

## CHAPTER 52 — DOORS AND WINDOWS

### TABLE OF CONTENTS

Paragraph Number	Title	Chapter/Section Number	Page Number
<b>DOORS AND WINDOWS</b>			
52-1	Doors .....	52-00-00	5
52-2	General Maintenance Practices .....	52-00-00	5
52-3	Seal Replacement — Access Doors, Panels, Cowling, Fairings, and Covers.....	52-00-00	5
<b>CREW DOORS</b>			
52-4	Crew Doors .....	52-00-00	13
52-5	Crew Doors Description and Maintenance .....	52-00-00	13
52-6	Removal .....	52-00-00	13
52-7	Disassembly .....	52-00-00	13
52-8	Crew Doors — Inspection .....	52-00-00	16
52-9	Crew Doors — Repair or Replacement .....	52-00-00	16
52-10	Assembly .....	52-00-00	18
52-11	Installation .....	52-00-00	19
52-12	Crew Door Jettison Mechanism .....	52-00-00	19
52-13	Removal .....	52-00-00	19
52-14	Installation .....	52-00-00	19
52-15	Operational Check .....	52-00-00	21
52-15A	Crew Door Hinges .....	52-00-00	22
52-15B	Crew Door Hinges — Removal .....	52-00-00	22
52-15C	Crew Door Hinges — Inspection .....	52-00-00	22
52-15D	Crew Door Hinges — Installation .....	52-00-00	22
52-15E	Crew Door Hinges — Repair .....	52-00-00	22C
<b>PASSENGER/CARGO AREA ACCESS DOORS</b>			
52-16	Passenger/Cargo Area Access Doors .....	52-00-00	23
52-17	Passenger/Cargo Doors .....	52-00-00	23
52-18	Removal .....	52-00-00	23
52-19	Inspection .....	52-00-00	23
52-20	Repair or Replacement .....	52-00-00	23
52-21	Installation .....	52-00-00	23
52-22	Operational Check and Adjustment .....	52-00-00	24
52-23	Passenger/Cargo Doors Latches .....	52-00-00	24
52-24	Removal .....	52-00-00	24
52-25	Installation .....	52-00-00	24
52-26	Emergency Escape Panel .....	52-00-00	27
52-27	Removal .....	52-00-00	27
52-28	Installation .....	52-00-00	27
52-29	Operational Check .....	52-00-00	27
52-30	Annual Functional Inspection for Crew and Passenger/Cargo Doors .....	52-00-00	29
52-31	Adjustment of Emergency Escape Panel Latch System .....	52-00-00	32

**TABLE OF CONTENTS (CONT)**

<b>Paragraph Number</b>	<b>Title</b>	<b>Chapter/Section Number</b>	<b>Page Number</b>
52-32	Cargo Hinged Panels.....	52-00-00	32
52-33	Removal.....	52-00-00	32
52-34	Repair or Replacement.....	52-00-00	32
52-35	Installation.....	52-00-00	34
52-36	Baggage Compartment Doors.....	52-00-00	36
52-37	Removal.....	52-00-00	36
52-38	Inspection.....	52-00-00	36
52-39	Repair.....	52-00-00	36
52-40	Installation.....	52-00-00	36

**ACCESS COVERS AND DOORS**

52-41	Access Covers and Doors.....	52-00-00	37
52-42	Nose Access Doors.....	52-00-00	37
52-43	Removal.....	52-00-00	37
52-44	Inspection.....	52-00-00	37
52-45	Repair.....	52-00-00	37
52-46	Installation.....	52-00-00	37
52-47	Electrical and Equipment Compartment Access Doors.....	52-00-00	37
52-48	Removal.....	52-00-00	37
52-49	Inspection and Repair.....	52-00-00	37
52-50	Installation.....	52-00-00	37
52-51	Miscellaneous Access Doors.....	52-00-00	38
52-52	Removal.....	52-00-00	38
52-53	Inspection and Repair.....	52-00-00	38
52-54	Installation.....	52-00-00	38
52-55	Tail Rotor Driveshaft Access Covers.....	52-00-00	38
52-56	Removal.....	52-00-00	38
52-57	Inspection.....	52-00-00	38
52-58	Repair.....	52-00-00	38
52-59	Installation.....	52-00-00	38

**WINDOWS AND WINDSHIELDS**

52-60	Windows and Windshields.....	52-00-00	41
52-61	Windshields.....	52-00-00	41
52-62	Windshields — Removal.....	52-00-00	41
52-63	Windshields — Cleaning.....	52-00-00	41
52-64	Windshields — Inspection and Repair.....	52-00-00	41
52-65	Windshields — Installation.....	52-00-00	42
52-66	Cabin Roof Windows.....	52-00-00	42A
52-67	Cabin Roof Windows — Removal.....	52-00-00	42A
52-68	Cabin Roof Windows — Inspection and Repair.....	52-00-00	42A
52-69	Cabin Roof Windows — Installation.....	52-00-00	42A
52-70	Lower Nose Section Windows.....	52-00-00	45
52-71	Removal.....	52-00-00	45
52-72	Inspection and Repair.....	52-00-00	45
52-73	Installation.....	52-00-00	46

## TABLE OF CONTENTS (CONT)

Paragraph Number	Title	Chapter/Section Number	Page Number
52-74	Crew Door Windows .....	52-00-00	46
52-75	Removal .....	52-00-00	46
52-76	Inspection and Repair .....	52-00-00	47
52-77	Installation .....	52-00-00	47
52-78	Passenger/Cargo Door Windows (Doors Equipped With Emergency Escape Panels) .....	52-00-00	48
52-79	Removal .....	52-00-00	48
52-80	Inspection and Repair .....	52-00-00	48
52-81	Passenger/Cargo Door Windows (Doors Equipped With Emergency Escape Panels) — Installation .....	52-00-00	49
52-82	Passenger/Cargo Door Windows (Doors Equipped With Push Out Windows) .....	52-00-00	49
52-83	Passenger/Cargo Door Windows (Doors Equipped With Push Out Windows) — Removal .....	52-00-00	49
52-84	Passenger/Cargo Door Windows (Doors Equipped With Push Out Windows) — Inspection .....	52-00-00	49
52-85	Deleted .....	52-00-00	50
52-86	Passenger/Cargo Door Windows (Doors Equipped With Push Out Windows) — Repair .....	52-00-00	50
52-87	Passenger/Cargo Door Windows (Doors Equipped With Push Out Windows) — Installation .....	52-00-00	52
52-88	Cargo Hinged Panel Door Windows .....	52-00-00	54
52-89	Cargo Hinged Panel Door Windows — Removal .....	52-00-00	54
52-90	Cargo Hinged Panel Door Windows — Inspection and Repair .....	52-00-00	54
52-91	Cargo Hinged Panel Door Windows — Installation .....	52-00-00	54

## FIGURES

Figure Number	Title	Page Number
52-1	Fuselage Access Doors, Covers, and Panels .....	7
52-2	Lower Fuselage and Tailboom Access Doors, Covers, and Panels .....	11
52-3	Interior Cabin Access Doors, Covers, and Panels .....	14
52-4	Crew Door .....	17
52-5	Crew Door Jettison Mechanism .....	20
52-5A	Crew Door Hinges .....	22A
52-6	Passenger/Cargo Door .....	25
52-7	Passenger/Cargo Door Latch Panel (Typical) .....	28
52-8	Emergency Escape Panel .....	30
52-9	Lock Pin Holes Repair .....	33
52-10	Emergency Escape Panel Latch .....	34
52-11	Cargo Hinged Panel Door .....	35
52-12	Tailboom Driveshaft Access Covers .....	39
52-13	Windows and Windshields .....	43
52-14	Windshield and Window Damage Limits .....	44



FIGURES (CONT)

Figure Number	Title	Page Number
52-15	Passenger/Cargo Door Windows (Doors Equipped With Push Out Style Windows) .....	51

## DOORS AND WINDOWS

### 52-1. DOORS.

This chapter provides maintenance data for crew doors, passenger/cargo doors, access doors and panels, tail rotor driveshaft covers, and windshields and windows.

### 52-2. GENERAL MAINTENANCE PRACTICES.

### 52-3. SEAL REPLACEMENT - ACCESS DOORS, PANELS, COWLING, FAIRINGS, AND COVERS.

#### MATERIALS REQUIRED

NUMBER	NOMENCLATURE
C-300	Adhesive
C-309	Methyl-Ethyl-Ketone (MEK)
C-311	Adhesive
C-423	Abrasive Cloth or Paper

#### NOTE

Seals may be either rubber or silicone composition. Bonding procedure is different for each type. Seals subjected to fuel or oil contamination (used in the pylon transmission and engine compartment) should be of polysulfide or neoprene (rubber type).

1. Determine type of seal being replaced by cutting a small specimen from damaged seal and subjecting it to flame. Silicone seals are more rapidly affected by flame and will leave a gray ash residue. Rubber type seals are much more fire resistant and will leave a black ash residue.

2. Remove all paint and primer from metal surface where seal is to be applied.

3. Clean new seal and the metal where seal is to be applied with MEK (C-309) or equivalent and dry with clean, lint-free cloths.

#### NOTE

It is necessary to thoroughly clean surfaces before sanding to preclude working any foreign matter into pores of material.

4. Sand mating surfaces of seal and metal with 180 grit abrasive cloth or paper (C-423).

5. Clean sanded surfaces with MEK (C-309) and dry with a clean, lint-free cloths.

6. Bond rubber type (black ash) seals as follows:

a. Apply an even coat of adhesive (C-311) to mating surfaces of seal and metal.

b. Allow adhesive to air dry 10 to 15 minutes at 75°F (24°C) or above. Adhesive should be aggressively tacky and adhere (but not transfer to) finger when touched.

c. Repeat preceding steps a. and b. Second coat is mandatory to obtain good adhesion.

d. Start at one end and roll on seal. Press seal down to expel all air to ensure proper contact and adhesion.

e. Air cure for a minimum of 4 hours at 75°F (24°C) or above.

7. Bond silicone composition (gray ash) seals as follows:



DO NOT CAP ADHESIVE AFTER MIXTURE. MIXTURE RELEASES

## **BHT-212-MM**

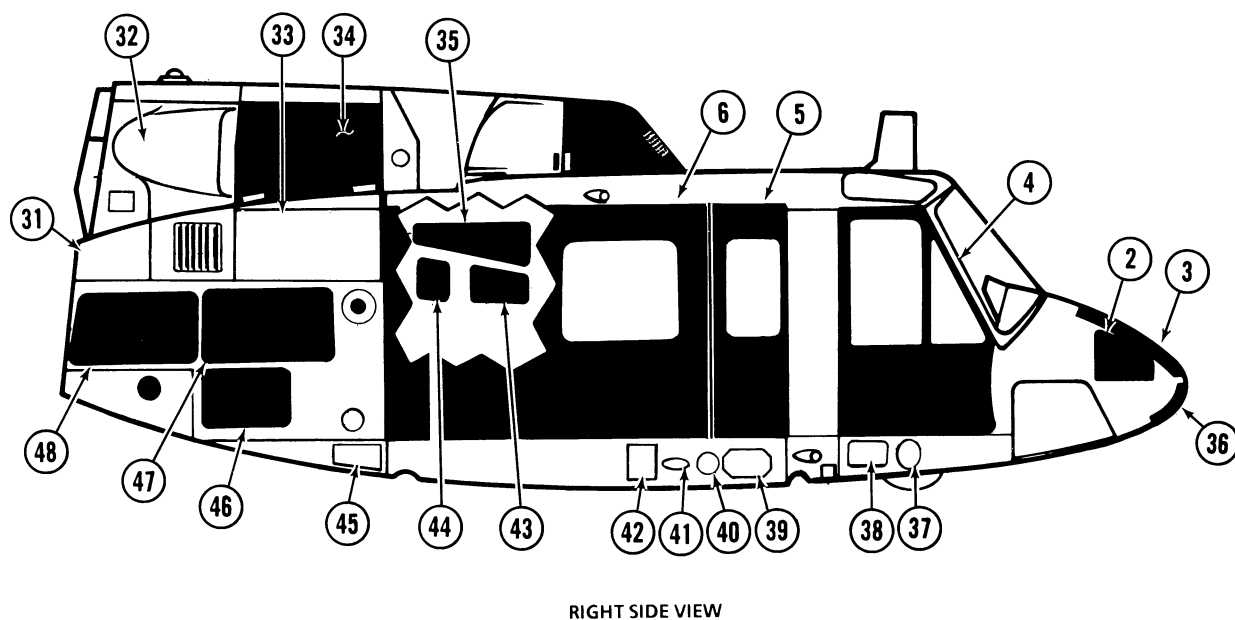
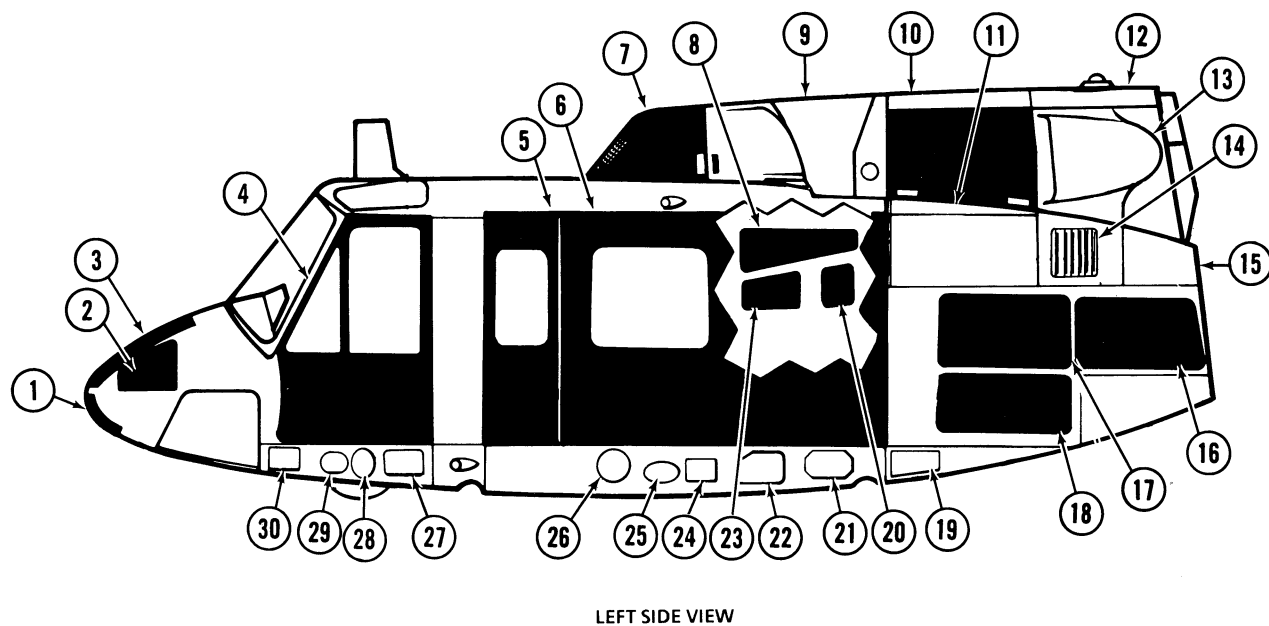
HYDROGEN GAS WHICH CAN CAUSE HIGH PRESSURES. POT LIFE OF THIS ADHESIVE IS 6 HOURS.

