

Raytheon Aircraft

MANDATORY SERVICE BULLETIN

33, 35, 36, 55, 56TC, 58, 95

No. 2190
ATA Code 52-10

SUBJECT: DOORS - CABIN DOOR LATCHING WARNING PLACARD AND CABIN DOOR ADJUSTMENT INSTRUCTIONS

REASON: This Service Bulletin is being issued to provide a cabin door latching warning placard and to provide proper door rigging instructions. There have been reports of accidents which followed a cabin door opening because the pilot did not make sure the door was properly latched prior to takeoff. In each accident the pilot failed to continue to fly the airplane and either lost control or allowed the airplane to stall at low altitude.

EFFECTIVITY: Military airplanes are shown in parenthesis.

BEECHCRAFT Debonair/Bonanza 35-33, 35-A33, 35-B33, 35-C33, E33, F33 and G33, serials CD-1 through CD-981 and CD-983 through CD-1304;

35-C33A, E33A and F33A, serials CE-1 through CE-235, CE-249, CE-250, CE-256, CE-260, CE-264 through CE-268 and CE-270 through CE-1407;

Bonanza E33C and F33C, serials CJ-1 through CJ-179;

35, A35, B35, C35, D35, E35, F35, G35, H35, J35, K35, M35, N35, P35, S35, V35, V35-TC, V35A, V35A-TC, V35B and V35B-TC, serials D-1 through D-10403, D-15001 and D-15002;

36 and A36, serials E-1 through E-2513;

A36TC and B36TC, serials EA-1 through EA-499;

Baron 95-55, 95-A55, 95-B55 and 95-B55A, serials TC-1 through TC-349, TC-351 through TC-1392, TC-1397 through TC-1401, TC-1403 through TC-2456;

95-C55, 95-C55A, D55, E55 and E55A, serials TC-350, TE-1 through TE-49 and TE-51 through TE-1201;

95-B55B (T42A), serials TF-1 through TF-70;

56TC and A56TC, serials TG-2 through TG-94;

58 and 58A, serials TH-1 through TH-1571;

58TC, serials TK-1 through TK-151;

Travel Air 95, B95, B95A, D95A and E95, serials TD-2 through TD-721.

No BECP M

Issued: September, 1990

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(a) RAC Authorized Service Centers

(b) Owners of record on the FAA Aircraft Registration Branch List and the RAC International Owner Notification Service List.
(c) Those having a publications subscription.

Information on Owner Notification Service or subscriptions can be obtained through any RAC Authorized Service Center. As Mandatory Service Bulletins and Service Bulletins are issued, temporary notification in the Service Bulletin Master Index should be made until the index is revised. Warranty will be allowed only when specifically defined in the Service Bulletin and in accordance with the RAC Warranty Policy.

Unless otherwise designated, RAC Mandatory Service Bulletins, Service Bulletins and RAC Kits are approved for installation on RAC airplanes in original or RAC modified configurations only. RAC Mandatory Service Bulletins, Service Bulletins and Kits may not be compatible with airplanes modified by STC installations or modifications other than RAC approved kits.

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Service Bulletin No. 2190

COMPLIANCE:

Beech Aircraft Corporation considers the installation of the cabin door latching warning placard and evaluation of the door for proper latching to be mandatory and should be accomplished within the next 50 flight hours.

For compliance information on military airplanes affected by this Service Bulletin, contact your appropriate headquarters.

An Airworthiness Directive has been requested on the matter covered by this Service Bulletin.

APPROVAL:

Engineering data contained in this Service Bulletin is FAA approved.

MANPOWER:

The following information is for planning purposes only:

Estimated man-hours for installation of placard: 0.3 hour.

Estimated man-hours for door adjustment, if required: 3.5 hours.

Suggested number of men: 1 man.

The above is an estimate based on experienced, properly equipped personnel complying with this Service Bulletin. Occasionally, after work has started, conditions may be found which could result in additional man-hours.

MATERIAL:

The P/N 36-530166-3 placard required for this modification is attached to this Service Bulletin.

