



U.S. Department of
Transportation
Federal Aviation
Administration

MAJOR REPAIR AND ALTERATION

(Airframe, Powerplant, Propeller, or Appliance)

Form Approved
OMB No. 2120-0020

For FAA Use Only

Office Identification

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act 1958)

| | | |
|-------------|--|--|
| 1. Aircraft | Make Cessna | Model A185F |
| | Serial No. 18502213 | Nationality and Registration Mark N3946Q |
| 2. Owner | Name (As shown on registration certificate) Mennen, Paul | Address (As shown on registration certificate) 1452 Owen Sound Dr. Sunnyvale, CA 94087 |

3. For FAA Use Only

| 4. Unit Identification | | | | 5. Type | |
|------------------------|---|-------|------------|--------------------------|-------------------------------------|
| Unit | Make | Model | Serial No. | Repair | Alteration |
| AIRFRAME | ----- <i>(As described in item 1 above)</i> ----- | | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| POWERPLANT | | | | <input type="checkbox"/> | <input type="checkbox"/> |
| PROPELLER | | | | <input type="checkbox"/> | <input type="checkbox"/> |
| APPLIANCE | Type | | | <input type="checkbox"/> | <input type="checkbox"/> |
| | Manufacturer | | | <input type="checkbox"/> | <input type="checkbox"/> |

6. Conformity Statement

| | | |
|---|---|--------------------------|
| A. Agency's Name and Address | B. Kind of Agency | C. Certificate No. |
| Brian Stout 13395 Foothill Ave. San Martin. CA 95046 | <input checked="" type="checkbox"/> U.S. Certified Mechanic | A & P 2100211 |
| | <input type="checkbox"/> Foreign Certified Mechanic | |
| | <input type="checkbox"/> Certified Repair Station | |
| | <input type="checkbox"/> Manufacturer | |

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

| | |
|-----------------------------|--|
| Date June 8, 2004 | Signature of Authorized Individual |
|-----------------------------|--|

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is APPROVED REJECTED

| | | | | |
|----|--|---|--|-----------------|
| BY | <input type="checkbox"/> FAA Fit Standards Inspector | <input type="checkbox"/> Manufacturer | <input checked="" type="checkbox"/> Inspection Authorization | Other (Specify) |
| | <input type="checkbox"/> FAA Designee | <input type="checkbox"/> Repair Station | <input type="checkbox"/> Person Approved by Transport Canada Airworthiness Group | |

| | | |
|--|--|--|
| Date of Approval or Rejection June 8, 2004 | Certificate or Designation No. 2100211 | Signature of Authorized Individual |
|--|--|--|

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

Installed BAS, Inc. tail handle pull in accordance with STC SA3812NM and BAS, Inc.

Installation Instructions No. TPH-1, Rev. D.

Weight and balance change negligible.

-----END-----

Additional Sheets Are Attached

Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Model SA3812NH

This certificate issued to BMS, Inc.

Notifies that the change in the type design for the following product with the limitations and conditions described in this certificate meets the minimum airworthiness requirements of Part 3 of the CIVIL AIR REGULATIONS.

Approved Models — Type Certificate Number 5N6
 Model: Cessna
 Models: 180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, and 180K

Change Name of Type Design Change:
 Installation of a BMS, Inc., tail pull handle in the aft fuselage in accordance with FAA sealed copies of BMS, Inc., Installation Instructions No. TP4-1, sheets 1, 2, and 3, dated March 20, 1987, and Drawing No. TP4-1, sheets 1 through 5, dated March 20, 1987, or later FAA approved revision.

Limitations and Conditions: Approval of this change in type design applies only to the basic airplane models noted above. This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that aircraft. A copy of this Certificate No. SA3812NH, should be carried in the modified airplane at all times.