**a.** Apply one even coat of adhesive (C-300) to bond surfaces of seal and metal.

**b.** Air dry at 75°F (24°C) or above, for at least an hour, but not to exceed 8 hours.

**c.** Start at one end and roll on seal. Press seal down to expel all air to ensure proper contact and adhesion.

**d.** Curing time for adhesive is 7 days at 75 °F (24°C). Curing may be accelerated by heating 110 to 115°F (43 to 45.8°C) for 18 hours.



212-M-52-1-1

Figure 52-1. Fuselage access doors, covers, and panels (sheet 1 of 4)

ITEM	NOMENCLATURE	ACCESSES	DIMENSIONS (INCHES)	RETAINER	
				TYPE	QTY
1	Nose Door (Lower)	Inverters No. 1, 2, and 3, DC Control Panels No. 1 and 2	24 x 34	Camlock Hinge	7 2
2	Access Panel	RMI Adapter No. 1 and 2	13 x 18	Screw	12
3	Nose Door (Upper)	Battery, RPM Limit Warning, Engine/Pilot Instrument Lights, Power Supply, Glidescope Antenna Marker Beacon/ADF/DME/VOR Receivers, VHF Transceivers and VOR Coupler	24 x 34	Camlock Hinge	7 2
4	Crew Door (Pilot/Copilot)	Instrument Panel and Pedestal	36 x 82	Latch Hinge	1 2
5	Hinged Door (Left/Right)	Forward Passenger and Cargo Compartment	20 x 33	Latch Hinge	1 2
6	Sliding Cargo Door (Left/Right)	Aft Passenger and Cargo Compartment	38 x 42	Roller Latch/Lock Track	5 1 1
7	Fairing	Upper Transmission, System No. 2 Hydraulic Pump, and Systems No.1 and No. 2 Hydraulic Reservoirs	34 x 37	Hinge Latch	2 3
8	Door Assembly	Transmission Mounts, Fuel Shutoff Valve, Driveshaft Quill and Coupling, Hydraulic Pump, Droop Compensator Controls, Oil and Hydraulic Manifolds, and Scupper Drain Tube	10 x 33	Screw	23
9	Access Panel	Accessory Gearbox, No. 1 Engine	13 x 14	Screw	12
10	Cowl Assembly	No. 1 Engine Air Inlet	33 x 45	Latch Hinge	2 1
11	Cowl Assembly	Linear Actuator and No.1 Engine	12 x 50	Latch Hinge	2 2
12	Door Assembly	Oil Filler, Combining Gearbox	4.5 x 5.5	Hinge	1
13	Scoop Assembly	Fire Extinguisher Bottles and Oil Cooler Blowers	18 x 30	Hinge Latch	2 3
14	Door Assembly	Combining Gearbox and Fire Extinguisher Bottles	16 x 18	Hinge	2
15	Cowl Assembly	Tail Rotor Driveshaft Hanger and Support and Oil Cooler Support	16 x 29	Screw	32
16	Door Assembly	Flasher Relay, Position Light, and Dual Remote Compensator	25 x 42	Hinge Latch	2 2
17	Door Assembly	Pilot/Copilot 3-Axis Gyro	18 x 35	Hinge Latch	2 2
18	Door Assembly	General Inspection	24 x 40	Hinge Latch	2 2

212-M-52-1-2

Figure 52-1. Fuselage access doors, covers, and panels (sheet 2)



ITEM	NOMENCLATURE	ACCESSES	DIMENSIONS (INCHES)	RETAINER	
				TYPE	QTY
19	Access Panel	Landing Gear Attach Structure	9 x 13	Screw	20
20	Cover	Pylon Damper and Collective Servo	7 x 7	Screw	8
21	Cover	Hydraulic System 1 (Test)	10 x 12	Camlock	10
22	Cover	Hydraulic System 2 (Test)	10 x 12	Camlock	7
23	Door Assembly	Transmission Lift Link and Cyclic/Collective Servos	11 x 19	Camlock	18
24	Cover	Electrical Connection	7 x 10	Screw	8
25	Door	Inspection Area	3 x 7	Screw	8
26	Door	Inspection Area	6 x 6	Screw	8
27	Door	Collective Jackshaft, Copilot Collective Stick Elbow and Throttle	8 x 12	Screw	14
28	Door	Copilot Flight Control Tubes and Cyclic Jackshaft	7 x 11	Screw	12
29	Door	Inspection Area	5 x 5	Screw	6
30	Door	Antitorque Controls	8 x 10	Screw	14
31	Cowl Assembly	Oil Cooler and Tail Rotor Driveshaft Hanger and Hanger Support	16 x 29	Screw	32
32	Scoop Assembly	Combining Gearbox, Fire Extinguisher Bottles, and Oil Cooler Blowers	18 x 30	Hinge Latch	2 3
33	Cowl Assembly	Ng Flight Idle Stop	12 x 50	Hinge Latch	2 2
34	Cowl Assembly	Engine No. 2 Air Inlet	33 x 45	Hinge Latch	1 2
35	Door Assembly	Transmission Mounts, Fuel Shutoff Valve, Main Driveshaft Coupling and Quill, Hydraulic Pump and Manifold	10 x 33	Screw	23
36	Door Assembly	External Power Connection	3 x 6	Hinge/Dzus	1
37	Door	Pilot Cyclic Controls	7 x 11	Screw	12
38	Door	Pilot Cyclic Controls	8 x 12	Screw	14
39	Door	Heat Distribution Valve	5 x 10	Screw	10
40	Door	Heat Distribution Valve	6 x 6	Screw	8
41	Door	Inspection Area	3 x 7	Screw	8
42	Cover	Electrical Connection	7 x 10	Screw	8
43	Door Assembly	Transmission Lift Link and Cyclic Servo	11 x 19	Camlock	18

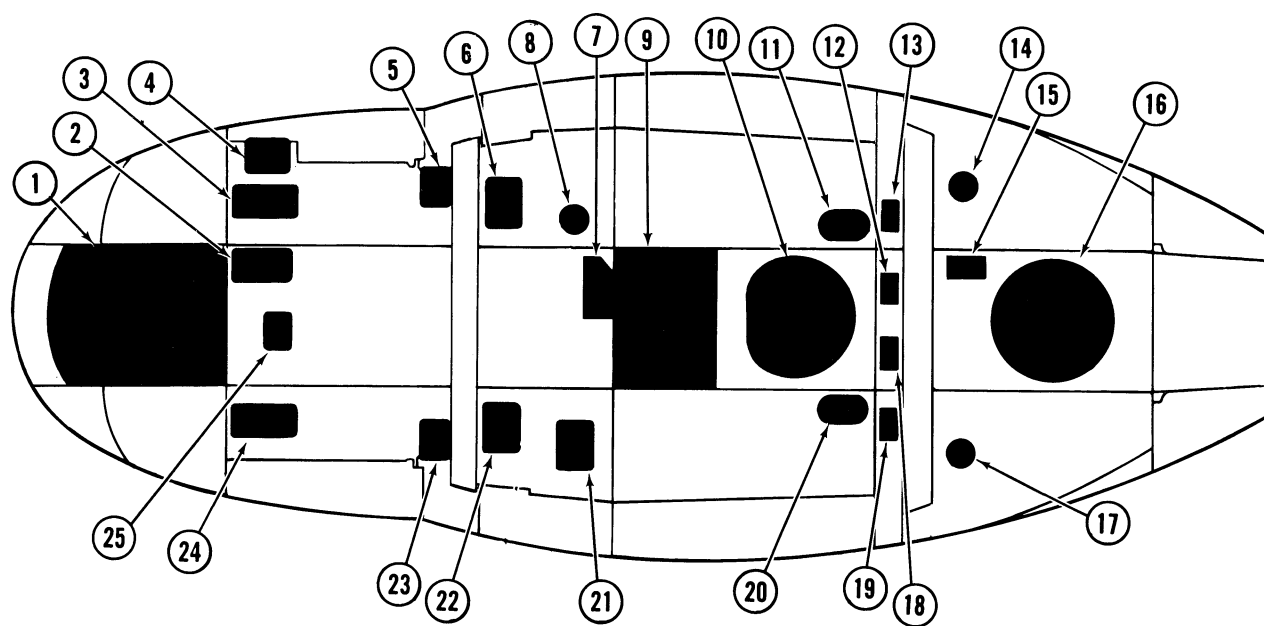
212-M-52-1-3

Figure 52-1. Fuselage access doors, covers, and panels (sheet 3)

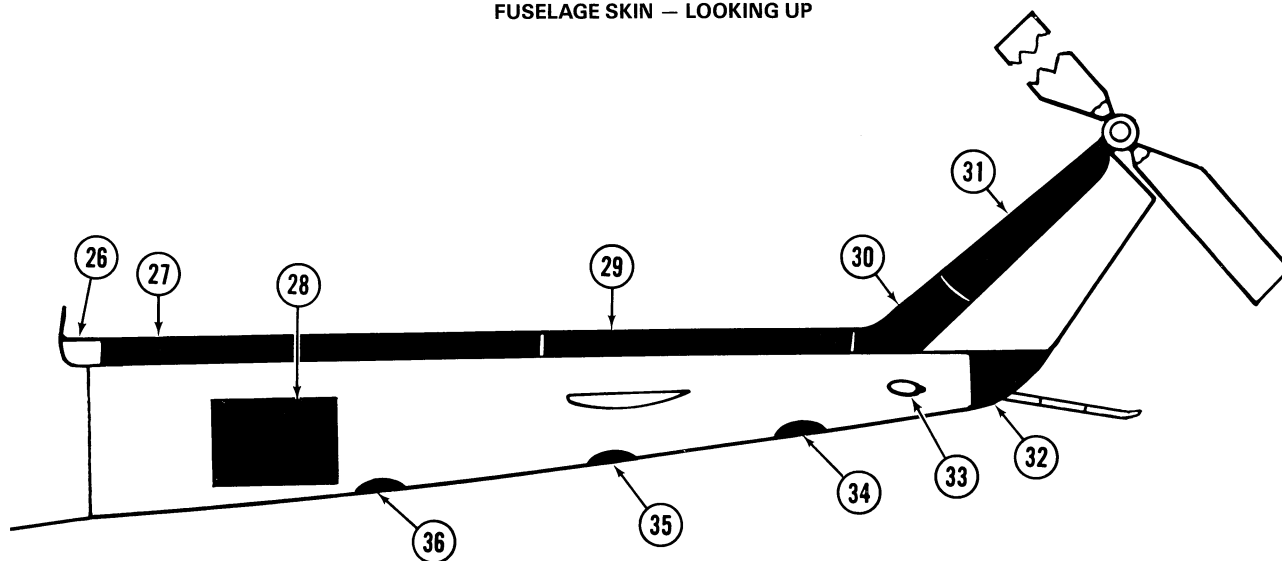
ITEM	NOMENCLATURE	ACCESSES	DIMENSIONS (INCHES)	RETAINER	
				TYPE	QTY
44	Cover	Pylon Damper, Cyclic/Collective Servo, System 1 Hydraulic Pump, Rotor Tach Generator, Oil Level Sight Glass	7 x 7	Screw	8
45	Door	Landing Gear Attach Structure	9 x 13	Screw	20
46	Door Assembly	Heater Noise Suppressor	23 x 34	Hinge Latch	2 2
47	Door Assembly	Heater Noise Suppressor	19 x 35	Hinge Latch	2 2
48	Door Assembly	Antitorque Hydraulic Servo	25 x 42	Hinge Latch	2 2