WARRANTY CREDIT:

Warranty credit for door adjustment, to the extent noted under MANPOWER will be allowed on affected airplanes which are within warranty at the time this Service Bulletin is issued, if adjustment is necessary.

Warranty credit is not available for installation of the placard.

Warranty coverage offered in this Service Bulletin will expire 12 months from the last day of the month this Service Bulletin is issued. After this date, the owner/operator assumes the responsibility for compliance and cost. Beech Aircraft Corporation reserves the right to void continued warranty coverage in the area affected by this Service Bulletin if this Service Bulletin is not complied with.

All warranty work must be accomplished by a BEEHCRAFT Service Center rated to perform maintenance on the specific model of BEEHCRAFT.

All warranty reimbursements are handled through BEEHCRAFT authorized outlets. Owners and operators should arrange with these outlets to perform the work and have them submit the standard Beech Aircraft Corporation warranty claim form through a BEEHCRAFT authorized outlet.

SPECIAL TOOLS:

None.

WEIGHT AND BALANCE:

No change.

REFERENCES:

None.

**PUBLICATIONS
AFFECTED:**

It is recommended that a note "See Service Bulletin No. 2190" be made in the following:

BEEHCRAFT Bonanza 33 Series Shop Manual, P/N 33-590011-1C or subsequent, Section 3;

BEEHCRAFT Bonanza 35 Series Shop Manual; P/N 35-590096B or subsequent, Section 3;

BEEHCRAFT Bonanza 36 Series Shop Manual, P/N 36-590001-3B or subsequent, Section 3;

BEEHCRAFT Bonanza Series Maintenance Manual, P/N 36-590001-9 or subsequent, Chapter 52-10;

BEEHCRAFT Baron 55, 58 Shop Manual, P/N 55-590000-13E or subsequent, Section 3;

BEEHCRAFT 95-B55B (T42A) Organizational, Direct and General Support Maintenance Manual, P/N 96-590022B or subsequent, Chapter 4, Paragraph 4-15;

BEEHCRAFT Baron 56TC Shop Manual, P/N 55-590003-5B or subsequent, Section 3;

BEEHCRAFT Baron 58P, 58TC Maintenance Manual, P/N 102-590000-5 or subsequent, Chapter 52-10;

BEEHCRAFT Travel Air 95 Shop Manual, P/N 95-590001-1C or subsequent, Section 3.

BEEHCRAFT Debonair/Bonanza 33 Series Parts Catalog, P/N 33-590011-3E or subsequent, Figure 9;

BEEHCRAFT Bonanza F33, G33, F33A, and F33C Parts Catalog, P/N 33-590010-7F or subsequent, Figure 104;

BEEHCRAFT Bonanza 35 through G35 Parts Catalog, P/N 35-590028B or subsequent, Section 2;

BEEHCRAFT Bonanza H35, J35, K35, M35, N35, P35, S35, V35, V35TC, V35A, V35A-TC Parts Catalog, P/N 35-590015-9C or subsequent, Section 2;

BEEHCRAFT Bonanza V35B and V35B-TC Parts Catalog, P/N 35-590102-5E, Figure 104;

BEEHCRAFT Bonanza 36, A36, A36TC and B36TC Parts Catalog, P/N 36-590001-1G or subsequent, Figure 104;

BEEHCRAFT Baron 55, A55, B55, C55 (C55A), D55 (D55A), and E55 (E55A) Parts Catalog, P/N 96-590010-13B, Chapter 52-10;

BEEHCRAFT Baron B55, E55 and 58 Parts Catalog, P/N 58-590000-19E or subsequent, Chapter 52-10;

BEEHCRAFT T42A Organizational, Direct and General Support Maintenance Repair Parts Manual, P/N 96-590023C or subsequent, Section 2;

BEEHCRAFT Baron 56TC and A56TC Parts Catalog, P/N 96-590003-7B or subsequent, Section 2;

BEEHCRAFT Baron 58TC Parts Catalog, P/N 102-590000-7E or subsequent, Chapter 52-10;

BEEHCRAFT Travel Air 95, B95, B95A, D95A and E95 Parts Catalog, P/N 95-590018B or subsequent, Section 2.

