

**TO:** All Model 407 Owners/Operators

**SUBJECT:** REVISION "A" TO ALERT SERVICE BULLETIN  
407-98-17: VERTICAL FIN ASSEMBLY P/N  
206-020-113-223A, 223B, OR -223S,  
INSPECTION AND REWORK OF.

- NOTE -

Operators who have done the initial Alert Service Bulletin 407-98-17 must now do Part III of ASB 407-98-17 Revision "A".

Revision "A" to ASB 407-98-17 includes the changes that follow:

- The SUBJECT section has been changed to show P/N 206-020-113-223\* because it is more easily identified with the bonded identification strips on the fin. Fin assembly P/N 206-020-113-223 is a subassembly of both P/N 206-020-113-221 and -229.
- The HELICOPTERS AFFECTED section has been changed to show the bulletin effectivity in relation to the serial number of the fin assembly instead of only the aircraft serial number. The affected helicopters have been expanded to include all 407 helicopters through S/N 53274. These changes are to make sure that all those fins that are possibly damaged are inspected (for example those that have been moved from an affected helicopter to a non-affected one).
- The DESCRIPTION section now includes a Part III.
- The MATERIAL section now includes Part III.
- The ACCOMPLISHMENT INSTRUCTIONS now gives instructions on how to locate the fin part number and serial numbers before you do Part I, and also includes a Part III, identification of fin assembly. You must do Part III.

(\* ) Fins P/N 206-020-113-223A or B were installed on production helicopters. Fins P/N 206-020-113-223S were supplied as spares.

6/26/98

4/3/98

"A"

1 of 14

**MODELS AFFECTED:**

407

**SUBJECT:**

VERTICAL FIN ASSEMBLY P/N  
206-020-113-223A, 223B, OR -223S,  
INSPECTION AND REWORK OF.

**HELICOPTERS AFFECTED:**

407, Serial Numbers 53000 through 53273 which have the above fin assembly with serial numbers BP2266 and before. But those that have the serial numbers BP2260, BP2262, or BP2265 are not affected.

Fin assemblies P/N 206-020-113-223A, B, or S with fin assembly serial number BP2260, BP2262, BP2265, and BP2267 and subsequent have had the intent of this bulletin completed before delivery.

"A"

This bulletin is not required for 407 helicopters that have serial numbers 53274 and subsequent which have the fin assembly P/N 206-020-113-255.

**COMPLIANCE:**

In the next 100 hours after you get this bulletin, but not later than November 30, 1998.

**DESCRIPTION:**

Bell Helicopter found that some vertical fin assemblies P/N 206-020-113-223 can have damage on the inboard skin caused during production. Such damage (reduced skin thickness) can decrease the strength of the vertical fin.

"A" Part I gives the inspection conditions to be used, and Part II gives the corrective actions required. Part III gives instruction to identify fins that have been inspected and/or repaired.

**APPROVAL:**

The engineering design aspects of this Service Bulletin are Transport Canada approved.

**MANPOWER:**

"A" Approximately 3.0 man-hours are necessary to complete Part I of this Bulletin. If you must do corrective action, 4.0 man-hours are necessary for Part II. Approximately 0.5 man-hour is necessary to complete Part III. Man-hours are based on hands-on time and can change because of the personnel and facilities available.

**WARRANTY:**

Owners/Operators of 407 helicopters who comply with the instructions outlined in this bulletin are eligible for a special warranty credit of \$500 USD towards the labor and minor materials needed to perform the inspection and repair to their existing fin.

Additionally, if it is determined that the fin is damaged beyond the limits specified in Part II of the ACCOMPLISHMENT INSTRUCTIONS, the owner/operator shall be eligible for a special 100% warranty credit towards the purchase of the replacement fin.

To receive this credit:

- Customers must comply with the instructions outlined in this bulletin no later than November 30, 1998.
- Send a completed Malfunction Report (MR) to BHT Warranty Administration noting compliance with this Alert Service Bulletin. If the results of the inspection conclude that a replacement fin is required, the fin must be procured from an approved BHTI spares supply source, and the BHTI invoice referencing the fin purchased to accomplish this bulletin must be attached to the Malfunction Report.

