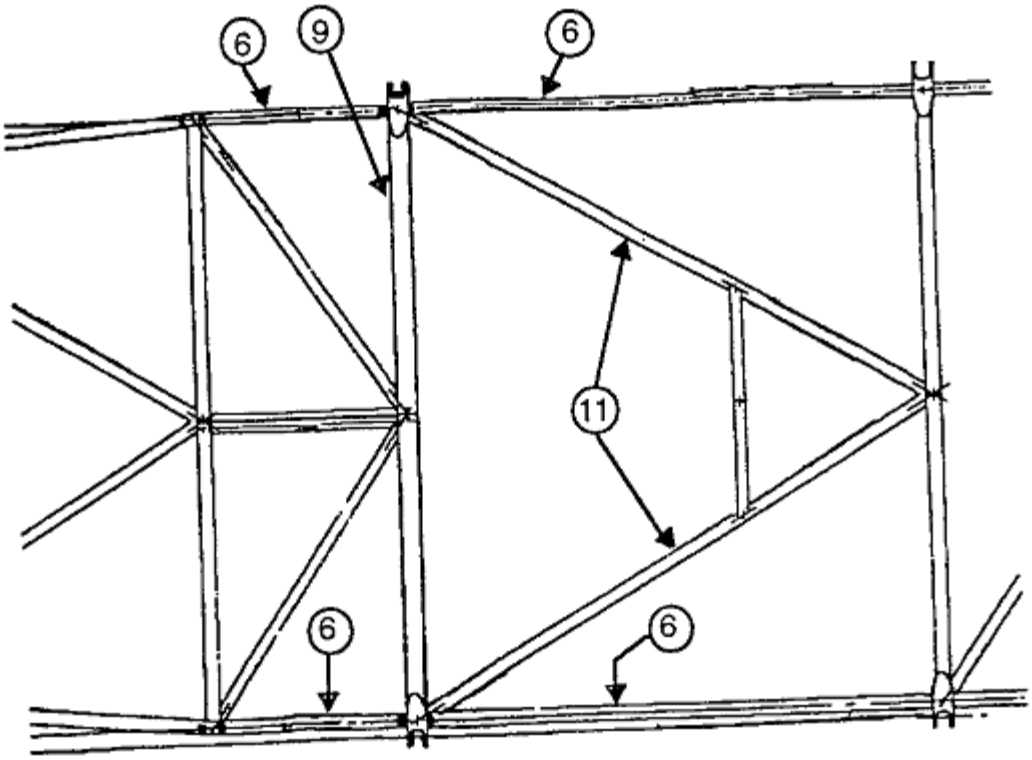


Figure 2
AD 95-12-01



View Looking Aft

Side View



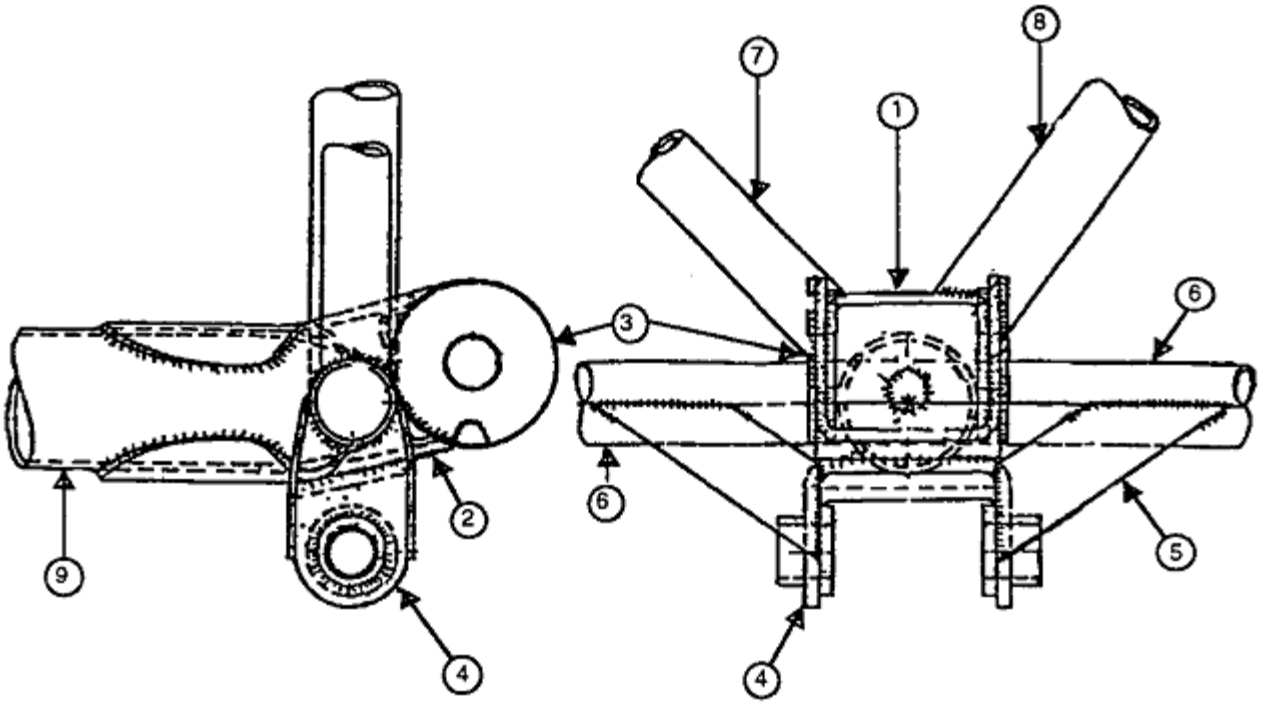
Bottom View (View A-A)
(Both Sides)
Figure 3a
AD 95-12-01