ACCOMPLISHMENT INSTRUCTIONS:

This Service Bulletin may be accomplished as follows:

1. Affix the enclosed P/N 36-530166-3 placard to the inside lower forward corner of the door window above the inside door handle as shown in Figure 1.

- The door is not airtight or watertight.
- The door is opening in flight.
- The door has recently been removed or repaired.

NOTE

It is not necessary to install the new P/N 36-530166-3 placard on airplanes that have a placard installed on the door window that reads, "WARNING - MAKE CERTAIN PILOT VERIFIES DOOR IS PROPERLY LATCHED BEFORE TAKE OFF".

2. If any of the following conditions have been reported by the owner/pilot, inspect the cabin door for proper latching.

- The door is difficult to close.
- There is excessive wind noise around the door.

If the cabin door is functioning properly and none of the aforementioned conditions have been reported by the owner/pilot, no further action is necessary.

If any of the aforementioned conditions have been found, proceed as follows:

3. Ensure that the door internal latch mechanism is not binding and/or preventing proper door closing as follows:

- a. With the door in the open position, operate the latching mechanism several times to ensure that the internal mechanism is operating smoothly and properly.
- b. With the door still in the open position, rotate the inside door handle counterclockwise as far as possi-

ble. Mark the inside handle escutcheon plate at the edge of the blade protruding from the inner forward end of the handle.

c. Place the latch in the open position and then close and latch the door. Check to see that the handle rotates to the position that was marked in Step 2b. If the handle does not line up with the mark, open the door and remove the door upholstery. Inspect the latching mechanism to determine the reason for the interference and make the necessary adjustments.

NOTE

The areas of possible interference are where the lower pin (if installed), the upper latch hook (if installed), and the aft bolt engage in the door frame.

4. The latches may require adjustment to ensure positive door locking as follows:

a. **UPPER LATCH** (if installed) - There are three points that should be inspected and/or adjusted on the upper latch.

NOTE

The following step applies only to those airplane cabin doors that have an adjustable overcenter mechanism stop screw, as shown in Figure 1.

1) Referring to Figure 1, View A-A, check to ensure that the upper latch mechanism is over center when the door is latched. This can be accomplished by using a small inspection mirror to see that the upper operating link is against the adjustment screw and the forward edge of the upper operating link is forward of the forward edge of the lower operating link. If the latch mechanism is not over center when the door is latched, adjust the overcenter stop screw.

NOTE

The following step applies only to those airplane cabin doors that have an adjustable roll pin in the upper latch mechanism.

2) Referring to Figure 1, View A-A, check to ensure that the upper latch hook pin is positioned so that it is almost touching the aft portion of the hook, but not riding on the hook. If the upper hook does not properly engage the pin, move the pin forward or aft (it has four positions) to obtain proper adjustment.

3) Check for proper adjustment of the door upper latch bracket in the door sill above the door. If the door does not fit properly in the frame (inboard/outboard) when closed and latched, leaving a noticeable gap

between the door and the frame, the upper latch bracket needs to be adjusted "in" to create more tension on the door. This can be accomplished by adjusting the forward tension screw. Refer to Figure 1, View A-A.

b. **LOWER LATCH** (if installed) - The lower aft latch pin should be adjusted in the latched (closed) position so that the shoulder (straight sided) portion of the pin has extended through both the striker plate and the door opening frame to a minimum of 0.05 inch below the lower surface of the door opening frame, as shown in Figure 1, View D of View B. Adjust the pin as follows, so that it just clears the striker plate when the latch is in the unlatched (open) position, and does not interfere with door opening.

NOTE

The amount of the pin protruding from the door with the latch open will depend on the gap between the bottom of the door and the door frame in the fuselage.

1) Remove the safety wire in the turnbuckle.

2) Turn the barrel to extend or retract the pin as necessary.