- NOTE -

Customers who comply with the instructions in this bulletin after November 30, 1998, are not eligible for the special warranty credit provisions listed above.

**MATERIAL:**

**Required Material:**

The material that follows is necessary to complete Part I of this Alert Service Bulletin and can be procured through your Bell Helicopter Textron Supply Center.

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>QUANTITY</u>
M7885/6-4-01	RIVET	5
M7885/6-4-02	RIVET	6
80-011-P12F3-0	INSERT (PLUG)	1
80-011-S12F20-0	INSERT (SLEEVE)	1

The material that follows is necessary to complete Part II of this Alert Service Bulletin and can be procured through your Bell Helicopter Textron Supply Center. Assets for Part II of this bulletin will be in limited supply. Orders will be filled on a first-come, first-served basis. If you need to replace the vertical fin, and no part is available, contact Product Support Engineering.

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>QUANTITY</u>
MS20600AD4-W2	RIVET	20(NOTE 1)
MS20426AD4-5	RIVET	12(NOTE 1)
206-020-113-223S	FIN ASSEMBLY (IF REQUIRED)	1

Note:

1. Required only if the vertical fin is replaced.

The material that follows is necessary to complete Part III of this Alert Service Bulletin and can be procured through your Bell Helicopter Textron Supply Center.

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>QUANTITY</u>
M7885/6-4-02(*)	RIVET	2
LOCALLY MADE	NAMEPLATE	1

Note:

(\*) Rivet P/N NAS1738B4-2 may be used as an alternative.

### Consumable Material:

The material that follows is necessary to complete this Alert Service Bulletin; however, this material is consumable (bench stock) material and does not require ordering depending on the operators consumable material stock levels. This material can be obtained through your Bell Helicopter Textron Supply Center.

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>REFERENCE NO</u>
MILS81733TY II-2 PT	SEALANT	C-392
MILP23377 or MIL-P-85582, TY1, CL2	PRIMER	C-204
METHYL ETHYL KETONE OR EQUIVALENT	SOLVENT	C-309 (NOTE 1)
ABRASIVE 240 GRIT	ABRASIVE PAPER	S-423 (SRM, APPENDIX A4)

NOTE:

1. Where you cannot use MEK, use RHO SOLV 756.

### - NOTE -

The "C" REFERENCE NOS above are a cross-reference to the consumable list found in the Standard Practices Manual.

### SPECIAL TOOLS:

Part II: Depth micrometer or equivalent.

**WEIGHT AND BALANCE:**

Not affected.

**ELECTRICAL LOAD DATA:**

Not affected.

**REFERENCES:**

BHT-407-MM-5, -rev. 2, 01 June 1996

Chapter 53, Fuselage.

BHT-407-IPB, -rev. 2, 01 June 1996

Chapter 53, Fuselage.

BHT-ALL-SPM, reissue, 3 February 1995

Chapter 4, Painting.

Chapter 6, Nondestructive Inspection.

BHT-206-SRM-1, -rev. 1, 4 April 1995

Section 3, Typical Processes (Installation of potted inserts).

**PUBLICATIONS AFFECTED:**

None.

**ACCOMPLISHMENT INSTRUCTIONS:**

**Location of serial number.**

Before you do Part I, you must first locate the serial number of the vertical fin assembly as follows:

1. Open the access door located on the lower tail rotor gearbox fairing.

"A"

"A"

2. Look at the vertical fin surface and locate the embossed aluminum strip with P/N 206-020-113-223A, B, or S. It is possible for there to be two or three different strips bonded to the inboard side of the fin. The serial number BP()()()() immediately follows the part number.

For example: 206-020-113-223S BP2261 PC00

3. This bulletin is only for fin assemblies that have a strip with a part number in which the last numbers are -223A, B, or S. If there are many strips, and at least one strip has one of the affected serial numbers, you must do this bulletin.
4. Ignore strips that have the P/N 206-020-113-213.

#### **Part I - Visual inspection.**

1. Remove the fin assembly from the tailboom and put it on a workbench, inboard side up. Keep the hardware for subsequent use.