PA-25		
		S/N - ALL 95-12-01
Front Wing Spar Attachment-Fittings and Tubes		
NO.	**DESCRIPTION**	**PART NO./TUBE DIMENSIONS**
1	Front Spar Fitting	61006-0
2	Channel	61007-0
3	Fitting Assy-Front Spar	61005-0
4	Fitting Assy-Landing Gear	21242-2
5	Brace-Bracket	11994-28
6	Tube	.75 x .035 (4130)N**
7	Tube	.625 x .035 (4130)N**
8	Tube	.75 x .035 (4130)N**
9	Tube	1.25 x .058 (4130)N**
11	Tube	.625 x .028 (1025)
**-MIL-T-6736 Type 1		
Figure 3b **95-12-01**		

PA-25-235		
		S/N - 25-2000 to 25-2985 95-12-01
Front Wing Spar Attachment-Fittings and Tubes		
NO.	**DESCRIPTION**	**PART NO./TUBE DIMENSIONS**
1	Front Spar Fitting	64003-0
2	Channel	64175-0
3	Fitting Assy-Front Spar	64412-0
4	Fitting Assy-Landing Gear	64005-0 (L) 64005-1 (R)
5	Brace-Bracket	11994-28
6	Tube	.75 x .049 (4130)N**
7	Tube	.625 x .049 (4130)N**
8	Tube	.875 x .065 (4130)N**

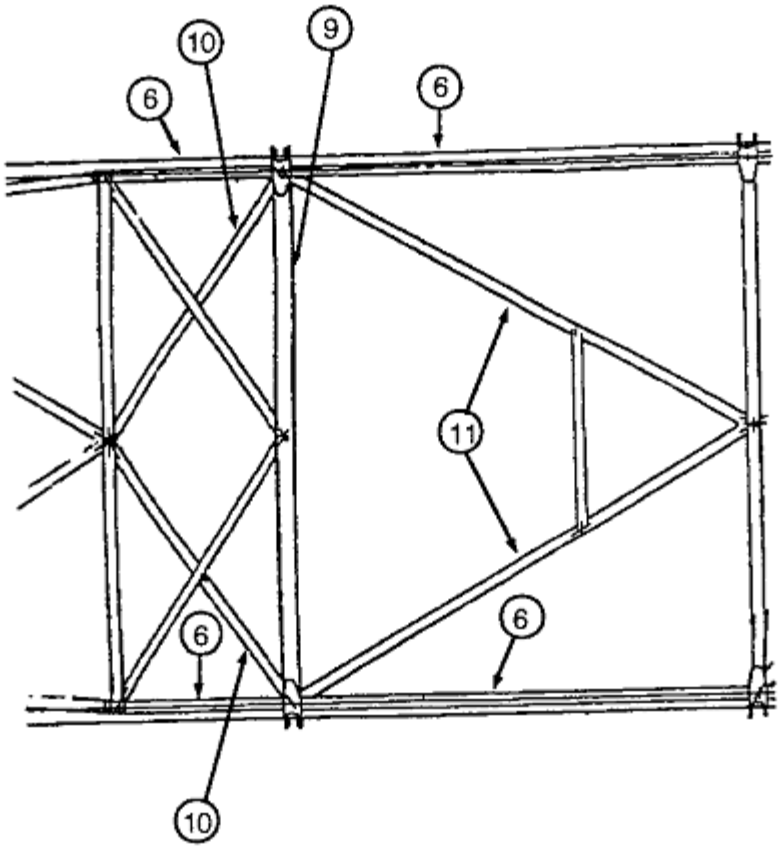
9	Tube	1.25 x .095 (4130)N**
10	Tube	.75 x .049 (4130)N**
11	Tube	.625 x .028 (1025)
**-MIL-T-6736 Type 1		
(See next page for Figure 4a.) **Figure 4b** **95-12-01**		

PA-25-235
(S/N - 25-2000 TO 25-2985)