NOTE

It may be necessary to shorten the pin guide by grinding a maximum of 0.2 inch off the top of the pin guide as shown in Figure 1, View D of View B, in order to obtain enough travel to make this adjustment.

3) Safety the turnbuckle.

c. **AFT LATCH BOLT** - Check to ensure that the aft latch bolt provides a precatch and protrudes into the socket on the aft door frame as far as possible without bottoming out. If adjustment is required, proceed as follows, referring to Figure 1, View C.

1) Disconnect the operating tube at the inside door handle.

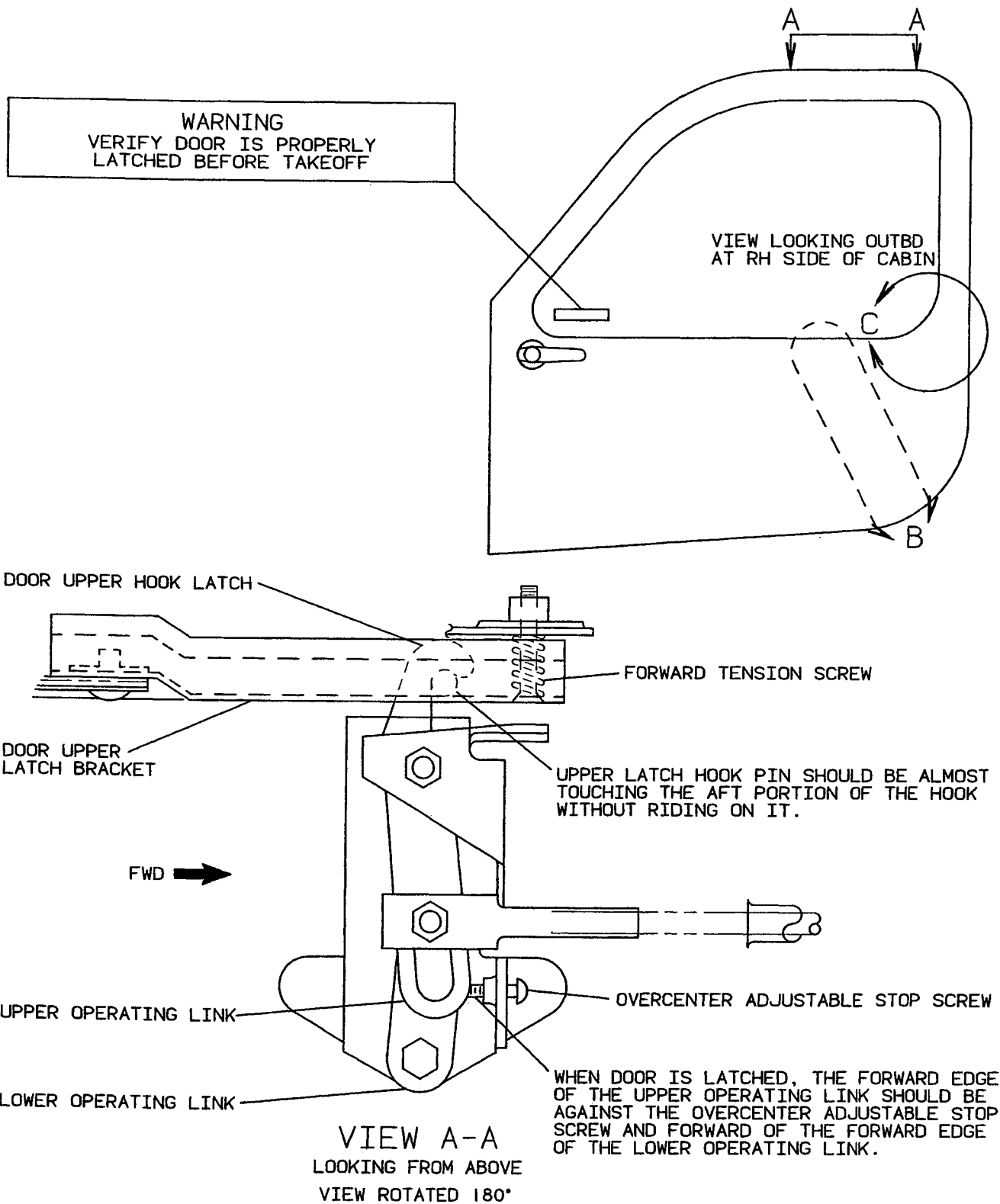
2) Disconnect the lower aft latch pin mechanism from the operating tube (if applicable).

