

# Supplement – Baggage Door

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## S.1 Introduction

The baggage door is hinged by two aluminum brackets using a gas strut to support the door. At the bottom of the door two latches are installed that are operated by a button in the door frame.

### Steps to Completion

- Pre-fit the baggage door in the opening in the top fuselage.
- Install the two hinge arms.
- Install the two latches.
- Install the gas strut.
- Mount the cable housings.
- Install the push button mechanism.
- Connect the actuating cables to the latches and the push button.
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### Before You Start

The fuselage top needs to be permanently installed prior to fitting the baggage door.

### Caution!

Always perform the pre-fits that are recommended.

### A Word about Bonding Surfaces

The instructions in this chapter refer to roughing up a surface or preparing a bonding area. When we recommend preparing a surface or a bonding area, we expect each of the following steps to be completed every time.

1. Sand the phenolic or the surface area using 40-grit sandpaper.
2. Vacuum all sanded areas.
3. Clean all sanded surfaces with Acetone.

## S.2 Parts List

### Baggage door and hinge hardware

Item	Part Number	QTY	Description
1)	BD347	2	Hinge arms
2)	AN3-5	2	Bolts
3)	9713K58	8	Washers
4)	AN310-3	2	Castle nuts
5)	MS24665-132	2	Cotter pins
6)		2	Hinge bracket (to fuselage)
7)			Bolts
8)			Nuts
9)	AN470AD4-8	4	Rivets
10)		1	Strut

### Baggage door latches

Item	Part Number	QTY	Description
1)	BD346-01	2	Baggage door lock mount, phenolic
2)	BD346-02	2	Plate for baggage door lock
3)	BD346-03	2	Wedge lock for baggage door
4)			Bolts
5)			Nuts
6)			Bolts
7)			Nuts
8)		2	Cables
9)		2	Cable housing

### Push button

Item	Part Number	QTY	Description
1)		1	Push button
2)			Bolts
3)			Washers
4)			Nuts
5)	AN3-3	1	Bolt (cable connection)
6)		2	Timmerman washers (cable connection)



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Supplement – Baggage Door

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## S.3 Construction Procedures