This certificate and the supporting data which is the basis for approval shall remain in effect until a subsequent certificate is issued or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: August 13, 1986
 Date issued: _____
 Date of expiration: March 27, 1987



By Richard G. Williams
 (Signature)
 Assistant Manager, Seattle
 Aircraft Certification Office
 (Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both. This certificate may be transferred in accordance with FAR 21.47.

IMPORTANT DOCUMENTS
 KEEP WITH AIRCRAFT RECORDS

Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Model SA3813NH

This certificate issued to BMS, Inc.

Notifies that the change in the type design for the following product with the limitations and conditions described in this certificate meets the minimum airworthiness requirements of Part 3 of the CIVIL AIR REGULATIONS.

Approved Models — Type Certificate Number 3A24
 Model: Cessna
 Models: 185, 185A, 185B, 185C, 185D, 185E, 185F, 185G, 185H, 185J, and 185K

Change Name of Type Design Change:
 Installation of a BMS, Inc., tail pull handle in the aft fuselage in accordance with FAA sealed copies of BMS, Inc., Installation Instructions No. TP4-1, sheets 1, 2, and 3, dated March 20, 1987, and Drawing No. TP4-1, sheets 1 through 5, dated March 20, 1987, or later FAA approved revision.

Limitations and Conditions: Approval of this change in type design applies only to the basic airplane models noted above. This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that aircraft. A copy of this Certificate No. SA3813NH, should be carried in the modified airplane at all times.

This certificate and the supporting data which is the basis for approval shall remain in effect until a subsequent certificate is issued or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: August 13, 1986
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 Assistant Manager, Seattle
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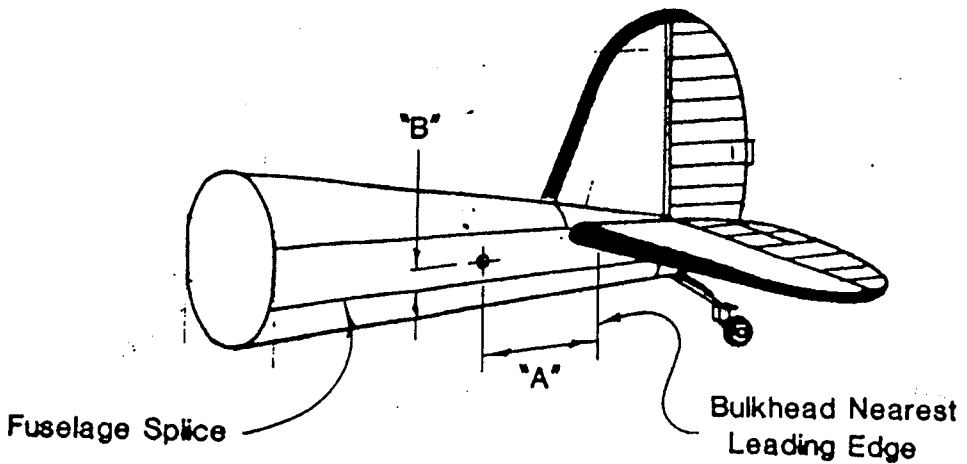
Reg # N 39460
 AC Ser. # 18502223
 E.A.S. Inc. Ser. # 2418
 1. _____
 2. _____

B.A.S., INC. INSTALLATION INSTRUCTIONS FOR TAIL PULL HANDLE

Cessna Models 120, 140, 150TD, 152TD, 170, 172TD, R172TD, 175TD, 180, 185, 190, 195 and
Luscombe 8 Series