3) Rotate the tube to allow the bolt to protrude the proper distance.

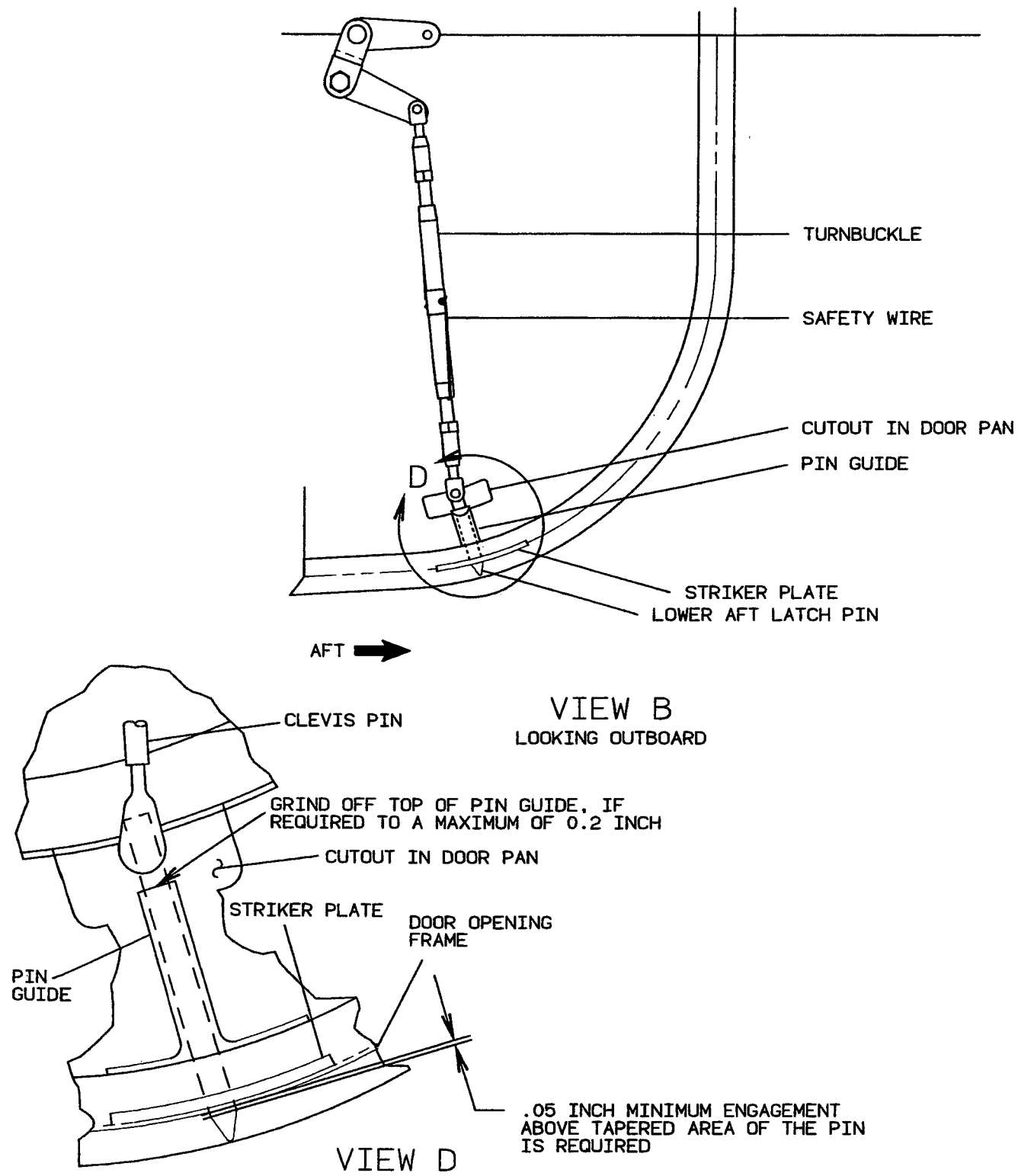
NOTE

When this is done the outside handle may protrude up to 0.25 inch into the airstream, which is acceptable.