### S.3.A Fitting and Hinging the Baggage Door

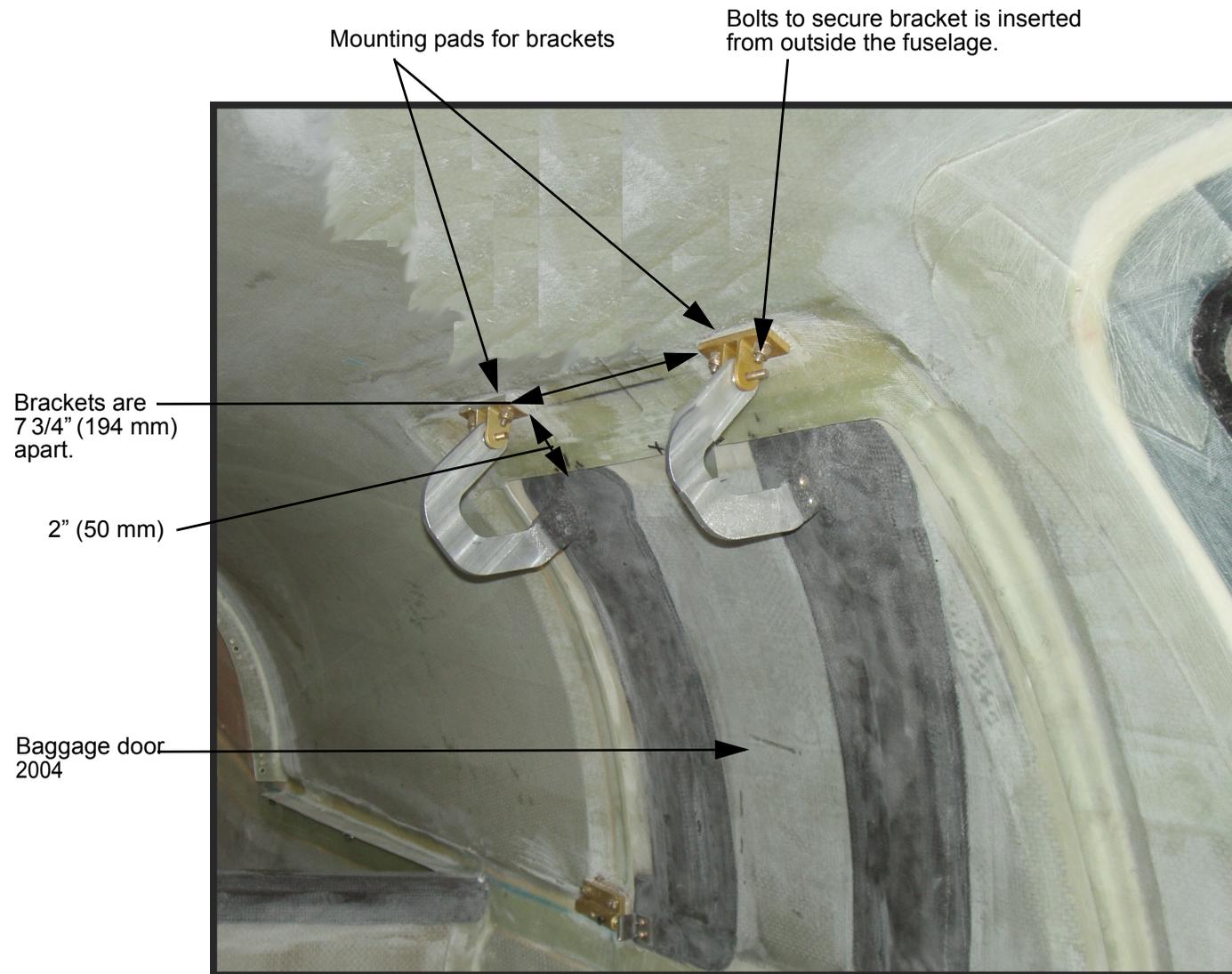


The following first two steps describe how to pre-fit the baggage door. The baggage door must be pre-fit before it can be attached to the hinges.

#### Steps...

1. Check the fit of the premolded baggage door (2004) by inserting it into the opening in the fuselage.
2. Sand the edges of the door until it fits within the joggle on the fuselage.  
**Tip:** There are two joggles around the baggage door area. The baggage door should fit into the shallow, larger circumference joggle. .
3. Determine the location of the two hinge arms on the fuselage top.
  - The inside edge of each bracket the hinge arms attach to need to be 7 3/4" (194 mm) apart.
  - The front edge of the bracket needs to be 2" (50 mm) back from the edge of the baggage door opening.
4. Glue the brackets in place with a temporary glue.
5. Back drill the holes for each bracket from the inside of the fuselage.
6. Countersink the screws from the outside of the fuselage.
7. Remove the brackets and create the floc mounting pad for each hinge.
8. Redrill the holes for the screws.
9. Install the brackets by screwing them in place and securing with bolts .
10. Floc the screws in on the outside of the fuselage.

Figure S.3.A.1 Aluminum hinge arms with brackets installed on the floc mounting pads



## Installing the Hinges

### Steps...

1. Install the two hinge arms (BD347) onto the brackets using bolt, AN3-5, two washers, 9713K58, and slide the bolt through the bracket and the hinge arm. Complete the installation by sliding two more washers, 9713K58, onto the bolt followed by a castle nut, AN310-3, and a cotter pin, MS24665-132.
2. Use duct tape to temporarily hold the baggage door in position on the fuselage.
3. From inside the fuselage, align the hinge brackets to the baggage door by rotating the aluminum hinge brackets outward until they contact the inner surface of the baggage door.
4. Rough up the end of the hinge arm that attaches to the door and floc it to the door.
5. Attach the hinge arms to the baggage door with a 3-BID onto each side of the end of the arm. Extend the 3-BID about 3" (75 mm) onto the door and up about 3/4" (20 mm) onto the aluminum hinge arm.
6. Allow the 3-BID to cure.