1. Read all instructions carefully before proceeding with installation. If the instructions are not clear to you, please phone B.A.S., Inc. at 888-255-6566 for help.
2. Control cables pass through the area in which the tail pull handle will be installed. While the mounting locations shown in Figure 1 are generally suitable, the conditions described below must be satisfied.
 - A. "Cross Tube" (Figure 2) must remain clear of all controls. While checking, make sure cables are not being deflected by your body extension cords or other equipment.
 - B. Mounting Flanges must not interfere with skin laps, stringers or frames.
 - C. If it will not be possible to avoid contact between control cables and Cross Tube, or if you run into any other installation problems, call B.A.S., Inc. before going any farther. Either a unit of different length can be furnished, or a cable chafing strip can be installed per AC43.13-1A. **IN SUCH CASES, THE MAXIMUM PERMISSABLE CABLE DEFLECTION IS TWO DEGREES AND CABLES MUST BE INSPECTED FOR WEAR AT INTERVALS OF 100 OPERATING HOURS.**
3. Open up the tail cone and crawl in with Pull Handle, drill motor, 3/32", or #40 drill bit, some 3/32" cleco clamps, pliers and a light.
4. Fit Pull Handle Assembly "right side up" as marked. **NOTE:** On Cessna 120, 140, 150TD, and Luscombes, either side may be up – the handle can extend through either the right or left side of the fuselage as desired. In a level flight attitude, the AN3-14A bolts (Figure 2) through the Cross Tube should be approximately horizontal.
5. When the proper mounting location has been determined, trace around both flanges with a pencil and make index mark. Now align the marks and drill through the sides of the fuselage, using the Mounting Flanges as a guide, and cleco the Pull Handle into place. Then, from outside, drill 3/8" hole centered within the circle of 3/32" holes on the "**HANDLE SIDE OF THE FUSELAGE ONLY**– of course, on the larger aircraft (Cessna 170's and up) double ended Pull Handles are used and 3/8" holes are required on both sides of the fuselage.
6. Use a rotary file of equivalent to enlarge the 3/8" hole so that it matches the inner surface of the Cross Tube. The handle should slide easily through this hole.
7. Go back inside and remove the Pull Handle Assembly. Carefully clean out the metal filings and debur all edges, then reinstall the handle using cleco's. Chase the 3/32" holes with a #30 drill prior to installing either AN470 AD4 rivets or using #6-32 x 3/8" stainless machine screws and AN365-632 nuts.
8. Assembly weights are 7 ounces for single handle units or 11 ounces for double handled units.

| | | |
|----------------------|----------------------------------|--------------|
| TPH-1 Installation | Installation Instructions | |
| | | Sheet 1 of 1 |
| Rev D April 14, 2004 | BAS Incorporated | |



"APPROXIMATE" MOUNTING LOCATIONS * (1)