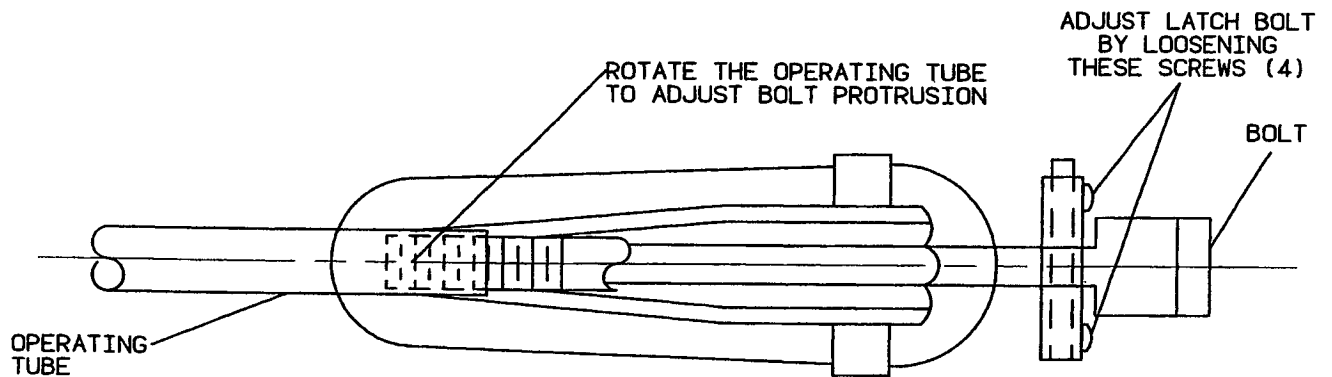
4) Reconnect the lower aft latch pin mechanism (if applicable) to the operating tube. Reconnect the operating tube to the inside door handle.



Cabin Door Latch Points
Figure 1



Cabin Door Latch Points
Figure 1



VIEW C
INSIDE DOOR LOOKING OUTBOARD

Cabin Door Latch Points
Figure 1

NOTE

The aft latch bolt can be adjusted inboard or outboard by loosening the four retaining screws on the aft side of the door and moving the bolt inboard or outboard as necessary, and then tightening the four screws.

NOTE

If any of the conditions described in Step 1 are still present after following the door adjustment instructions contained in this Service Bulletin, contact Beech Customer Support, Telephone (316) 681-8495 or Telefax No. (316) 681-8027.

5. Reinstall any upholstery and/or equipment that was removed to facilitate this Service Bulletin.

RECORD COMPLIANCE: Upon completion of this Service Bulletin, make an appropriate maintenance record entry.

NOTE

If you are no longer in possession of this airplane, please forward this information to the present owner.



August 21, 1990
52-90-0397

Dear Baron & Bonanza Owner:

Beech Aircraft Corporation is reissuing the attached Safety Communique as a reminder of what action should be taken if a cabin door is improperly latched or becomes unlatched prior to or during flight. We further suggest the communique be reviewed periodically to ensure proper procedures are followed when closing the cabin door.