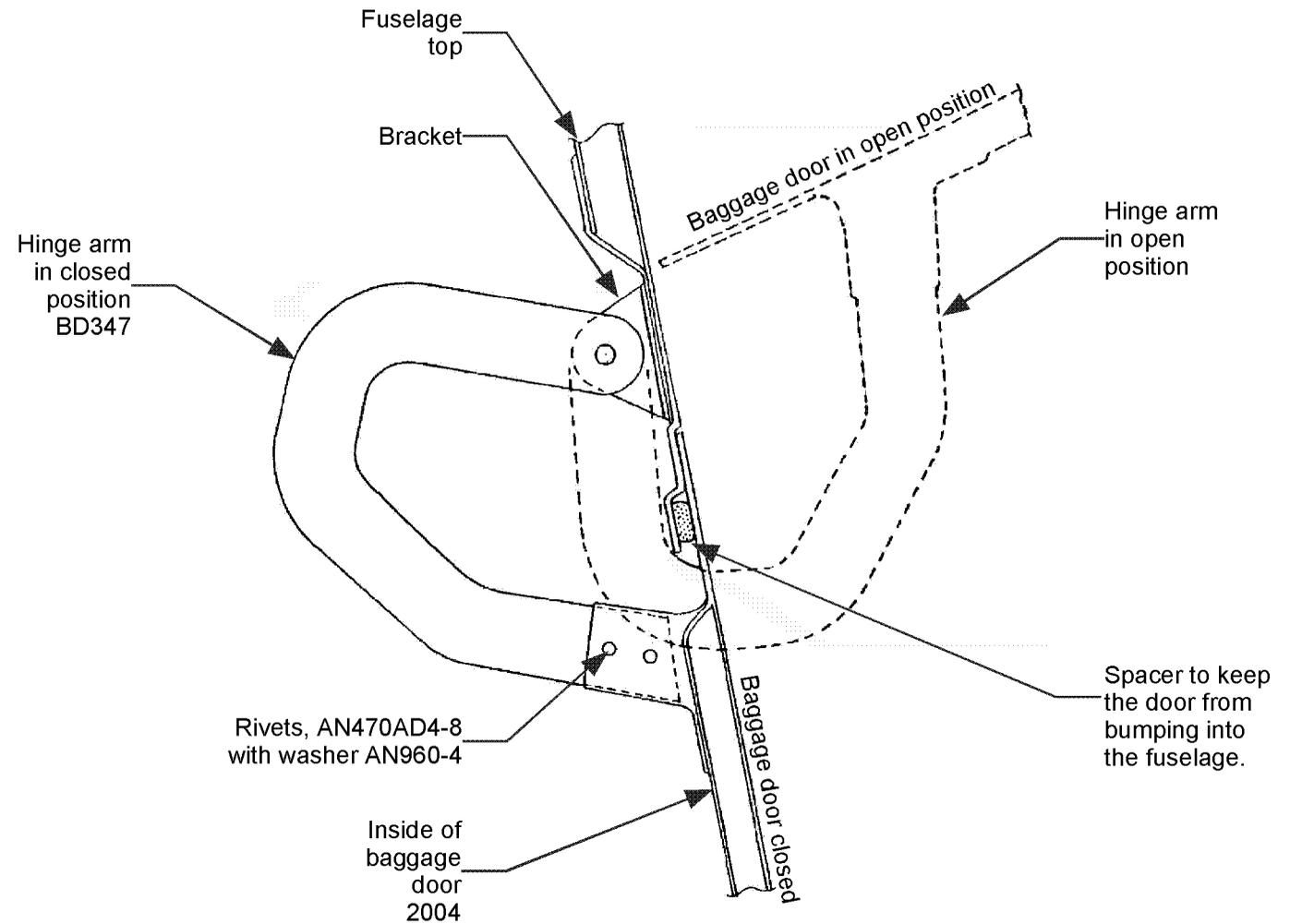
### Steps after cure...

1. Remove the pivot bolts in the bracket and take the baggage door off, leaving the hinge brackets attached to the door.
2. Drill out two holes through the end of the hinge arm and the BID around the it.
3. Set two rivets, AN470AD4-8, into the holes to secure to the door. Place a washer, AN960-4, under each rivet end before squeezing it.  
This is a backup and will secure the hinge arms to the door.

This completes the hinge assembly.

*Note:* The door should not be allowed to bump against the top fuselage when fully opened. Bond a spacer under the lip on the fuselage if necessary.