212-M-52-1-4

**Figure 52-1. Fuselage access doors, covers, and panels (sheet 4)**



FUSELAGE SKIN — LOOKING UP



LEFT SIDE TAILBOOM

212-M-52-2-1

**Figure 52-2. Lower fuselage and tailboom access doors, covers, and panels (sheet 1 of 3)**

ITEM	NOMENCLATURE	ACCESSES	DIMENSIONS (INCHES)	RETAINER TYPE	QTY
1	Panel Assembly	Forward Electrical Compartment	14 x 30	Screw	14
2	Door	Antitorque Controls	6.3 x 12.7	Screw	18
3	Door	Copilot Cyclic Controls	8 x 14	Screw	14
4	Door	Antitorque Controls	8 x 10	Screw	14
5	Door	Collective Throttle Controls and Landing Gear Support Structure and Aft Magnetic Brake	7 x 9	Screw	13
6	Door	Landing Gear Support Structure	13 x 20	Screw	12
7	Door	Collective/Cyclic Control Tubes	7 x 13	Screw	15
8	Door	General Inspection Area	7 x 7	Screw	8
9	Antenna Door	ADF Sense Antenna	26 x 28	Screw	13
10	Door Assembly	Cargo Hook and Lift Beams	24 x 25	Screw	12
11	Door	Fuel Boost Pump	12 x 16	Screw	15
12	Door	Fuel Cell Interconnect	6 x 7	Screw	10
13	Door	Fuel Cell Interconnect and Aft Landing Gear Support Structure	6 x 8	Screw	14
14	Door	Fuel Cell Interconnect	6 x 6	Screw	8
15	Door	Fuel Cell Interconnect	6 x 7	Screw	10
16	Door Assembly	Antitorque Servo Control Tubes	24 x 24	Screw	12
17	Door	Heater Compartment	6 x 6	Screw	8
18	Door	Fuel Cell Interconnect	6 x 7	Screw	10
19	Door	Fuel Cell Interconnect and Aft Landing Gear Support Structure	6 x 8	Screw	14
20	Door	Fuel Boost Pump	12 x 16	Screw	15
21	Door	Antitorque Lever	8 x 10	Screw	12
22	Door	Landing Gear Attach Structure	8 x 11	Screw	12
23	Door	General Inspection Area and Collective Throttle Controls	7 x 9	Screw	13
24	Door	Pilot Cyclic Controls	8 x 14	Screw	14
25	Door	Antitorque Controls and Lateral Magnetic Brake	6 x 8	Screw	10
26	Cover Assembly	Tail Rotor Driveshaft Forward Coupling	7 x 15	Hinge Dzus	1 2
27	Cover Assembly	Tail Rotor Driveshaft No. 2 and Hanger	15 x 80	Hinge Dzus	1 4
28	Door Assembly	Baggage Compartment (Right Side Only)	20 x 30	Hinge Latch	2 1
29	Cover Assembly	Tail Rotor Driveshafts No. 3 and No. 4	15 x 80	Hinge Dzus	1 4
30	Cover Assembly	42° Gearbox, Tail Rotor Driveshaft No. 3 and No.4 Couplings	35 x 39	Dzus	10
31	Door Assembly	Tail Rotor Driveshaft No. 4 and 90° Gearbox Mount	26 x 62	Dzus	5
32	Fairing Assembly	Tail Skid Attach	17 x 20	Screw	12

212-M-52-2-2

Figure 52-2. Lower fuselage and tailboom access doors, covers, and panels (sheet 2)

ITEM	NOMENCLATURE	ACCESSES	DIMENSIONS (INCHES)	RETAINER	
				TYPE	QTY
33	Fairing Assembly	Position Light, Antitorque Control Bellcrank, Support, and Tube	5 x 10	Screw	20
34	Door	Flight Control Tubes	17 x 20	Screw	18
35	Door	Radar Altimeter Antenna and Pilot/ Copilot Transmitter Flux Valves	17 x 20	Screw	18
36	Door	Flight Control Tubes	17 x 20	Screw	18

212-M-52-2-3

**Figure 52-2. Lower fuselage and tailboom access doors, covers, and panels (sheet 3)**

## CREW DOORS

### 52-4. CREW DOORS.

### 52-7. Disassembly.

### 52-5. CREW DOORS DESCRIPTION AND MAINTENANCE.

Two crew doors (figure 52-1) are hinged on the forward side and are equipped with a latch assembly, which may be operated from either side of door, to secure door in closed position. Each door incorporates three transparent acrylic windows; forward, upper and lower (adjustable) windows. In an emergency, doors may be jettisoned by pulling the EMERGENCY RELEASE handle mounted inside cabin forward of each door.

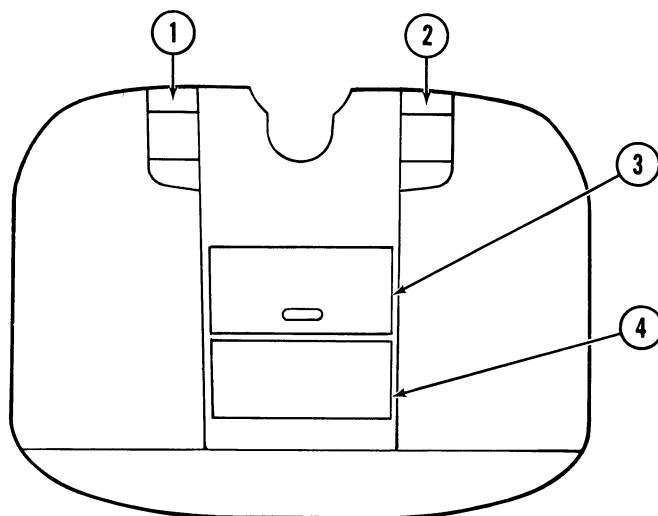
### 52-6. Removal.

Open door. Support door while pulling EMERGENCY RELEASE handle to retract hinge pins. Lift off door.

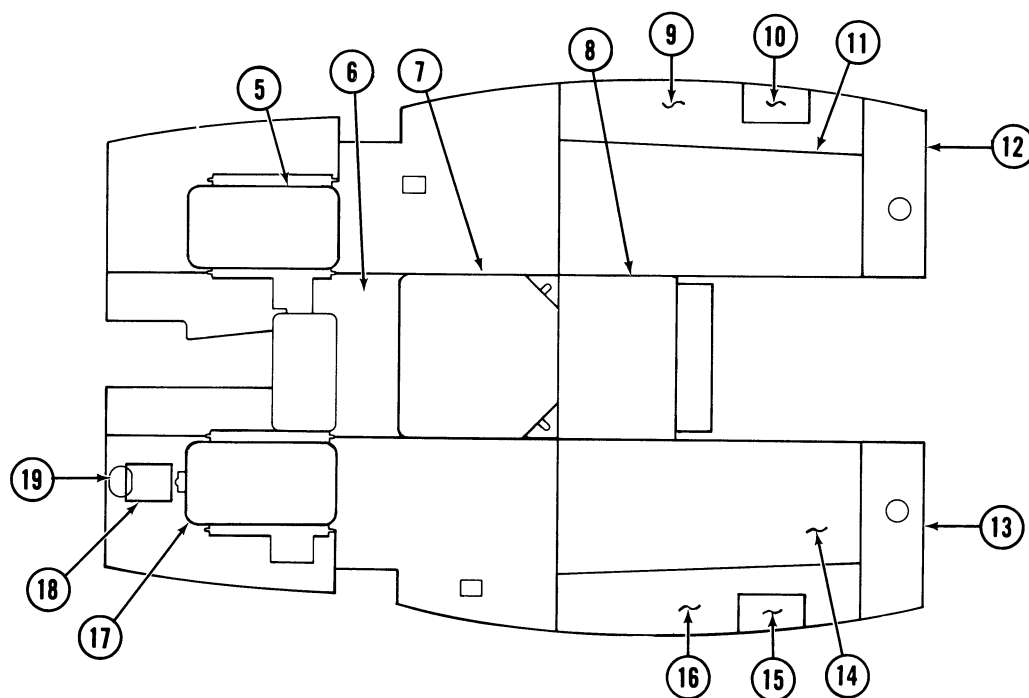
### NOTE

Disassemble door only to the extent necessary to effect repairs. For maintenance of crew door windows, refer to paragraph 52-74. Disassemble latch as follows:

1. Disconnect rod (9, figure 52-4) from latch arm by removing cotter pin and pin (16).
2. Remove access door (29) and plug button from inner face of door.
3. Disconnect rod (21) from bellcrank (20) by removing cotter pin and pin (22). Unscrew aft end of rod from rod end on latch assembly (13). Remove rod through aft side of door.
4. Remove screws (17) to detach latch plate from inner face of door. Hold latch shaft (15)



CABIN WALL  
VIEW LOOKING AFT (STA 129.00)



CABIN FLOOR - VIEW LOOKING DOWN

212-M-52-3-1

Figure 52-3. Interior cabin access doors, covers, and panels (sheet 1 of 2)

ITEM	NOMENCLATURE	ACCESSES	DIMENSIONS (INCHES)	RETAINER	
				TYPE	QTY
1	Door	No. 2 Engine Accessory Gearbox	13 x 14	Screw	12
2	Door	No. 1 Engine Accessory Gearbox	13 x 14	Screw	12
3	Door Assembly	Hydraulic Components, Lift Beam Link and Cargo Hook	15 x 28	Sleeve Bolt	37
4	Door Assembly	Cyclic Hydraulic Servos and Cargo Hook	11 x 28	Screw	38
5	Door Assembly	Pilot Cyclic Controls	17 x 29	Screw	6
6	Door Assembly	Collective Jackshaft	15 x 27	Screw	7
7	Door Assembly	Cyclic Mixing Bellcrank	29 x 29	Bolt	14
8	Door Assembly	Cyclic/Collective Controls	21 x 29	Bolt	6
9	Panel Assembly	General Inspection Area	14 x 54	Screw	104
10	Cover	Auxiliary Fuel Connections	8 x 13	Screw	17
11	Panel Assembly	Forward Fuel Cell	24 x 54	Screw	106
12	Panel Assembly	Fuel Cell Interconnect	12 x 32	Screw	30
13	Panel Assembly	Fuel Cell Interconnect	12 x 32	Screw	30
14	Panel Assembly	Forward Fuel Cell	24 x 54	Screw	106
15	Cover	Auxiliary Fuel Connection	8 x 13	Screw	17
16	Panel Assembly	General Inspection Area	14 x 54	Screw	104
17	Door Assembly	Copilot Cyclic Controls	17 x 29	Screw	6
18	Door	Copilot Cyclic Controls	7.7 x 9.7	Screw	6
19	Door	Copilot Cyclic Controls	3 x 4	Screw	4

212-M-52-3-2

Figure 52-3. Interior cabin access doors, covers, and panels (sheet 2)

while sliding latch assembly (13) off inboard end.

5. Remove outer handle (14) by removing screws attaching escutcheon to door and pulling handle off end of latch shaft (15).

6. Disconnect latch rod (25) from bellcrank (20) by detaching spring (23) and removing pin (24). Remove plug button from inner face of door and remove shouldered bolt (19) with nut and washers to detach bellcrank from support.

7. To remove either latch rod (9 or 25), remove spring pin (8), unscrew latch rod roller (2), and remove rod downward through door.

8. To remove latch striker from doorpost, disconnect ejection cable (19, [Figure 52-5](#)) from latch striker (1) by removing cotter pin and pin (3). Detach spring (2). Remove bolt with nut and washers, and pull striker out through backing plates.

9. Detach upper forward striker (1, [Figure 52-4](#)) from longeron by removing three screws. On upper aft striker (7) remove two screws from slotted holes, and use access hole on upper side of longeron to remove nut and washer from countersunk screw to detach striker and backing plates (5 and 6).

#### 52-8. Crew Doors — Inspection

1. Perform operational check for both crew doors.
2. Inspect visible portions of latch mechanism for secure installation, corrosion, and damage.
3. Inspect visible portions of jettison mechanism for secure installation, corrosion, and damage.
4. Inspect door structure and hinges for cracks and distortion.
5. Inspect crew door windows ([paragraph 52-76](#)).

6. Inspect door seals for security and deterioration.

#### 52-9. Crew Doors — Repair or Replacement

##### MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
<a href="#">C-004</a>	Grease

##### NOTE

Repair of crew door latch and jettison mechanism is restricted to replacement of unserviceable parts.

1. If replacing a door, or hinge halves (26, [Figure 52-4](#)) on door, peel shims under hinges, as required to obtain alignment. Spring assemblies, attaching hardware, and bumpers can be replaced if damaged or missing.
2. Replace any damaged and unserviceable parts of assemblies in latch installation.
3. Repair crew door structural damage. Refer to [BHT-MED-SRM-1](#) and to FAA Publication AC 43.13-1B, Aircraft Inspection and Repair Manual for structural maintenance.
4. Repair damaged door windows ([paragraph 52-76](#)).
5. Install new door seals as required ([paragraph 52-3](#)).
6. Deleted.
7. Lubricate moving parts of latch at installation with grease ([C-004](#)).