#### **- CAUTION -**

TO DO THE VISUAL INSPECTION THAT FOLLOWS, YOU MUST REMOVE PAINT AND PRIMER LOCALLY BY HAND, WITH ONLY ABRASIVE PAPER AND SOLVENT. DO NOT USE POWER TOOLS OR CHEMICAL PAINT REMOVER. THE FLUORESCENT PENETRANT LIQUIDS (PART II) WILL NOT WORK CORRECTLY IF POWER TOOLS OR CHEMICAL PAINT REMOVER IS USED. MAKE SURE THAT YOU CAREFULLY SEAL ALL OPEN HOLES TO PREVENT CONTAMINATION OF THE CORE.

2. Examine the area around the aft lower insert (4, Figure 1, Detail B) as follows:
  - a. Remove the five rivets that hold former (3) in position. Remove former and keep for subsequent installation.
  - b. Remove six rivets from the aft end of former (2) and carefully lift the former to permit access for sanding and inspection.

- c. Use abrasive paper to remove paint and primer from areas A and B shown in Detail B. Do not remove metal. Do not remove primer from the surface of the insert head.
    - d. Examine the area for damage. The possible damage is in the vertical direction and immediately adjacent to the ends of the formers (2) and (3). Look for notches, scratches or grooves on the skin.
    - e. If you find damage, refer to Part II of this bulletin.
3. Examine the area around the aft upper insert (5, Figure 1, Detail C) as follows:
  - a. Use abrasive paper to remove paint and primer 2.0 inches (50.8 mm) around the area of the aft upper insert (5) as shown in Detail C. Do not remove metal.
  - b. Examine the fin (1) around the aft upper insert (5). Look for notches, scratches or grooves on the skin.
  - c. If you find damage, refer to Part II of this bulletin.
  - d. Examine the head of the plug insert for abrasion or grind marks.
  - e. If you find damage, replace the insert (refer to BHT-206-SRM-1, Chapter 3).
4. If you find no damage, install the formers (2) and (3) as given in Part II, Step 8.
5. Make an entry in the helicopter historical records to show that you have completed this Alert Service Bulletin.

6. Make an entry in the Record of Alert Service Bulletins in the Maintenance Manual to show that this Alert Service Bulletin is completed.

**Part II - CORRECTIVE ACTION.**

Examine and repair all damage referred to in Part I of this bulletin as follows:

**- NOTE -**

For the step that follows, do not remove primer from the head of the inserts and do not remove metal at this point.

1. Use abrasive paper, only by hand, to remove paint and primer around the damaged area(s) 1.0 inch (25.4 mm) in all directions. This step provides a surface to refer to when you measure the depth of the damage after blending.
2. Blend damage area(s) to a smooth finish (32 RMS or better). Abrasive cloth of grade 320 or finer will produce the required finish. Extend the blended area(s) 0.15 inch (3.81 mm) in all directions for each 0.010 inch (0.254 mm) of depth. Clean area fully with solvent (MEK or equivalent). Before the solvent dries, rub the area dry with a clean lint-free cloth.
3. Do a fluorescent penetrant inspection for the blended area(s) and examine for cracks (refer to BHT-ALL-SPM, Chapter 6).
4. If you find a crack, replace the vertical fin with a serviceable unit as given in Step 7.
5. If you do not find a crack, clean the area fully with solvent.
6. Measure the depth of the blended area(s) with a depth micrometer or equivalent.

- NOTE -

If you need to replace the fin, and no part is available, tell Product Support Engineering; use the numbers that follow:

"A"

Phone: (Canada and the continental USA)  
1-800-243-6407;  
(or direct) 1-514-971-5607

Fax: 1-514-433-0272

7. If the depth of any of the damaged areas is more than 0.020 inch (0.508 mm), replace the vertical fin with a serviceable unit as follows:

- a. Remove the skid assembly, trailing edge flap (if installed), anti-collision light assembly and fairing. Keep these parts for subsequent use.

- b. Follow the instructions in the Warranty Statement. Send the fin assembly, collect, to:

Bell Helicopter Textron Inc.  
Customer Property Return  
c/o Bob Trent  
3000 Norwood Blvd. at Trinity  
Fort Worth, TX 76053.