Figure S.3.A.2 Hinge arm in closed and opened positions



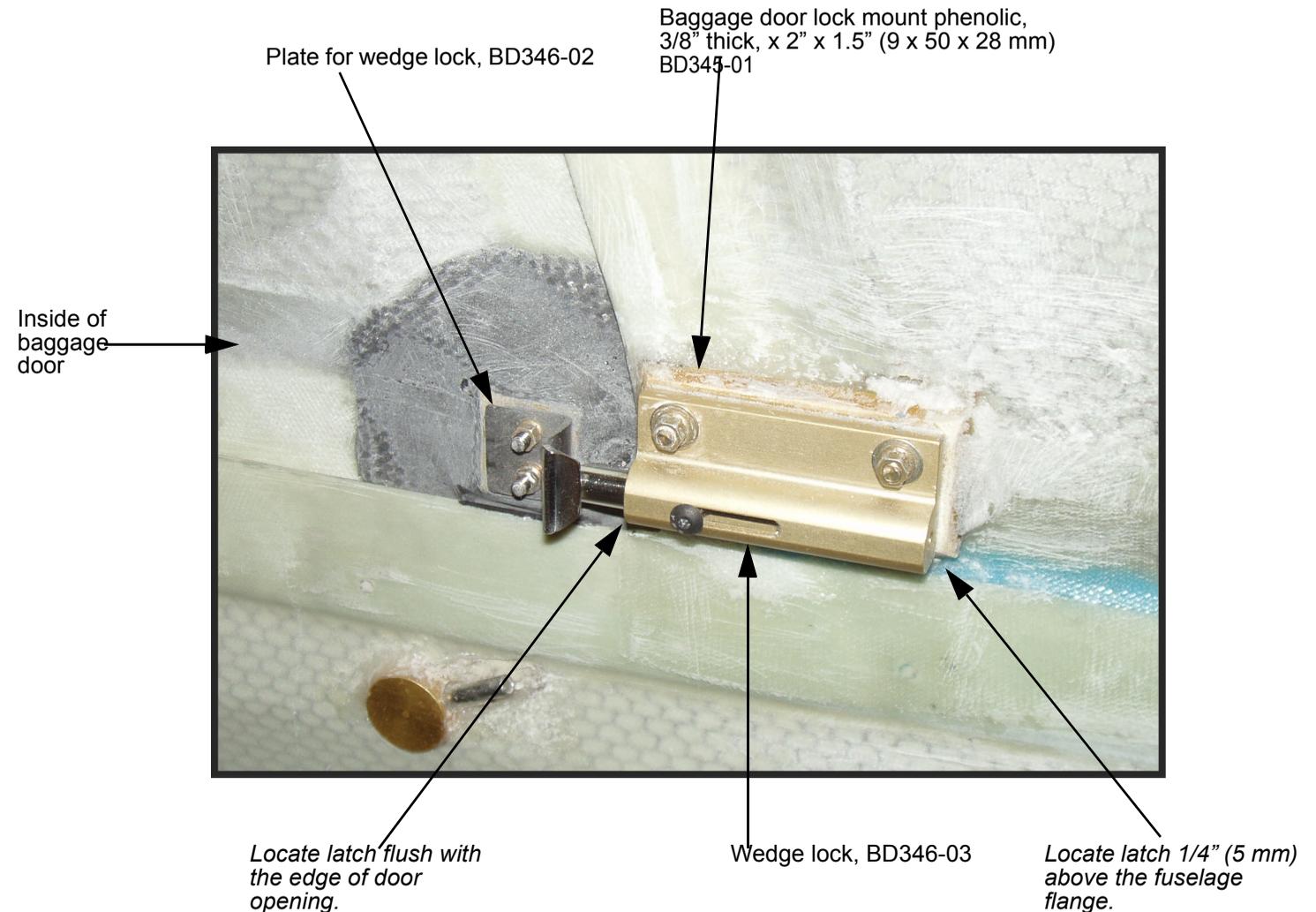
### S.3.B Installing the Latches

The baggage door latches pull the door snugly against the seal and lock it in position.

#### Steps...

1. Locate the proper position for the latches.
  - 1/4" (6 mm) above the fuselage flange.
  - Flush with edge of door opening.Glue a tongue depressor onto the fuselage flange to accurately locate the latch 1/4" (6 mm) above it.
2. Remove the core from the inside of the fuselage at the latch location.
3. Mark each phenolic block mount, BD346-01, for the locations of the screws for the wedge lock.  
These 1/4" phenolic blocks will serve as the primary attachment for the locks.
4. Into each mounting block, insert the two screws using the standard method of potting machine screws in place with epoxy/flox.  
With this approach, the locks can be fitted nearly flush with the baggage door.
5. Attach the wedge lock to the mounting block and secure to the block.
6. Cover the wedge lock with release tape.
7. Install the phenolic mounting blocks to the fuselage. Use epoxy/flox to secure the phenolic piece.
8. Complete the plate for the wedge lock installation on the door in the same manner.  
Make sure the plate is correctly aligned with the wedge lock. You may need to build up the bottom corners of the baggage door in order to get a snugly fitting door.

Figure S.3.B.1 Baggage door latch location and assembly



### S.3.C Installing the Strut

The baggage door uses a strut to support the baggage door when it is open. Test the opening of the door before you glue the strut in place to make sure the door does not hit the fuselage top when it is fully open.