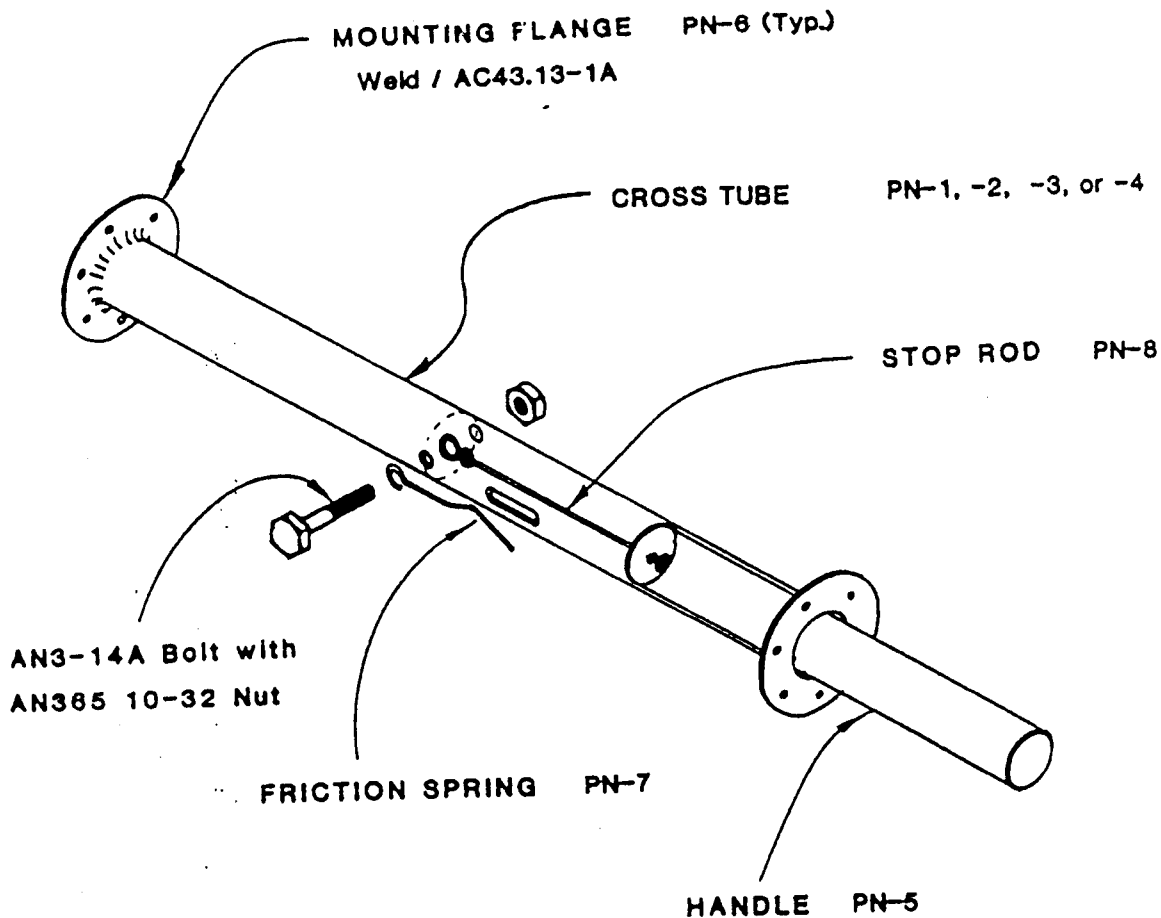
| AIRCRAFT | " A " | " B " |
|---------------------------------------|---------|--------|
| LUSCOMBE "8" | 24" | 6" |
| CESSNA 120, 140, 140A | 22" | 5" |
| CESSNA 150TD, 152TD * (2) | 18" | 6" |
| CESSNA 170, 172TD, R172TD, 175TD *(3) | 28" | 6" |
| CESSNA 180, 185 | 26 1/2" | 5" |
| CESSNA 190, 195 | 37 1/4" | 7 3/8" |

***NOTES**

1. Governing factor is clearance from controls. See paragraph 2 of installation instructions.
2. Cessna 150TD is a 150 modified to a tail wheel. Cessna 152TD is a 152 modified to a tail wheel.
3. Cessna 172TD is a 172 modified to a tail wheel. Cessna R172TD is a 172 modified to a tail wheel. Cessna 175TD is a 175 modified to a tail wheel.

| | | |
|--------------|-------------------|----------------|
| Rev. Control | Rev. C 04/14/2004 | Revised Format |
|--------------|-------------------|----------------|

| | | |
|----------------------|------------------------------|--------------|
| TPH-1 Drawing | Installation Figure 1 | |
| | | Sheet 1 of 2 |
| Rev C April 14, 2004 | BAS Incorporated | |



Exploded x-ray view of single-ended pull-handle for Luscombe 8 series and Cessna 120, 140, 140A, 150TD and 152TD

Double-ended pull-handle for Cessna 170, 172TD, R172TD, 175TD, 180, 185, 190 and 195 aircraft similar.

| | | |
|--------------|-------------------|----------------|
| Rev. Control | Rev. C 04/14/2004 | Revised Format |
|--------------|-------------------|----------------|

| | | |
|----------------------|------------------------------|------------------|
| TPH-1 Drawing | Installation Figure 2 | Sheet 2 of 2 |
| Rev A April 14, 2004 | | BAS Incorporated |