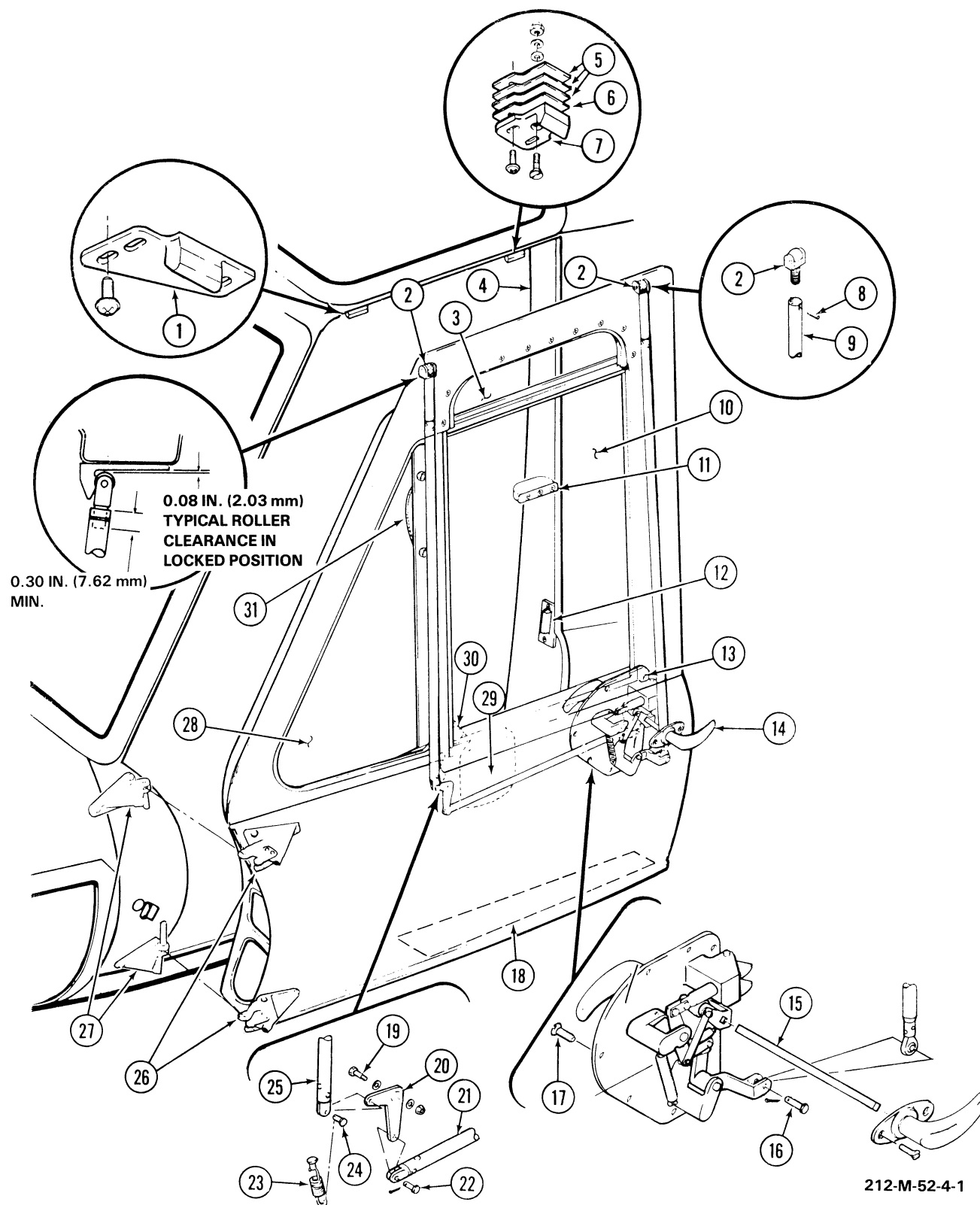


Figure 52-4. Crew door (sheet 1 of 2)

- |                          |                       |                       |
|--------------------------|-----------------------|-----------------------|
| 1. Upper Forward Striker | 12. Latch Striker     | 22. Pin               |
| 2. Latch Rod Roller      | 13. Latch Assembly    | 23. Spring            |
| 3. Upper Window          | 14. Outer Handle      | 24. Pin               |
| 4. Doorpost              | 15. Latch Shaft       | 25. Latch Rod         |
| 5. Backing Plates        | 16. Pin               | 26. Hinge Halves      |
| 6. Backing Plate         | 17. Screw             | 27. Hinge Halves      |
| 7. Upper Aft Striker     | 18. Lower Access Door | 28. Forward Window    |
| 8. Spring Pin            | 19. Shouldered Bolt   | 29. Inner Access Door |
| 9. Latch Rod             | 20. Bellcrank         | 30. Adjustable Stop   |
| 10. Sliding Window       | 21. Rod               | 31. Closing Handle    |
| 11. Lift Handle          |                       |                       |

212-M-52-4-2

**Figure 52-4. Crew door (sheet 2)**

#### 52-10. Assembly.

1. Position latch striker (1, figure 52-5) on door post and install bolt retaining hardware.
2. Install spring (2).
3. Position cable (9) end clevis over latch striker (1) and install and secure pin (3).
4. Position backing plates (5 and 6, figure 52-4) on door frame in position indexed at time of removal. Position upper aft striker (7) on backing plates and install retaining screws, washers, and nuts.
5. Position upper forward striker (1) on door frame and secure with screws.
6. Position latch assembly and inboard handle in position in door. Install screws (17).
7. Position shaft (15) with outer handle on door (into latch assembly) and secure handle with two screws.
8. Position rod (21) in door and thread into rod end in latch assembly.
9. Position bellcrank (20) in door and secure with bolt (19), washers, and nut.
10. Position rod (21) clevis on bellcrank (20). Secure with pin (22) and cotter pin.
11. Position rod (9) in door and thread into roller (2). Do not install spring pin (8) at this time.
12. Position rod (9) on latch assembly (13) and install pin (16). Secure with cotter pin.
13. Position rod (25) in door and thread into roller (2). Do not install spring pin at this time.
14. Position rod (25) on bellcrank (20). Secure with pin (24) and cotter pin.
15. Install spring (23).
16. Adjust latch assembly as follows:

a. Install door on helicopter (paragraph 52-11).

b. Close door and check position of strikers (1 and 7) and rollers (2).

c. Adjust rods (9 and 25) to obtain 0.08 in. (2.03 mm) clearance as illustrated. Ensure rods have 0.30 in. (7.62 mm) thread engagement as shown.

d. Adjust strikers (1 and 7) as required to hold door firmly in closed position.

e. Install spring pins (8) in rods (9 and 25) and roller (2) to secure rollers.

17. Install access door (29).

18. Perform operational check (paragraph 52-15).

#### **52-11. Installation.**

1. Position door on helicopter.

2. Pull jettison handle (30, figure 52-5) to retract hinge pins (17 and 23).

3. Align hinge halves and release jettison handle.

4. Close door slowly and observe action of latch assembly.

5. Slowly move handle (14, figure 52-4) to lock position. Observe engagement of two latch rollers (2) with upper strikers and for clearance of 0.08 in. (2.03 mm) above each roller when fully extended.

6. If required, adjust rollers to obtain proper clearance. Maintain minimum thread engagement of 0.30 in. (7.62 mm) as illustrated.

7. Adjust position of strikers (1, 7, and 12) as required.

8. When adjustment is satisfactory, install spring pin (8) to secure each roller.

9. Perform operational check (paragraph 52-15).

#### **52-12. CREW DOOR JETTISON MECHANISM.**

##### **52-13. Removal.**

1. Remove crew door (paragraph 52-6).

2. Remove cotter pin, washer, and pin (21, figure 52-5) to detach ejection handle cable (22) from plate (25). When required, detach two clamps (29) securing tube (28) to support angle and pull handle assembly up through grommet (27).

3. Detach swivel (20) from plate (25) by removing nut and washer. Pull swivel from end of cable (19). Keep nut and washer with swivel.

4. Remove two bolts (18) and washers to detach support (16) from structure. Pull hinge pins (17 and 23) free of hinge bushings, and remove assembled ejection mechanism from inboard side of nose structure.

5. Disassemble ejection mechanism as follows:

a. Remove cotter pins and two pins (14) to detach upper and lower hinge pins (17 and 23) from plate (25) and link (13).

b. Remove bolt (26) with nut, washers, and spacer (24) to separate plate and link from support (16).

6. Remove ejection cable as follows:

a. Disconnect aft end fork of cable (9) from latch striker (1) by removing cotter pin and pin (3).

b. Pull cable aft out of flex tube (7) leaving tube in place.

##### **52-14. Installation.**

1. Check ends of jettison cable flex tube for proper installation:

a. Aft end of flex tube (7, figure 52-5) should be positioned vertically at F.S. 68.96 in door post, secured between clamp (4) and

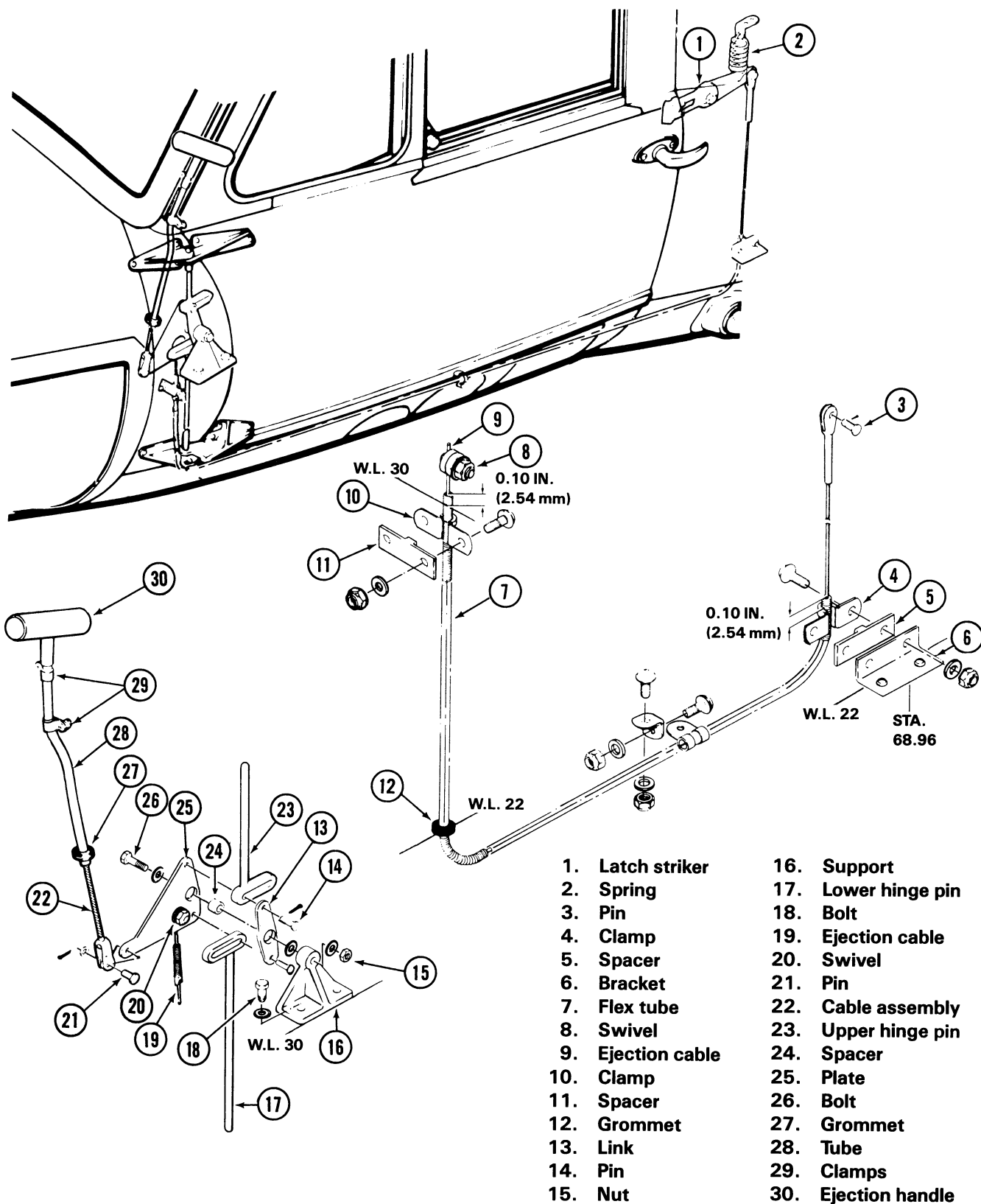


Figure 52-5. Crew door jettison mechanism

212-M-52-5

spacer (5) attached to bracket (6) on structure with two screws, washers, and nuts. End of tube should extend 0.10 in. (2.54 mm) above clamp.

**b.** Forward end of flex tube should pass up through grommet (12) in nose structure forward of door opening, and be secured between clamp (10) and spacer (11) attached to structure with two screws, washers, and nuts. End of tube should extend 0.10 in. (2.54 mm) above horizontal angle at W.L. 30.

**2.** Thread plain end of ejection cable (9) through flex tube (8) from aft end.

### NOTE

Forward end of cable will be attached during installation of jettison mechanism.

**3.** Attach cable fork terminal on aft end of latch striker (1) with pin (3) secured by cotter pin. Verify spring (2) is attached between striker and bracket in door post.

**4.** Install jettison mechanism as follows:

**a.** Insert spacer (24) through pivot holes of plate (25) and link (13).

**b.** Place standard steel washer on bolt (26), and insert bolt from plate side through spacer.

**c.** Place thin aluminum washer on bolt next to spacer, and insert bolt (26) through support (16).

**d.** Install nut (15) and aluminum washer on outboard end of bolt and torque 50 to 70 in.lbs. (5.65 to 7.91 Nm).

**e.** Position slotted ends of hinge pins (17 and 23) between plate (25) and link (13), align holes, and install pins (14) secured by cotter pins.