#### Steps...

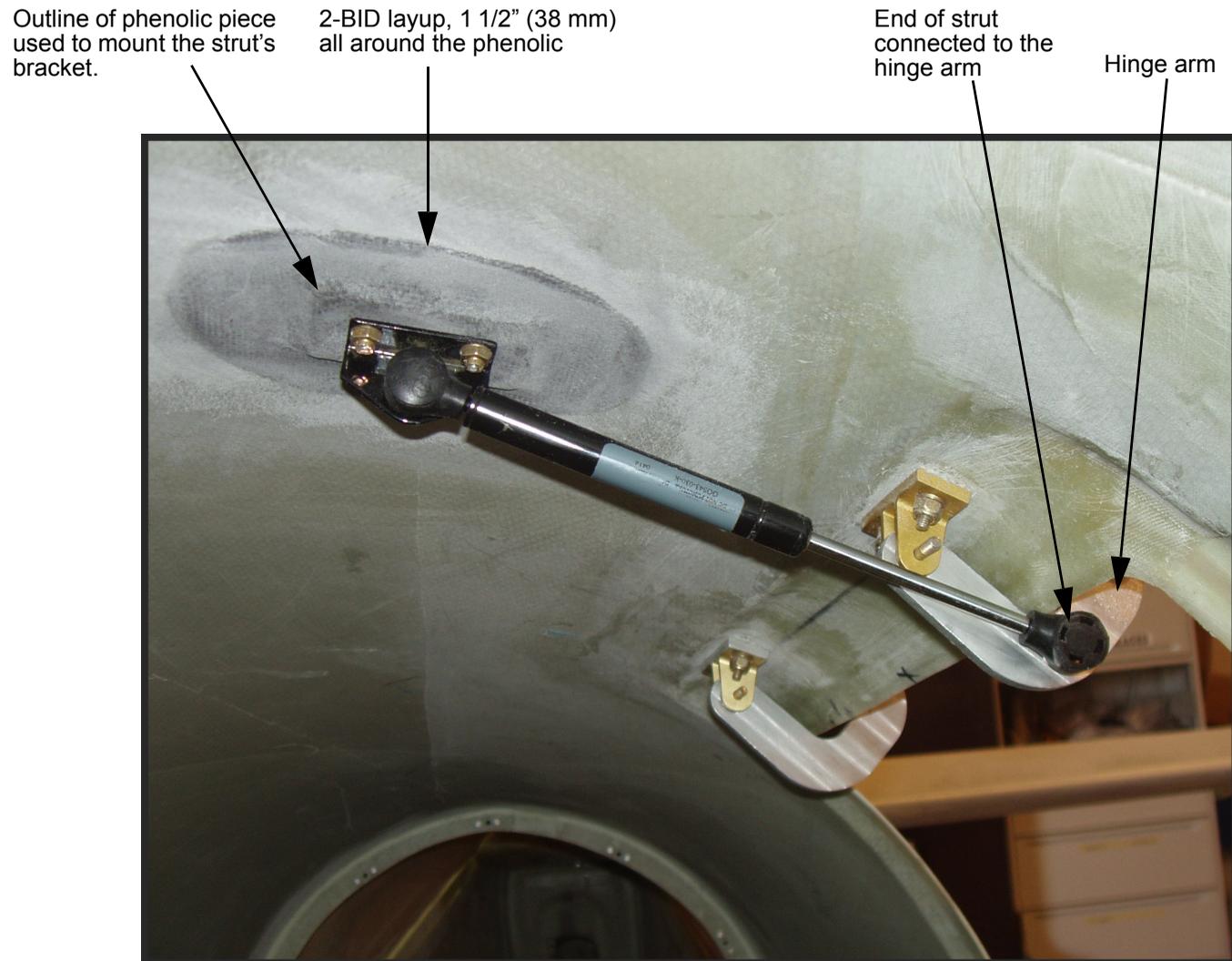
1. Drill a 5/16" (7 mm) diameter hole through the forward hinge arm at the first bend. Center the hole crosswise in the arm. See Figure S.3.C.1.
2. Connect the strut to the hinge arm using . The strut now hangs from the hinge arm.
3. Open the baggage door until it is completely raised and tighten the hinge bolts to hold it open.
4. Lift the hanging end of the strut to the fuselage top, while fully extending the strut. Mark this location on the fuselage top.

**Tip:** Make sure the strut is perpendicular to the baggage door hinge line.

5. Cut a 2 x 3" (50 x 75 mm) piece of phenolic. This phenolic piece is used to mount the strut's bracket to before it is attached to the ceiling of the fuselage.
6. Mark the phenolic for the screw locations.
7. Insert the two screws using the standard method of potting machine screws in place with epoxy/flox.
8. Secure the bracket to the block with nuts .
9. Cover the bracket with release tape.
10. Install the phenolic to the fuselage top in the marked location. Use epoxy/flox to secure the phenolic piece.
11. Add a 2-BID layup extending 1 1/2" (38 mm) beyond the edge of the phenolic.

Allow the layup to cure with the door open.