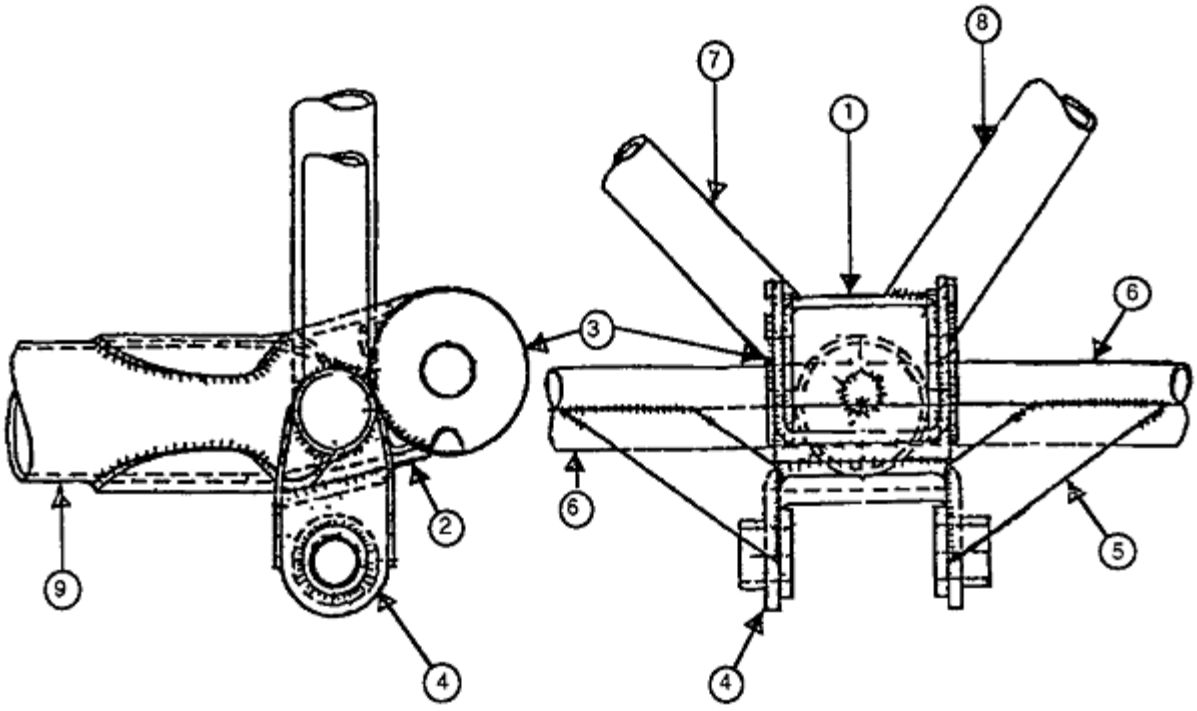
View Looking Aft

Side View



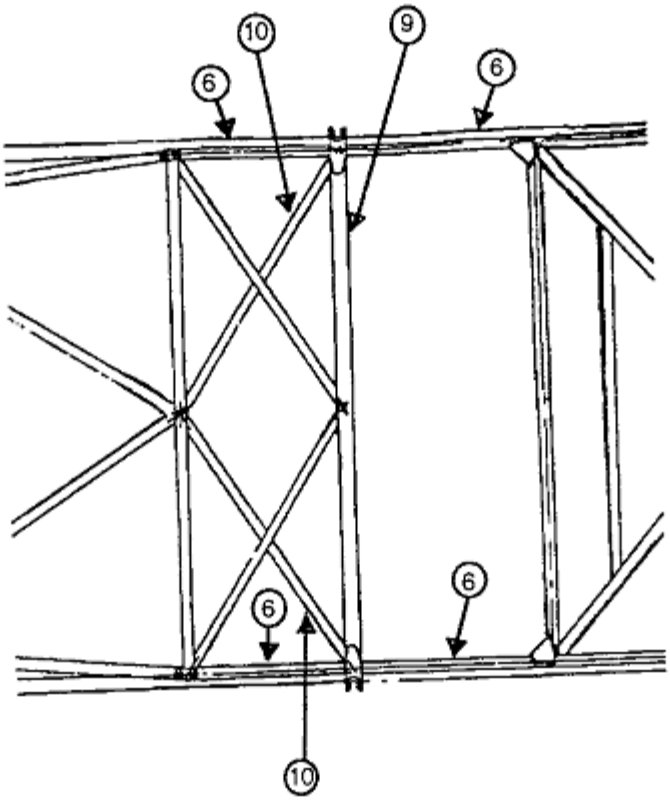
Bottom View (View A-A)
(Both Sides)
Figure 4a
AD 95-12-01

PA-25-235, PA-25-260
S/N - 25-2986 and Up)



View Looking Aft

Side View



Bottom View (View A-A)
(Both Sides)
Figure 5a

95-12-01 PA-25-235, -260		
S/N - 25-2986 and UP		
Front Wing Spar Attachment-Fittings and Tubes		
NO.	**DESCRIPTION**	**PART NO./TUBE DIMENSIONS**
1	Front Spar Fitting	64003-0
2	Channel	64175-0
3	Fitting Assy-Front Spar	64412-0
4	Fitting Assy-Landing Gear	64005-0 (L) 64005-1 (R)
5	Brace-Bracket	11994-28
6	Tube	.75 x .049 (4130)N**
7	Tube	.625 x .049 (4130)N**
8	Tube	.875 x .065 (4130)N**
9	Tube	1.25 x .095 (4130)N**
10	Tube	.75 x .049 (4130)N**
**-MIL-T-6736 Type 1		
Figure 5b **95-12-01**		