**f.** Position assembly in nose structure, with hinge pins inserted in hinge bushings and support (16) resting on horizontal structural member at W.L. 30.

**g.** Align support (16) to holes with plate nuts, and install two bolts (18) with aluminum washers. Torque bolts 20 to 25 in.lbs. (2.26 to 2.82 Nm).

**h.** Position handle (30) with tube (28) inserted through grommet (27) at W.L. 35.56. Align clamps (29) to mounting holes in angle and attach with two screws, washers, and nuts.

**i.** Connect fork terminal of cable (22) to forward end of plate (25) with pin (21), washer, and cotter pin.

**5.** Connect cable (9) with swivel (8) to hole with bushing in middle of plate (25). Adjust cable length to remove slack with hinge pins extended and latch striker (1) held down in latching position, and tighten nut on swivel to hold end of cable securely.

**6.** Perform operational check (paragraph 52-15).

### 52-15. Operational check.

**1.** Place door to closed and locked position.

**2.** Verify door is securely latched. The two upper and lower hinge pins (17 and 23, figure 52-5) should be extended to engage strikers (1 and 7, figure 52-4) at top of door opening with a clearance of 0.08 in. (2.03 mm) above top of each roller as illustrated. Latch (13) should fully engage latch striker (12).

**3.** Turn handle (14) clockwise to open position. Latch should disengage from striker and rollers should disengage to allow door to open freely.

**4.** Close door and turn handle (14) to horizontal position. Handle should operate smoothly and positively. Door should be held firmly against fuselage.

**5.** Check jettison mechanism as follow:

**a.** Close and lock door using handle (14).

**b.** Station a person inside and outside helicopter at door being checked. Pull EMERGENCY RELEASE handle. Hinge pins

(17 and 23, [Figure 52-5](#)) should retract smoothly and release hinges. Striker (1) should pivot upward to release rear door latch.

c. If necessary, push outward on door to separate door from fuselage.

d. Install door ([paragraph 52-11](#)).

## 52-15A. CREW DOOR HINGES

### 52-15B. Crew Door Hinges — Removal

#### MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
<a href="#">C-305</a>	Aliphatic Naphtha

1. Remove the crew door ([paragraph 52-6](#)).

#### NOTE

This procedure is applicable to the upper and lower hinge half assemblies. Procedure for the upper hinge half assembly is given; differences for the lower hinge half assembly are identified.

2. Carefully remove the sealant from around the upper fixed hinge half assembly (1, [Figure 52-5A](#)) and the upper movable hinge half assembly (2).

3. Remove screws (5), nuts (7), and washers (6).

4. Remove upper fixed hinge half assembly (1), upper movable hinge half assembly (2), and shim (17) from the crew door.

5. Carefully remove the remaining sealant with aliphatic naphtha ([C-305](#)).

### 52-15C. Crew Door Hinges — Inspection

1. Inspect the applicable fixed hinge half assembly (1 or 3, [Figure 52-5A](#)) for cracks, wear, and holes with signs of deformation.

2. Inspect the applicable movable hinge half assembly (2 or 4) for cracks, wear, and holes with signs of deformation.

3. Inspect the bushings (15 and 16) for excessive wear or play.

4. Inspect the bushings (14) for excessive wear.

5. Inspect the spring assemblies (11 and 13) for excessive wear to the striker blocks.

6. Replace the spring assemblies (11 or 13) if the rivets of the striker blocks are visible.

### 52-15D. Crew Door Hinges — Installation

#### MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
<a href="#">C-305</a>	Aliphatic Naphtha
<a href="#">C-308</a>	Sealant

#### NOTE

This procedure is applicable to the upper and lower hinge half assemblies. Procedure for the upper hinge half assembly is given; differences for the lower hinge half assembly are identified.

New hinge half assemblies can be supplied without the three mounting holes.

1. Install upper fixed hinge half assembly (1, [Figure 52-5A](#)) and upper movable hinge half assembly (2) with shims (17), screws (5), nuts (7), and washers (6).

2. Temporarily install the crew door ([paragraph 52-11](#)) to make sure the fit is correct.

3. Remove the crew door ([paragraph 52-6](#)).

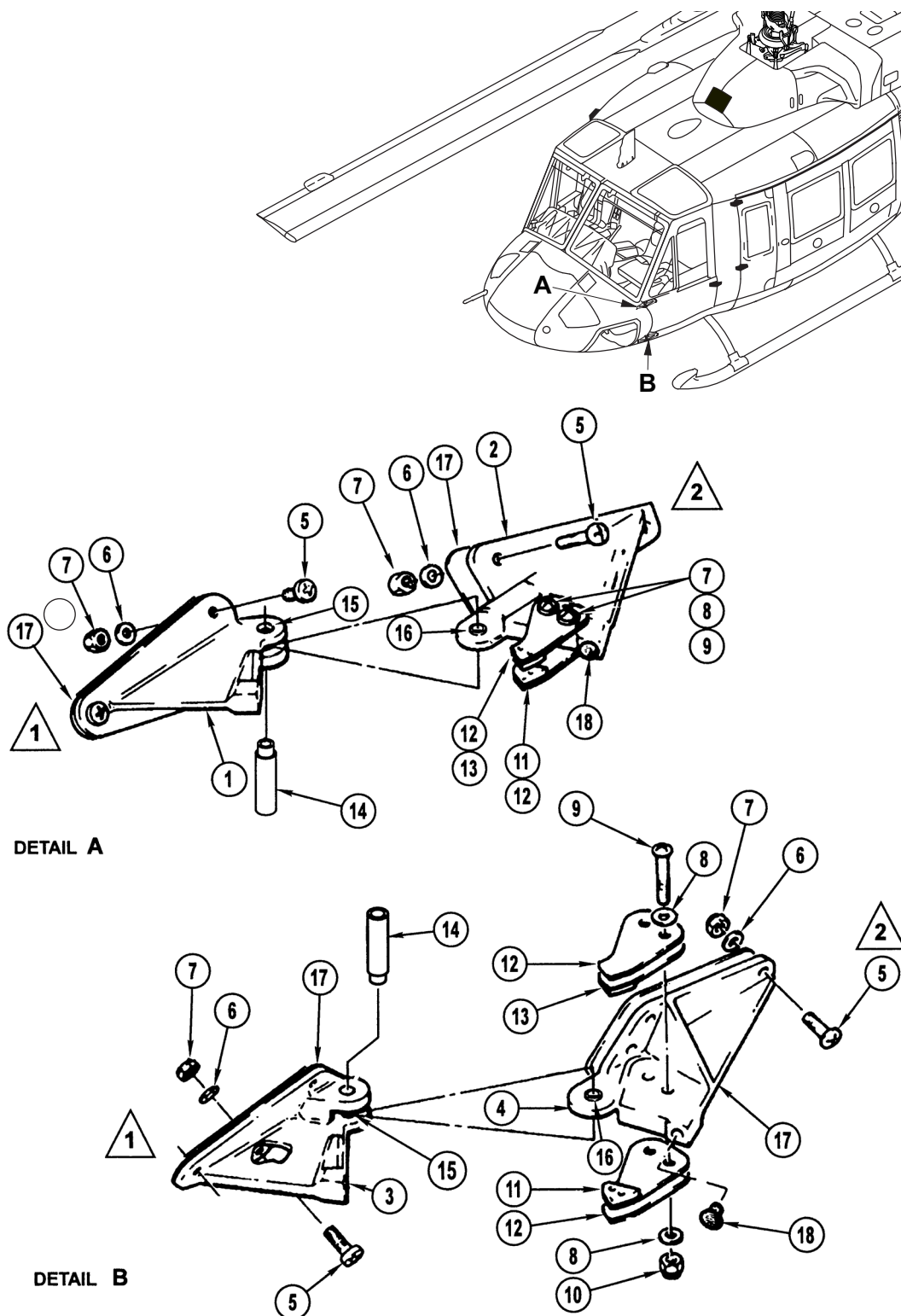


Figure 52-5A. Crew Door Hinges (Sheet 1 of 2)

212\_MM\_52\_0006a

1. Hinge half assembly, upper fixed
2. Hinge half assembly, upper movable
3. Hinge half assembly, lower fixed
4. Hinge half assembly, lower movable
5. Screw
6. Washer
7. Nut
8. Washer
9. Screw
10. Nut
11. Spring assembly, lower
12. Spring
13. Spring assembly, upper
14. Bushing
15. Bushing
16. Bushing
17. Shim
18. Bumper

#### NOTES

- 1 If not previously accomplished, match drill holes to 0.190 to 0.196 inch (4.826 to 4.978 mm) in diameter.
- 2 If not previously accomplished, match drill holes to 0.190 to 0.218 inch (4.826 to 5.537 mm) in diameter.

Figure 52-5A. Crew Door Hinges (Sheet 2 of 2))

412\_MM\_52\_0004+



4. If necessary, adjust the thickness of the shims (17) to get the correct fit.
5. Apply sealant (C-308) around the edge of the upper fixed hinge half assembly (1) and the upper movable hinge half assembly (2).
6. Clean the excess sealant with aliphatic naphtha (C-305).
7. Install the crew door (paragraph 52-11).

#### **52-15E. Crew Door Hinges — Repair**

##### **MATERIALS REQUIRED**

Refer to BHT-ALL-SPM for specifications.

NUMBER	NOMENCLATURE
C-204	Epoxy Polyamide Primer
C-321	Adhesive

1. Replace the bushings (14 and 15, Figure 52-5A) as follows:

- a. Hold the legs that contains the bushing (14 or 15) and push them out.
- b. Make sure that the holes are free of damage.
- c. Measure the holes and make sure that the diameters are from 0.312 to 0.313 inch (7.925 to 7.950 mm).

##### **NOTE**

Make sure that the flanges of the bushings are in the hinge assembly slot.

- d. Apply epoxy polyamide primer (C-204) to the holes.

- e. Hold the legs of the fixed hinge half assemblies (1 and 3) and push the new bushings (15) into position.

##### **NOTE**

Install the bushings to be flush with the inner face of the fixed hinge half assemblies.

- f. Apply epoxy polyamide primer (C-204) to the holes.

- g. Hold the legs of the fixed hinge half assemblies (1 and 3) and push the new bushings (14) into position.

- h. Ream bushings (14) to have a diameter from 0.1880 to 0.1885 inch (4.775 to 4.788 mm).

2. Replace bushings (16) as follows:

- a. Hold the legs that contain the bushings (16) and push them out.

- b. Make sure that the holes are free of damage.

- c. Measure the holes and make sure that the diameters are from 0.312 to 0.313 inch (7.925 to 7.950 mm).

##### **NOTE**

Make sure that the ends of the bushings are flush or below the surface of the movable hinge half assembly.

- d. Apply epoxy polyamide primer (C-204) to the holes.

- e. Ream bushings (16) to have a diameter from 0.1880 to 0.1885 inch (4.775 to 4.788 mm).

- f. If removed, install a new bumper (18) with adhesive (C-321).



## PASSENGER/CARGO AREA ACCESS DOORS

### 52-16. PASSENGER/CARGO AREA ACCESS DOORS.

The passenger/cargo area access doors consists of the sliding passenger/cargo door and the hinged panel door located on either side of the helicopter aft of the crew doors.

### 52-17. PASSENGER/CARGO DOOR.

The passenger/cargo doors operate on rollers and tracks. These doors provide access to the passenger/cargo area aft of the crew stations. Each door has two push-out windows for emergency exit.

### 52-18. Removal.

1. Unlatch cargo door (32 or 39, figure 52-6).
2. Retract open position stop and remove screw (17), rubber stop (16), from aft end of lower door track. Remove inside handle and latch guards.
3. Slide cargo door (32) aft out of tracks.

### 52-19. Inspection.

1. Perform an operational check for both passenger/cargo doors (paragraph 52-22).
2. Inspect latch for binding, wear, damage, and secure installation.
3. Inspect door windows (paragraph 52-80 or 52-84).
4. Inspect door structure and hinges for cracks and/or distortion.
5. Inspect door seals for secure bonding and deterioration.
6. Inspect door lock caution switch (Chapter 96).

### 52-20. Repair or replacement.

1. Replace unserviceable parts in latch mechanism (paragraph 52-23).
2. Repair door structural damage. Refer to BHT-MED-SRM-1 and to FAA Publication AC 43.13-1A, Aircraft Inspection and Repair Manual for structural maintenance.
3. Repair minor damage to windows (paragraph 52-80 or 52-86).
4. Repair or replace damaged or unserviceable seals (paragraph 52-3).

### 52-21. Installation.



205-032-669-173 AND -174 PASSENGER/CARGO DOORS MAY BE USED AS A REPLACEMENT FOR 205-032-669-009 AND -010 RESPECTIVELY. OLD PASSENGERS/CARGO DOOR ASSEMBLIES SHALL BE REPLACED IN PAIRS. A MIXING (UNSYMMETRICAL ARRANGEMENT) OF DOORS PRIOR TO -173, AND DOORS -173, -174, AND SUB. IS NOT AUTHORIZED. THE 205-032-669-173 AND -174 PASSENGER/CARGO DOORS DO NOT REQUIRE 212-030-629-101 AND -102 DOOR DEFLECTORS USED ON EMERGENCY FLOAT KIT.

1. If new door is being installed, install all attaching hardware.
2. Position cargo door (32 or 39, figure 52-6) with forward edge in line with aft end of door tracks.