- c. Before you install the new fin assembly, refer to BHT-407-MM-5, Chapter 53, to install the fairing, anti-collision light assembly, trailing edge flap (TB 407-96-2) (if necessary), and skid assembly. Paint the fin as necessary.

8. If the depth of each blended area around the inserts (4) and (5) is 0.020 inch (0.508 mm) or less, do as follows:

- a. Remove the remaining sealant from faying surfaces of the fin (1) and formers (2) and (3). Clean the surfaces with a lint-free cloth made moist with solvent.

- b. Apply primer (C-204) to all bare metal surfaces.
  - c. Apply sealant (C-392) to the faying surfaces of the formers and fin (1).
  - d. While the sealant is still wet, use the holes made by the rivets that you removed to attach the former (3) to the fin (1) with rivets (M7885/6-4-02), and former (2) to the fin (1) with one rivet (M7885/6-4-02) and five rivets (M7885/6-4-01). Install the rivets made wet with sealant. Make a fillet of sealant around the edges of the formers.
  - e. Apply primer (C-204) to the sealant surfaces. Let dry.
  - f. Refinish as necessary.
9. Install the vertical fin on the tailboom (BHT-407-MM-5, Chapter 53). Return the helicopter to service.
  10. Make an entry in the helicopter historical records to show that you have completed this Alert Service Bulletin.
  11. Make an entry in the Record of Alert Service Bulletins in the Maintenance Manual to show that this Alert Service Bulletin is completed.

**Part III - Identification of fin assembly.**

After you do Parts I and II of this bulletin, do the steps that follow to show that the fin is in compliance with this bulletin:

1. Use an aluminum alloy 2024T3 to make a nameplate with the dimensions that follow: 2.0 x 0.5 inch (50.8 x 12.7 mm), 0.032 inch (0.818 mm) thick. Drill two rivet holes (#27) in nameplate as shown in Figure 1, Detail A.
2. Vibro-etch the plate with the data that follow:  
P/N 206-020-113-223FM and applicable serial number  
BP()()()(), same as on bonded strip.
3. Clean the faying surface of the fin with solvent (C-309). Do not remove the paint or primer.

"A"

4. Locate nameplate on fin (Figure 1) and put rivet holes in fin.
5. Deburr holes in fin and nameplate. Prime plate and holes in fin. Allow to dry.
6. Apply sealant MIL-S-81733 to faying surfaces of nameplate and fin. While sealant is wet, use rivets M7885/6-4-02 made wet with sealant to install nameplate on fin.

"A"

"A"