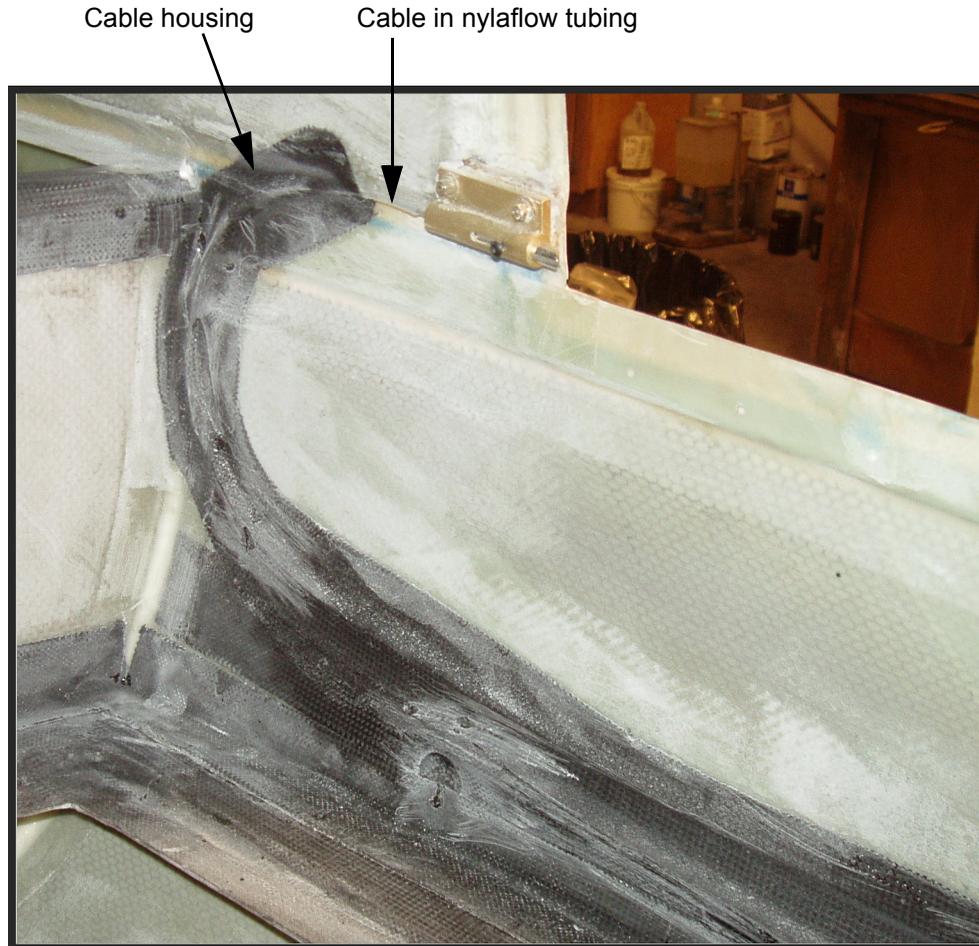
Figure S.3.C.1 Strut installation from the fuselage to the hinge arm



### S.3.D Mounting the Actuating Cable Housing

There are two actuating cables, one for each latch. Both cables connect to the push button in the door frame next to the pilot.

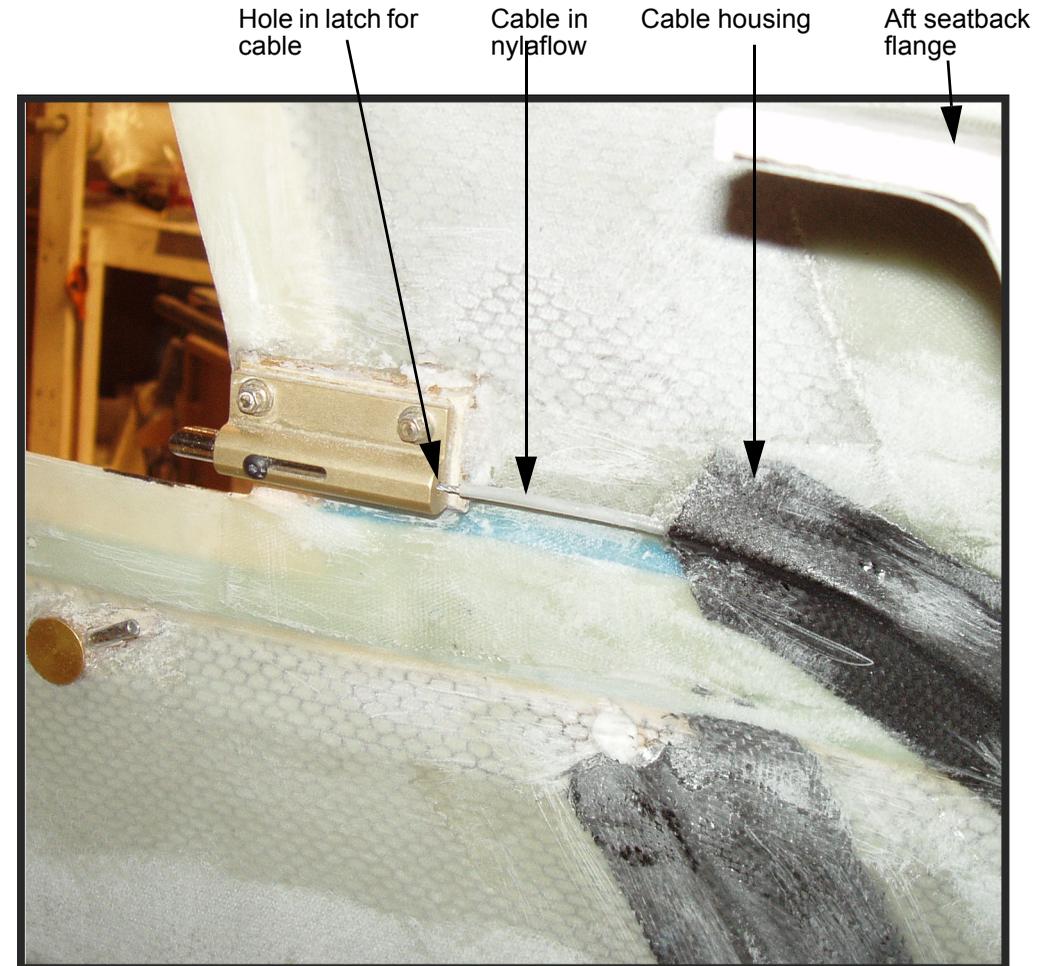
Figure S.3.D.1 Cable location for the aft latch on the baggage door