3. Start rollers and slider through cut-outs at aft ends of tracks. Push cargo door (32) forward.

4. Install rubber stop (16) with screw (17) at aft end of lower track on fuselage. Install inside handle and latch guards, if not previously accomplished.

5. Perform operational check (paragraph 52-22).

#### 52-22. Operational check and adjustment.

##### MATERIALS REQUIRED

NUMBER	NOMENCLATURE
C-405	Lockwire

1. Place door to full closed and latched position. Verify upper edge of door is parallel to top of cabin door frame.

2. Use adjusting screw (8, figure 52-7) to adjust so upper and lower cams (9) will bottom simultaneously. Secure screws after adjustment has been obtained using lockwire (C-405).

3. If door is out of alignment, loosen screws attaching roller support and slider (or roller) support on rear edge of door. Adjust slider support (lowest of two supports on rear edge parallel to door frame). Tighten slider support screws.

4. Adjust roller support (upper of two on rear edge) so roller is fully engaged in track. Tighten attaching screws.

5. Operate door through full travel while verifying all rollers on upper edge are fully engaged in track at all positions. Adjust roller supports as required.

6. With door fully closed and latched, check that lower door track is engaged not less than 0.25 in. (6.35 mm) in cabin door channel without restricting door travel through full

range from closed to open positions. Tighten door track attaching screws after adjustment.

7. Adjust lock caution light switch (Chapter 96).

#### 52-23. PASSENGER/CARGO DOOR LATCHES.

##### 52-24. Removal.

##### NOTE

The following instructions are for removing upper door latch. Procedures for removing lower door latch are the same.

Remove latch parts only to the extent necessary to accomplish required repairs.

Repair of latch components is restricted to replacement of unserviceable parts.

1. Unhook tension spring (6, figure 52-7) from latch (1) and from hanger (2) on door.

2. Remove cotter pin, washer, and guide pin from actuating arm (4) and door latch.

3. Remove cotter pin, washer, and guide from door latch and door latch support (7).

4. Remove latch.

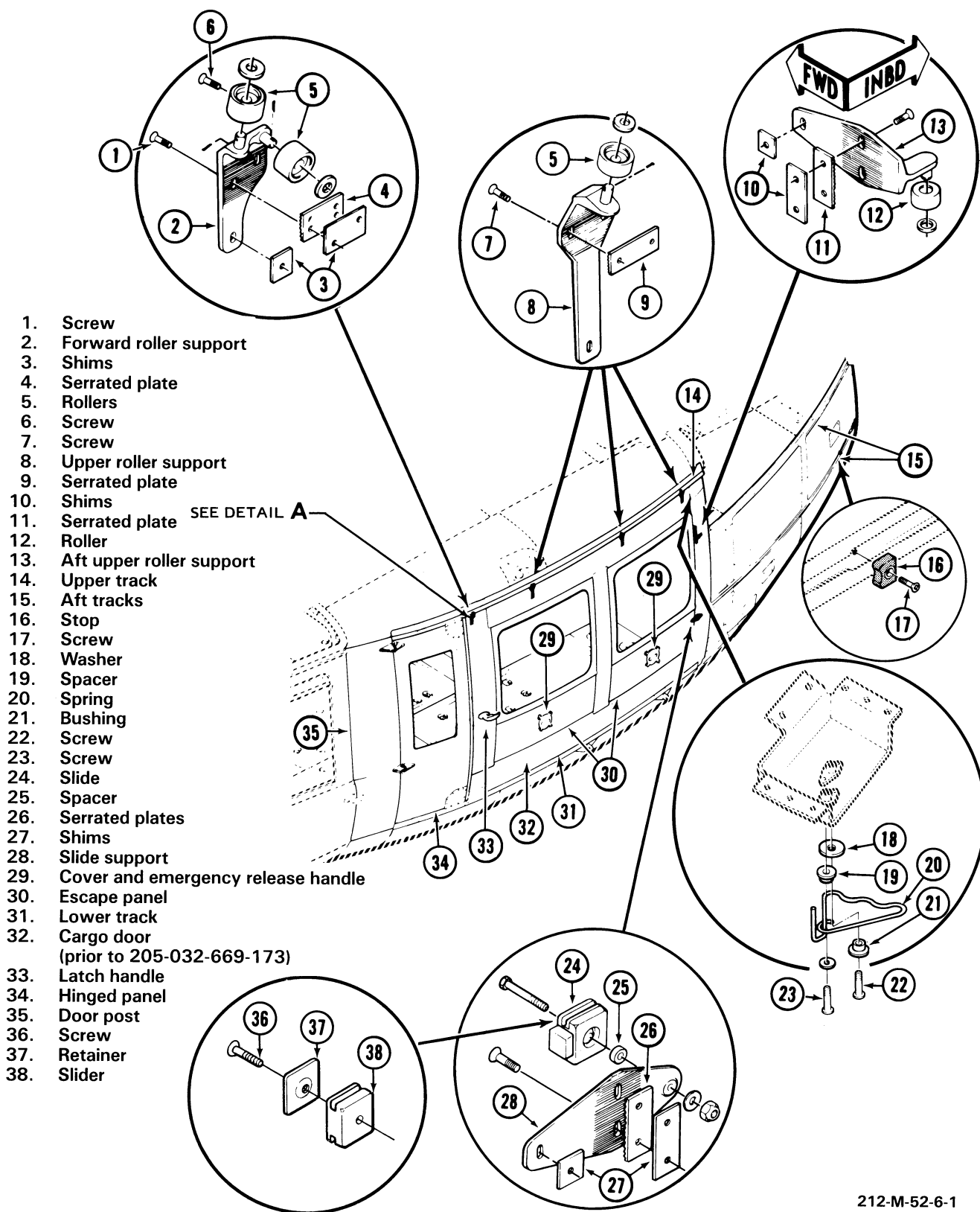
##### 52-25. Installation.

##### NOTE

The following instructions are for installing the upper door latch. Procedure for installing the lower door latch is the same.

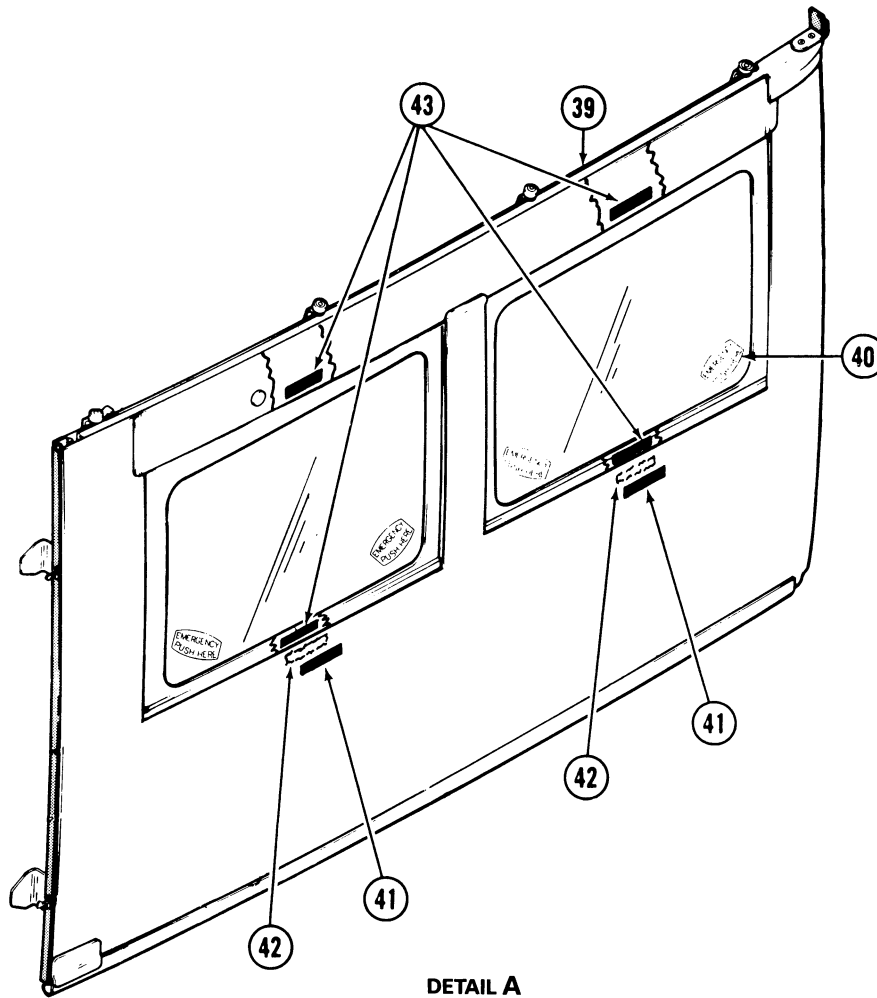
1. Insert door latch (1, figure 52-7) in door latch support (7).

2. Align door latch to door latch support and insert guide pin. Secure guide pin with washer and cotter pin.



212-M-52-6-1

Figure 52-6. Passenger/cargo door (sheet 1 of 2)



- 39. Cargo door (205-032-669-173 and subsequent)
- 40. Decal — emergency push here
- 41. Decal — Emergency push (outside)
- 42. Sign — emergency push (inside)
- 43. Decal — emergency exit

212-M-52-6-2

Figure 52-6. Passenger/cargo door (sheet 2)

3. Align actuating arm (4) to door latch and insert guide pin. Guide pin with washer and cotter pin.

4. Connect tension spring (6) to door latch and to hanger (2) on door structure.

### 52-26. EMERGENCY ESCAPE PANEL.

Two emergency escape panels (30, figure 52-6) are installed in each passenger/cargo door. The escape panel can be jettisoned from either inside or outside the helicopter.

### 52-27. Removal.

1. Remove cover (29, figure 52-6) over inside or outside emergency release handle.

2. Support panel from the outside and turn release handle. Push panel outward from bottom and lower until upper guide pins are free.

### 52-28. Installation.

#### MATERIALS REQUIRED

NUMBER	NOMENCLATURE
C-414	Shear Wire

1. Ensure release handle is positioned so bottom and side pins are retracted.

2. Raise panel to position from outside of passenger/cargo door. Engage upper guide pins.

3. Turn release handle to engage bottom and side pins. Observe latch pin engagement through inspection holes.

4. Secure release handle, using shear wire (C-414) to top screw securing D handle cover.

5. Install cover over release handle.

### 52-29. Operational check.

#### MATERIALS REQUIRED

NUMBER	NOMENCLATURE
C-414	Shear Wire

1. Close and attach passenger/cargo door.

2. From inside cabin area, remove lower three screws and spacers securing D handle cover. Leave top screw and spacer securing shear wire in place. Slip emergency release handle cover from the fourth screw, figure 52-8, detail A.

3. Maintain a secure grip on emergency release handle and rotate open. Continue to support escape panel while pressing gently out and down on bottom of panel. As bottom of escape panel clears door frame, guide pins located on top edge of escape panel should slide free of door frame releasing emergency escape panel.

4. Verify following emergency escape system characteristics:

a. Reasonable torque on emergency release handle breaks shear wire holding handle and rotates handle to open position.

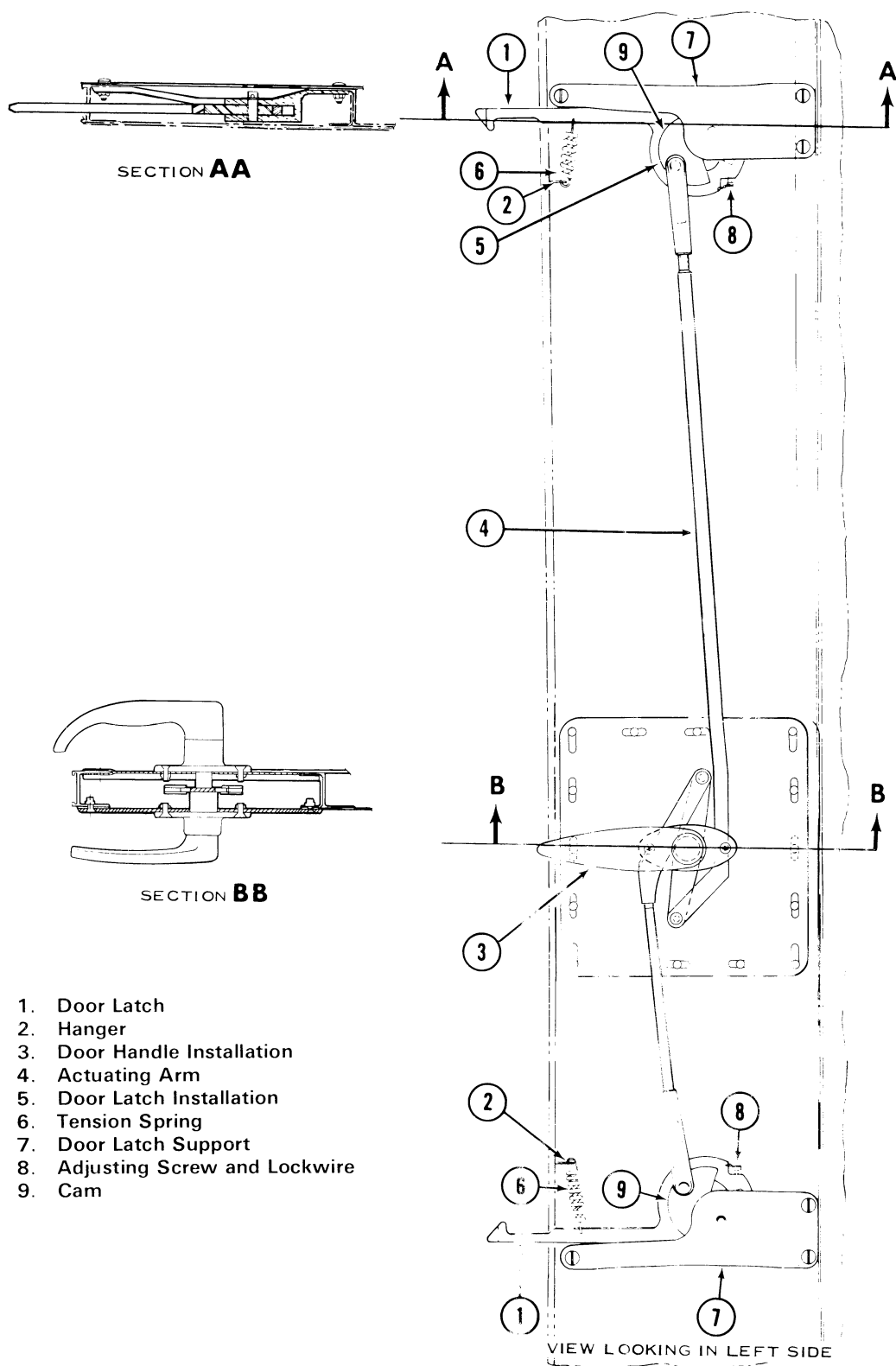
b. Escape panel slides easily from door frame.