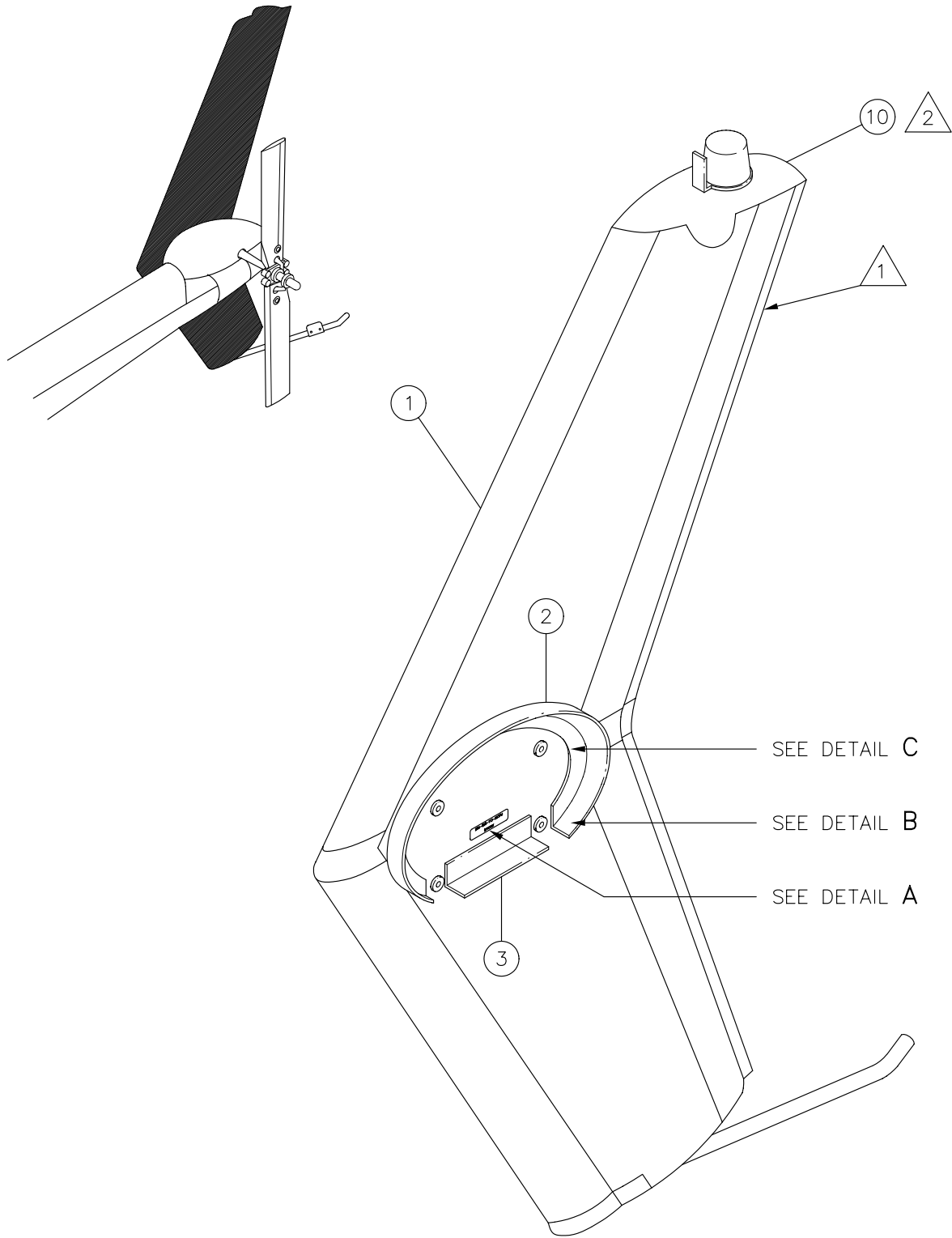
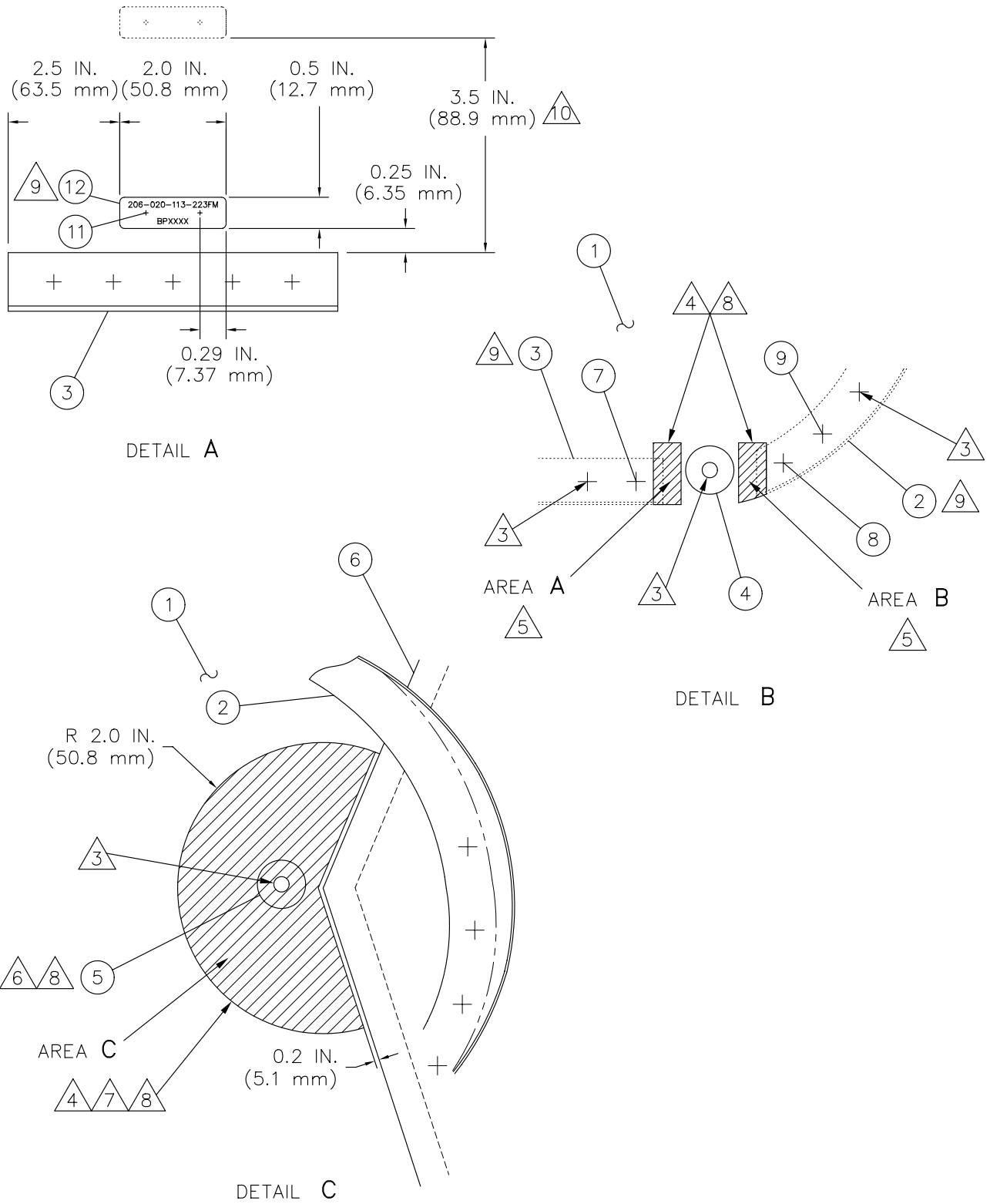