Very truly yours,

BEECH AIRCRAFT CORPORATION



Frank R. Evanega
Administrator
Aircraft Support
Customer Support

FRE:dh

Attachment

Safety Communique

Beech
Hawker

March, 1987

TO ALL BEECHCRAFT WHOLESALERS, AVIATION CENTERS, AERO CENTERS, ALL INTERNATIONAL DISTRIBUTORS & DEALERS, AND OWNERS OF RECORD FOR ALL BEECHCRAFT AIRPLANE MODELS 33, 35, 36, 36TC, 55, 56TC, 58, 58TC and 95

MODELS: 35-33, 35-A33, 35-B33, 35-C33, 35-C33A, E33, F33, G33, E33A, F33A, E33C, F33C, 35, 35R, A35, B35, C35, D35, E35, F35, G35, H35, J35, K35, M35, N35, P35, S35, V35, V35TC, V35A, V35A-TC, V35B, V35B-TC, 36, A36, A36TC, B36TC, 95, B95, B95A, D95A, E95, 95-55, 95-A55, 95-B55, 95-B55A, 95-B55B, 95-C55, 95-C55A, D55, D55A, E55, E55A, 56TC, A56TC, 58, 58A, 58TC, 58TCA

SUBJECT: Cabin Door Operation/Opening

There have been reports of recent accidents which followed a cabin door opening because the pilot did not make sure the door was properly latched prior to takeoff. In each accident the pilot failed to continue to fly the airplane and either lost control or allowed the airplane to stall at low altitude.

THESE ACCIDENTS NEED NOT HAPPEN!!

Properly latching and checking the doors is the pilot's responsibility. All pilots must do the following with regard to cabin doors:

1. Follow the Before Takeoff Check List. Make certain that the door is properly latched before takeoff. To close the cabin door from the inside, observe that the door handle is in the unlocked position. In this position, the latch handle is free to move approximately one inch in either direction before engagement of the locking mechanism. Then grasp the door and firmly pull the door closed. Rotate the door handle fully counterclockwise into the locked position. When the door is properly locked, the door latch handle is free to move approximately one inch in either direction.

NOTE

When checking the door latch handle, do not move it far enough to engage the door latch release mechanism.

Press firmly outward at the top rear corner of the door. If any movement of the door is detected, completely open the door and close again following the above instructions.

2. If a door is not properly latched it may come open during takeoff or in flight. **DO NOT ATTEMPT TO CLOSE THE DOOR.** Additional noise is to be expected when the door is open. Loose items may be drawn out of the cabin. The door will trail open approximately three inches which will increase drag. Do not permit yourself to be distracted by the open door. **ALWAYS MAINTAIN CONTROL OF THE AIRPLANE.**



3. Tests conducted with an open door in flight confirm that the airplane flight characteristics are not changed. However:
- Climb performance is decreased substantially due to the increased drag of the open door.
 - On the airplanes tested, the greatest reduction in climb performance was about a 160 fpm reduction from the handbook value.
 - Remember that climb performance decreases with density altitude. Consequently, at higher density altitudes the resulting percentage reduction in climb performance with the additional drag of an open door is more significant.
 - Service ceiling is reduced.
 - Airspeed and altimeter indications may be affected at slow airspeeds approaching stall speed.
 - The altered pressure field sensed by the static system due to the open door will cause the airspeed indicator to read higher than actual airspeed at stall. However, airspeed indication is accurate (within 1 knot) at normal approach speeds and above.
 - Maximum altitude lost in a stall may increase.
4. If a door comes open abort the takeoff if runway distance and other conditions permit. If the takeoff cannot be safely aborted or the door comes open in flight, **FLY THE AIRPLANE FIRST**. Continue to climb out, straight ahead if practicable, to pattern altitude, accelerate to and maintain normal pattern airspeed and make shallow turns not exceeding 30° of bank. Return to the field and land as conditions permit. **MAINTAIN AT LEAST THE APPROACH AND LANDING SPEEDS RECOMMENDED IN THE PILOT'S OPERATING HANDBOOK** to provide an adequate margin above stall speed. Remember that additional power will be required to compensate for the increased drag. After landing and coming to a complete stop, close the door. Check the door as noted in Step 1 above.

If a door opens in flight and you believe the door was properly latched, have the latches checked by your nearest Beechcraft facility.

This Safety Communique supersedes Safety Communique #68 which was dated October, 1985.