### Steps...

1. Relax the coiled cable housings using heat.
2. Scuff up the inside of the fuselage where the cable housings will be installed. Also scuff the cable housings.

Figure S.3.D.2 Cable location for the forward latch on the baggage door



3. Drill holes through the aft seatback flange and the bulkhead.
4. Tack glue the cable housings in place using superglue.
5. Run a small microfillet on each side of the cable housing.
6. Place a 1-BID, 2" (50 mm) wide layup over the cable housing.

### Connecting the Actuating Cables

Before you can attach the forward ends of the latch cables, complete S.3.E *Installing the Push Button* on page 19.9.

#### Steps...

1. Connect each cable to a door latch by threading the cable into hole at the end of the latch.
2. Pull the cables taut.
3. Connect the other end of both cables to the bottom of the push button mechanism using an AN-3 bolt and two Timmerman washers. The cables need to be between the washers.

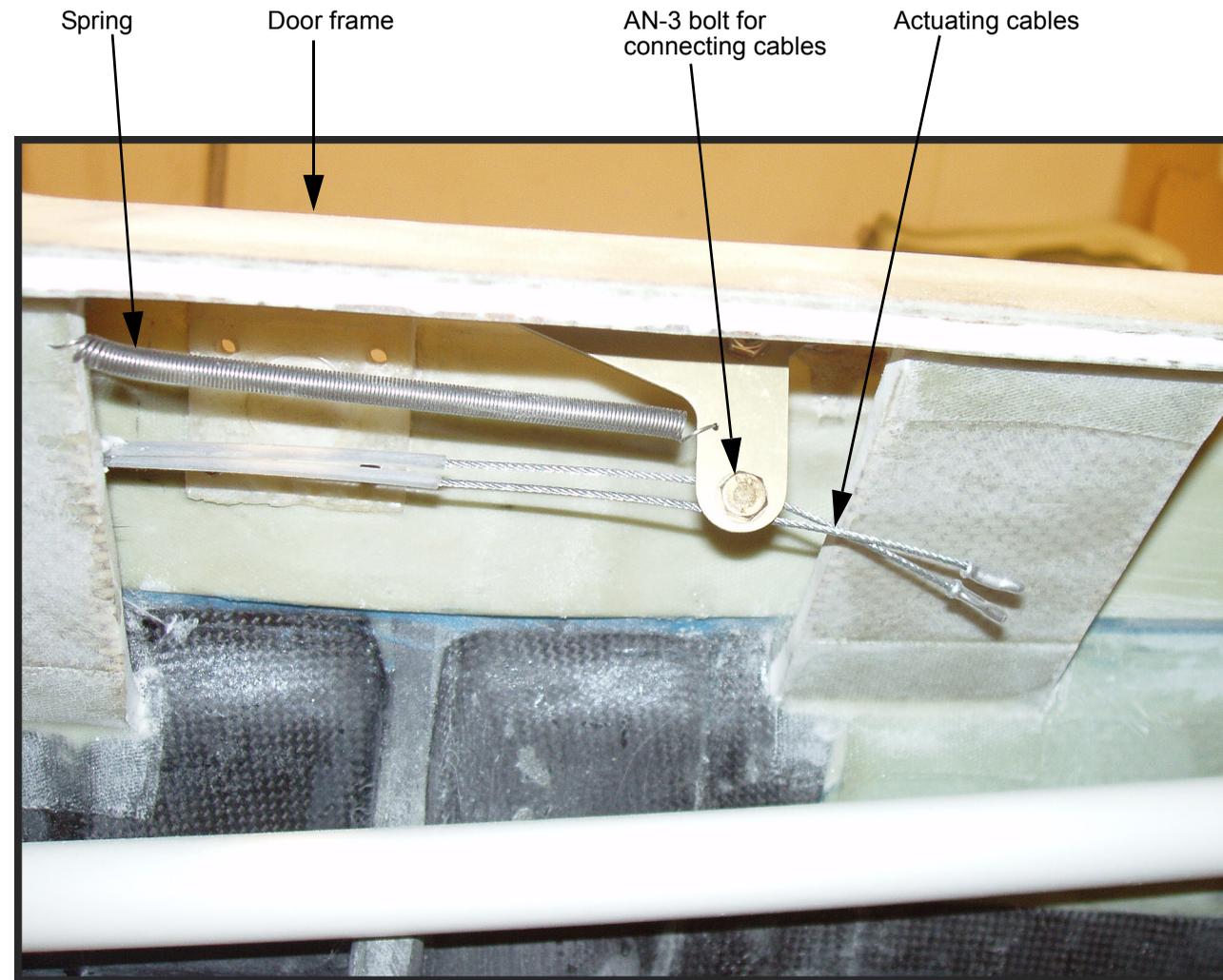
### Connecting the Spring

The spring returns the push button mechanism into position after you push the button.

#### Steps...

- 1.
- 2.

Figure S.3.D.3 Forward end of actuating cable connected to the push button's AN-3 bolt