Figure 1. Inspection of the Vertical Fin (Sheet 1 of 3)



"A"

- |                                 |                                 |
|---------------------------------|---------------------------------|
| 1. Vertical fin (REF)           | 9. Rivet, M7885/6-4-01, 5 req'd |
| 2. Former (206-020-113-227)     | 10. Fairing                     |
| 3. Former (206-020-113-091)     | 11. Rivet M7885/6-4-02, 2 req'd |
| 4. Aft lower insert (*)         | 12. Name plate, locally made    |
| 5. Aft upper insert (*)         | aluminum alloy 2024T3,          |
| 6. Trailing edge cap (REF)      | 0.032 inch (0.813 mm) thick.    |
| 7. Rivet, M7885/6-4-02, 5 req'd | (*) Plug (80-011-P12F3-0)       |
| 8. Rivet, M7885/6-4-02, 1 req'd | Sleeve (80-011-S12F20-0)        |

**NOTES:**

- 1 If it is necessary to install the flap, refer to T.B. 407-96-2.
- 2 Use 18 rivets (P/N MS20600AD4-2) to attach the fairing to the fin. Seal the faying surfaces with sealant (C-392, BHT-ALL-SPM). Refer to BHT-407-MM-5, Chapter 53.
- 3 Put plugs in all holes to prevent contamination. Do not permit core contamination by solvent.
- 4 Remove paint and primer only by hand with abrasive paper.
- 5 Examine areas A and B for damage immediately adjacent and parallel to the end of the formers.
- 6 Examine the head of the insert for damage. Replace if necessary.
- 7 Examine Area C for damage.
- 8 Do not remove metal when you complete Part 1.
- 9 Apply a layer of sealant (C-392, BHT-ALL-SPM) on the faying surfaces.
- 10 Identification plate can be installed between 0.25 and 3.5 inches (88.9 and 6.35 mm) above former (3).

"A"

**Figure 1. Inspection of the Vertical Fin (Sheet 3)**