c. Edges of escape panel and door frame are free from corrosion and contamination.

d. Lock pin holes in door frame free from cracks and within tolerance (detail C).

e. Lock pins are smooth, free from corrosion or contamination. Minor pits less than 0.03 in. (0.762 mm) in diameter not affecting smooth pin withdrawal from door frame are acceptable.

f. Lock pins are properly adjusted to dimensions (detail B), when emergency release handle is rotated to full open position.



212-M-52-7

Figure 52-7. Passenger/cargo door latch (typical)



5. Install emergency escape panel in door as follows:

a. Rotate emergency release handle to full open position and verify all lock pins retracted.

b. Align guide pins on top edge of emergency escape panel with corresponding holes in door frame and insert escape panel into door cavity. Rotate emergency release handle to closed position (light pressure on outside of escape panel at pin locations may be necessary to compress seals and allow lock pins to slide easily in place). Visually inspect through inspection holes, for a minimum of 0.50 in. (12.7 mm) lock pin engagement in door frame.

c. With pin (detail B) in extended (locked) position, paint tip white to within 0.03 in. (0.762 mm) of door structure.

d. Secure emergency release handle in closed position with shear wire (C-414), detail A. Slip emergency release handle cover under screwhead and secure with three screws and spacers.

#### 52-30. ANNUAL FUNCTIONAL INSPECTION FOR CREW AND PASSENGER/CARGO DOORS.

##### MATERIALS REQUIRED

NUMBER	NOMENCLATURE
C-100	Chemical Film Material
C-204	Primer
C-208	Epoxy/Zinc Coating
C-305	Aliphatic Naphtha
C-306	Toluene
C-307	Adhesive
C-309	Methyl-Ethyl-Ketone (MEK)
C-311	Adhesive
C-318	Cleaning Compound

##### MATERIALS REQUIRED (CONT)

NUMBER	NOMENCLATURE
C-344	Cleaner
C-406	Aluminum Oxide Cloth
C-407	Abrasive Pad
C-423	Abrasive Cloth or Paper

1. Perform emergency ejection check on crew doors (paragraph 52-15).

2. Perform emergency escape panel operational check (paragraph 52-29).

3. Remove inside emergency release handle and skin (30 screws around perimeter). Inspect as follows:

a. Check for contamination and corrosion. If any exists proceed to step 4.

b. Check for damaged seal. If damage exists, refer to step 7.

c. Check for damaged locking pin hole damage. If damage exists, refer to step 8.

d. If none of the above conditions, install skin, handle, and emergency release panel.

4. Remove contamination as follows:

a. Scrub affected area using clean, lint-free cloths and cleaning compound (C-318) until free of contaminant.

b. Thoroughly rinse with water.

c. Dry with clean, lint-free cloths or filtered, compressed air.

d. Inspect surface for corrosion and/or surface damage or seal deterioration. If none exists, return to service. If any of these conditions exists, proceed to next step.

5. Remove minor corrosion and treat area as follows:

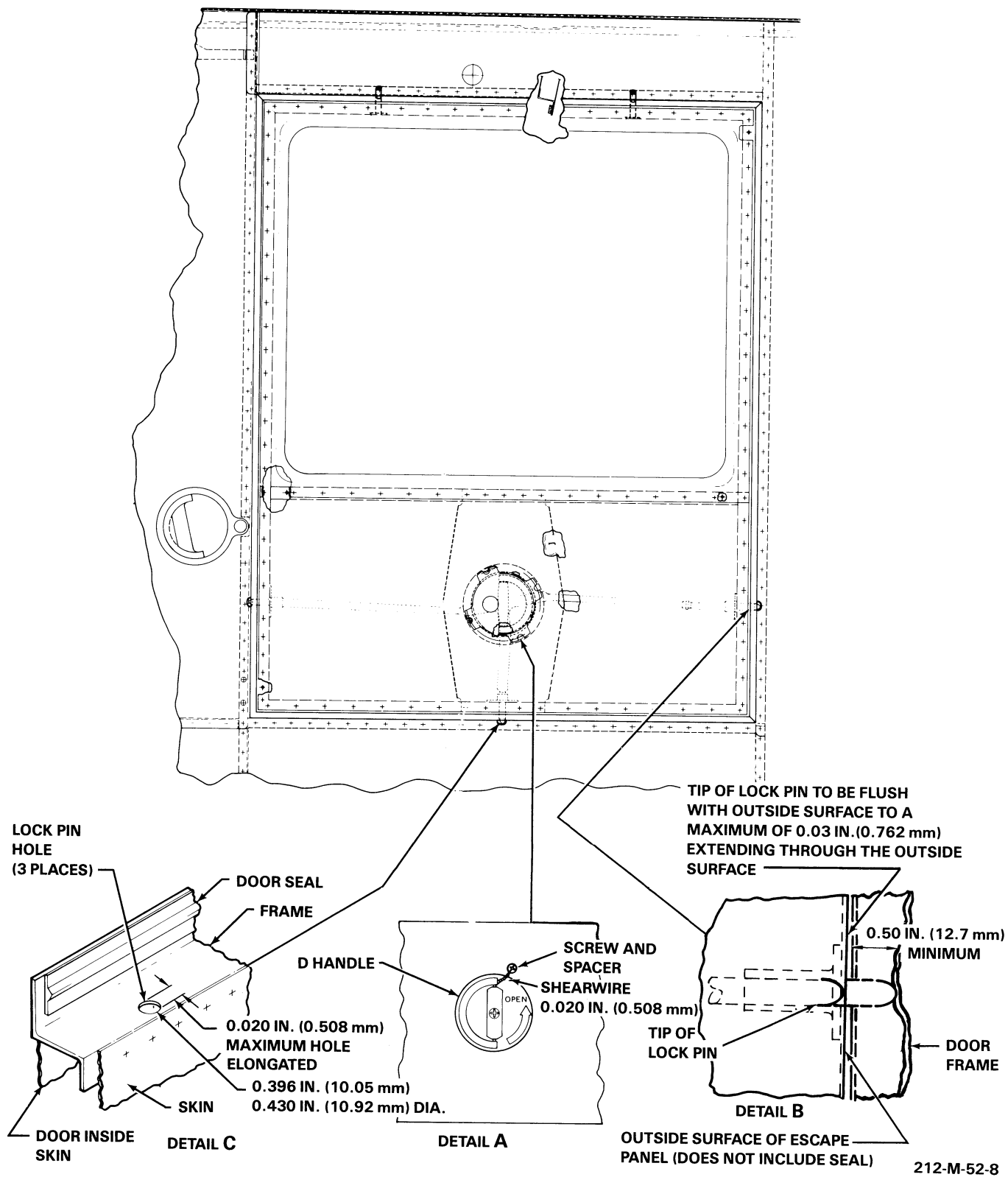


Figure 52-8. Emergency escape panel

**NOTE**

Corrosion pits shall be no larger than 0.060 in. (1.524 mm) in major surface dimension and 0.020 in. (0.51 mm) in depth. Frequency shall not exceed fourteen (14) per sq. in. Corrosion pits exceeding limits shall be reworked in accordance with step 6.

- a. Clean surface (step 4).
  - b. Brush corrosion pits with cleaner (C-344). Allow solution to remain on surface one to three minutes.
  - c. Thoroughly rinse surface.
  - d. Dry with clean, lint-free cloths or filtered, compressed air.
  - e. Apply chemical film material (C-100) liberally to surface with natural fiber brush (do not use nylon). Allow to remain on surface 30 seconds to one minute.
  - f. Thoroughly rinse with water. The surface should be free from any powdery or loose film areas, scratches, flaws, and defects. The rinse water will not collect into droplets within 25 seconds if surface is satisfactory. If surface is not satisfactory, repeat steps d., e., and f.
  - g. Dry thoroughly with clean, dry cloths or with filtered, compressed air.
  - h. If no seal is to be applied to surface, apply epoxy/zinc coating (C-208). If seal is required, mask area where seal is to be attached and apply epoxy/zinc coating (C-208) to exposed surface.
6. Rework corrosion pits which exceed limitations outlined in step 5. as follows:



NOT MORE THAN 0.005 IN. (0.127 MM) OF METAL SHALL BE REMOVED.

a. Abrade corrosion pits with aluminum oxide cloth (C-406) or abrasive pad (C-407) and MEK (C-309) in any sequence to reduce pit size to acceptable limits.

b. After corrosion has been removed repeat step 5.

7. Replace seat as follows:

a. Thoroughly clean surface on door/panel where seal is to be attached with toluene (C-306) and clean, lint-free cloths.

b. Abrade area of attachment on door/panel and attaching surface of seal with 80 grit abrasive cloth or paper (C-423).

c. Apply adhesive (C-307) with brush to abraded areas.

d. Starting at one end, roll seal on door/panel surface, eliminating all air bubbles to ensure good bond. Apply pressure until cured (approximately 12 hours at 75°F (23.9°C)).

8. Repair lock pin hole as follows:

a. Drill cracked or elongated lock pin hole 0.654 to 0.658 in., countersink 100° degrees and deburr.

b. Make a radius block to dimensions shown in figure 52-9.

c. Sand top surface of radius block and inside surface of door frame extrusion with 400 grit abrasive cloth or paper (C-423). Clean surfaces with aliphatic naphtha (C-305) and clean, lint-free cloth. Wipe naphtha from parts before it can evaporate.

d. Mix adhesive (C-311) per manufacturers instruction and coat faying surfaces and rivnut seat. Ensure there are no trapped air bubbles in the adhesive.

e. Slide radius block into place on inside surface of door frame extrusion through lock pin inspection hole (a proper hook made from lockwire will help prevent dropping radius block during this operation).

f. Insert rivnut through door frame extrusion and radius block and pull as shown in figure 52-9.

g. Drill threaded section out of rivnut using X drill (0.397 in.).

h. Apply primer (C-204) to radius block and bare metal.

### 52-31. ADJUSTMENT OF EMERGENCY ESCAPE PANEL LATCH SYSTEM.

#### MATERIALS REQUIRED

NUMBER	NOMENCLATURE
C-405	Lockwire

1. With latch in the unlocked position, lock pins (3, figure 52-10) shall be flush with outside surface to a maximum of 0.03 in. (0.762 mm).

2. If latch pins (3) are out of adjustment, remove inside D ring handle, 30 screws, and inner skin of emergency exit panel.

3. Remove lockwire, loosen locknuts (2) on rod ends and adjust lock pin (3), flush with outside surface to a maximum of 0.03 in. (0.762 mm) protruding. Tighten locknut (2) and secure with lockwire (C-405).

4. Install inner skin, 30 screws, and D ring handle.

### 52-32. CARGO HINGED PANELS.

The hinged panel (located forward of sliding door) (figure 52-11) provides a wider opening for cargo loading.

### 52-33. Removal.

1. Open sliding passenger/cargo door.
2. Operate latch handle of hinged panel door to release pins from upper and lower channels of door opening. Swing door open.

3. Disengage positioning spring (2, figure 52-11) from stud at top of opening.

4. Remove quick-release pins (1) from hinges (4). Remove door panel.

5. Remove unserviceable part in latching mechanism as follows:

a. Remove screws (6) and remove cover (5).

b. Remove screws (23) and remove cover (22).

c. Remove eight screws and three nuts (10) with washers to detach escutcheon (11). Remove escutcheon and handle (13) as an assembly.

d. Remove cotter pin and pin (14) to detach tube (9) from spindle assembly (12). Pull tube inboard until pin (7) is free of guide in panel. Remove pin from tube and remove tube through access opening at top of panel.

e. Remove cotter pin and pin (14) to detach tube (15) from spindle assembly (12). Pull tube inboard until pin (16) is free of guide in panel. Remove pin from tube and remove tube through access opening at top of panel.

f. To remove striker mechanism from top or bottom of panel, remove screw (17), washer, and nut. Remove striker guide (18), shim (19), plate (20), and striker (21).