### S.3.E Installing the Push Button

The push button mechanism will pull the actuating cables to release the latches on the baggage door.

#### Steps...

1. Position the push button and trace around the button on the door frame.

#### Button position

- Keep the button in the outer aft section of door frame.
  - Make sure the button will pull the cables when the button is pushed. (This can be adjusted by shortening the actuating cables.)
2. Cut out the hole using an exact-size hole saw or using a die-grinder with a very steady hand.
  3. Leave approximately .0050-.0060" gap around the push button to allow for primer and paint.
  4. Center the push button in the hole, from underneath, and mark the locations for the mounting holes.
  5. Drill two 3/16" (4.5 mm) diameter mounting holes and countersink the screws .
  6. Secure the screws with washers and nuts .
  7. Secure the push button with one screw inserted from the top with a washer and nut from the bottom.

Now return to *Connecting the Actuating Cables* on page 19.8 to complete the push button connections.

Figure S.3.E.1 Push button mechanism on underside of door frame

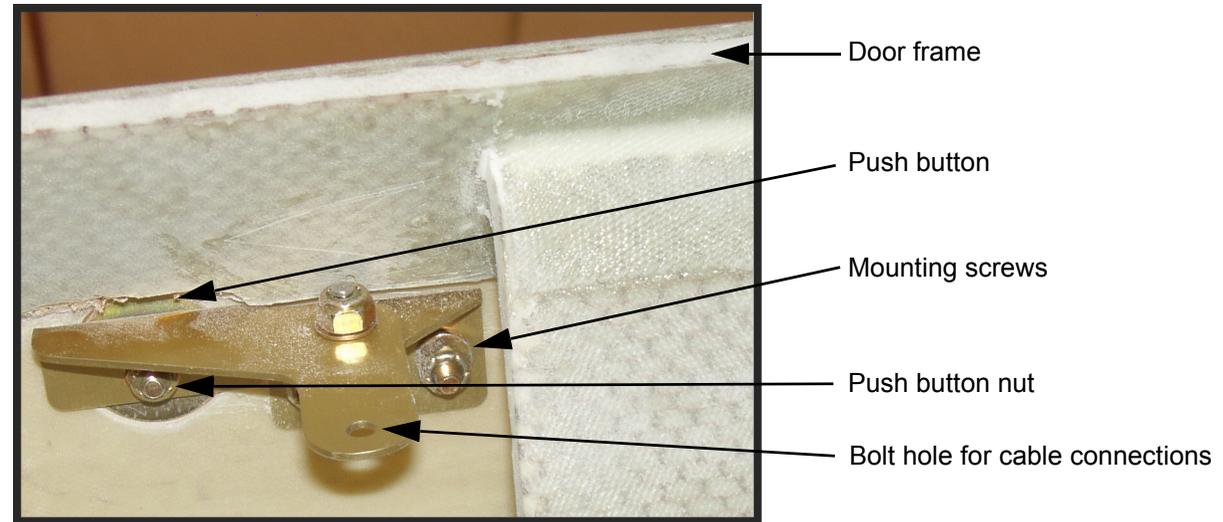


Figure S.3.E.2 Locating the push button