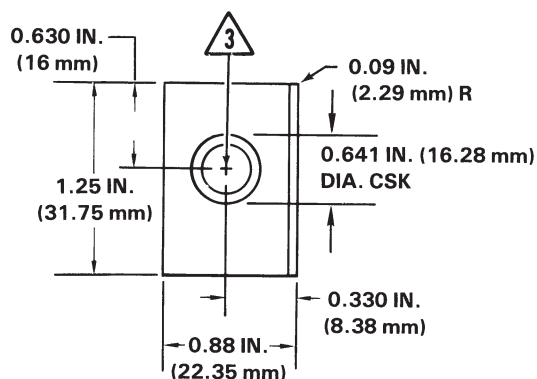
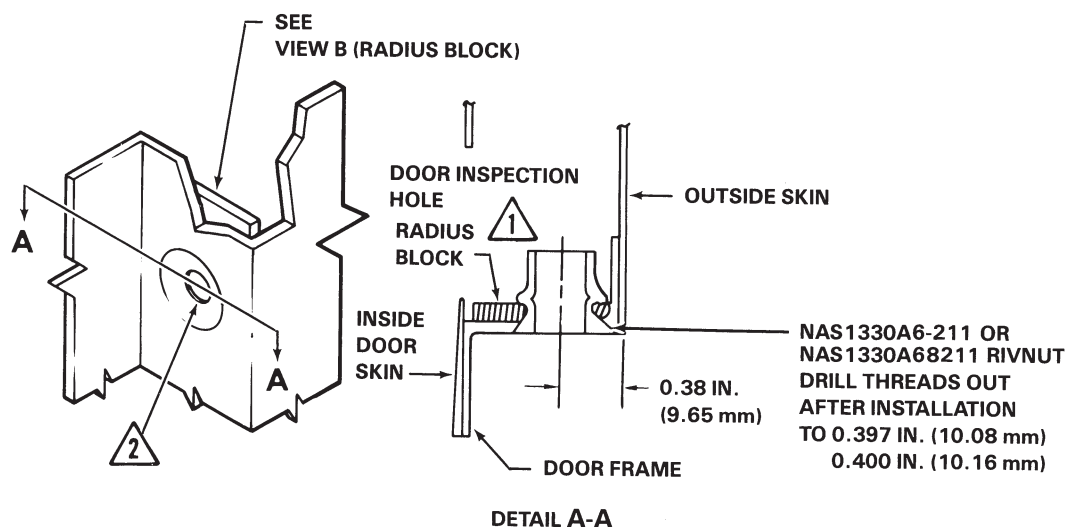
### 52-34. Repair or replacement.

1. Replace unserviceable parts in latching mechanism (paragraph 52-35).

2. Repair door structural damage. Refer to BHT-MED-SRM-1 and to FAA Publication AC 43.13-1A, Aircraft Inspection and Repair manual for structural maintenance.

3. Repair or replace damaged window (paragraph 52-88).

4. Repair or replace damaged seal(s) (paragraph 52-3).

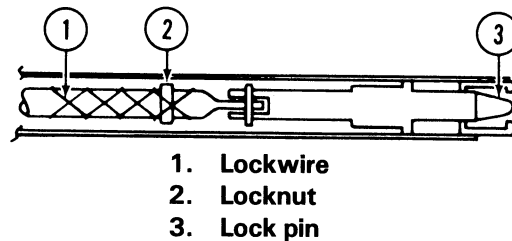


#### NOTES

- 1 MATERIAL 2024-T3 QQ-250/4 TEM T3 0.100 INCH (2.54 mm) THICKNESS.
- 2 EXISTING HOLE CSK TO 0.770 INCH (19.56 mm) DIAMETER.
- 3 DRILL 0.486 TO 0.490 INCH (12.34 TO 12.45 mm) HOLE CSK TO 0.641 INCH (16.28 mm) DIAMETER.

212\_MM\_52\_0009

Figure 52-9. Lock Pin Holes Repair



212-M-52-10

**Figure 52-10. Emergency escape panel latch**

### 52-35. Installation.

#### 1. Assemble latching mechanism as follows:

**a.** Position striker guide (18, figure 52-11) on outside surface of panel and shim (19), plate (20), and striker (21) on inside surface of panel. Install two screws (17) with washers and nuts.

**b.** Insert tube (9) through access opening at top of hinged panel door. Install nut (8) and pin (7) on tube. Insert pin through guide at top of panel. Connect tube (9) to spindle assembly (12) using pin (14) and cotter pin.

**c.** Insert tube (15) through access opening at bottom of hinged panel door. Install pin (16) on tube. Insert pin through guide at bottom of panel. Attach tube (15) to spindle assembly (12) using pin (14) and cotter pin.

**d.** Install covers (5 and 22) after completion of operational check and adjustment.

**2.** Align hinged panel door on hinges and install pins.

**3.** Swing hinged panel door partly closed and engage the slotted positioning spring (2) on stud at top of door opening.

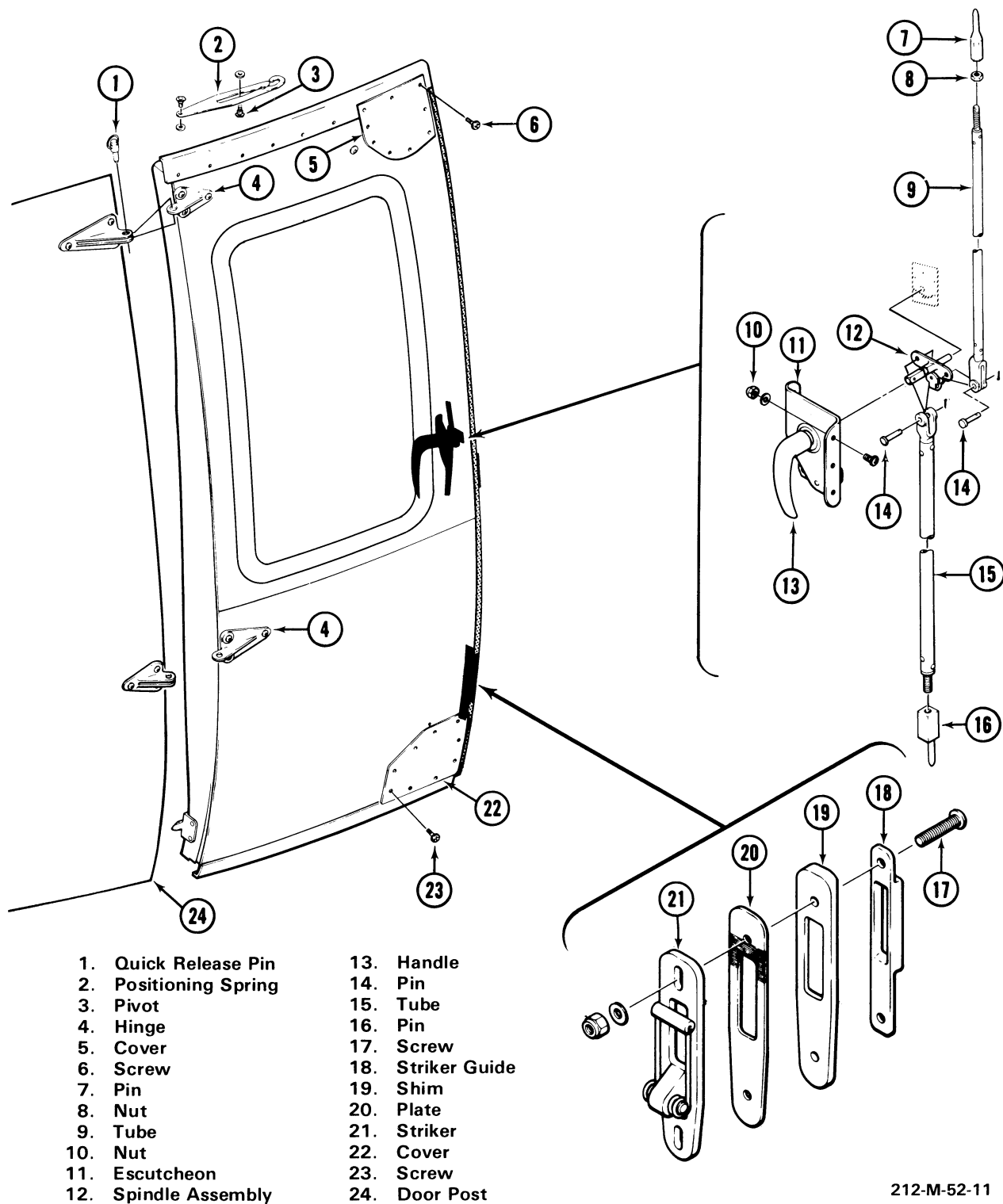
**4.** Close hinged panel door and operate handle to extend latch pins into holes in upper and lower structural channels of frame.

**5.** Close sliding door to check for proper latching.

**6.** Adjust hinged panel door as follows:

**a.** With hinged panel door closed and latched, verify upper and lower pins (7 and 16) are securely engaged in channels of opening. Verify pin on lower inside of panel is engaged in door post.

**b.** Operate handle (13) to open panel. Verify upper and lower pins retract to clear top and bottom of door opening.



212-M-52-11

Figure 52-11. Cargo hinged panel door

c. If necessary to adjust either pin (7 or 16), remove cover (5 or 22) for access. Loosen nut (8), adjust pins to obtain secure engagement and proper release. Tighten nut (8) against pin (7). Install covers after adjustment.

d. Check action of positioning spring (2) on pivot (3) as panel is opened. Detent in spring slot should catch and hold panel at approximately 90° to fuselage. Hook of spring should catch when panel is forced beyond detent.

e. With panel closed and latched, slowly close passenger/cargo door. Check for proper engagement of latches on passenger/cargo door with striker (21). When adjustment is necessary, remove cover over striker. Adjust striker position by means of slotted mounting holes, or adjust thickness of laminated shim (19). Reinstall cover with mounting screws, washers, and nuts when adjustment is complete.

#### **52-36. BAGGAGE COMPARTMENT DOOR.**

The baggage compartment door is located on the forward right side of the tail boom. The door is hinged on the forward end and has a latch and lock on the aft end. The door is a honeycomb panel with both faces of aluminum alloy.

#### **52-37. Removal.**

1. Open baggage compartment door.
2. Disconnect chain from baggage compartment door.
3. Remove nuts, washers, and bolts from hinges. Remove baggage compartment door.

#### **52-38. Inspection.**

1. Inspect chain for security and condition.
2. Inspect hinge for cracks and distortion.
3. Inspect latch for proper operation and security.
4. Inspect switch for operation of baggage compartment light and caution panel segment DOOR LOCK when baggage compartment door is opened.

#### **52-39. Repair.**

1. Replace unserviceable parts in latch mechanism.
2. Repair door structural damage. Refer to BHT-MED-SRM-1 and to FAA Publication AC 43.13-1A, Aircraft Inspection and Repair Manual for repair of honeycomb panels.
3. Replace damaged seals (paragraph 52-3).

#### **52-40. Installation.**

1. Position baggage door over hinges on tailboom.
2. Install bolts, washers, and nuts. Install cotter pins.
3. Connect chain to door.
4. Check operation of door lock caution switch (Chapter 96).



## ACCESS COVERS AND DOORS

### 52-41. ACCESS COVERS AND DOORS.

The following paragraphs provide maintenance information for the hinged upper and lower nose doors, electrical equipment access door, miscellaneous access covers and doors, and tail rotor driveshaft access covers.

### 52-42. NOSE ACCESS DOORS.

Two hinged doors give access to nose compartment. The lower door is of aluminum alloy construction and swings down after removal of attaching studs, and raising upper door. The upper door is of fiberglass faced honeycomb construction and swings up after release of manually activated latches.

### 52-43. Removal.

1. Remove attaching stud from lower door and open door. Disconnect hinge assemblies from fittings on structure and remove door assembly.
2. Remove upper door by removing screws which attach top of door to hinges and releasing latches.

### 52-44. Inspection.

1. Inspect hinges for cracks and distortion.
2. Inspect latches for operation and security.
3. Inspect door for structural damage.
4. Inspect seal for secure bonding and for deterioration.

### 52-45. Repair.

1. Replace unserviceable parts in nose access doors.
2. Repair door structural damage. Refer to BHT-MED-SRM-1 and FAA Publication AC

43.13-1A, Aircraft Inspection and repair manual.

3. Replace damaged seals (paragraph 52-3).

### 52-46. Installation.

1. Position upper door to structure and align attachment holes at top of door with holes in hinges.
2. Install screws and engage latches.
3. Install lower door hinges to fittings on structure.
4. Close door and install attaching studs.

### 52-47. ELECTRICAL AND EQUIPMENT COMPARTMENT ACCESS DOORS.

Access to forward fuselage section compartments, other than the crew area, is obtained by use of hinged doors.

### 52-48. Removal.

1. Release spring loaded latches and hold door open.
2. Remove hinge pins attaching doors to structure and remove door.

### 52-49. Inspection and repair.

Inspect and repair electrical compartment access door in accordance with procedures in paragraphs 52-44 and 52-45.

### 52-50. Installation.

1. Position door in opening and insert attaching hinge pin.
2. Close door firmly, forcing spring loaded latch to lock.

**52-51. MISCELLANEOUS ACCESS DOORS.**

Doors and panels are provided at various locations on the fuselage for access to interior areas. Three types of construction are used: Honeycomb with sheet metal and fiberglass faces; honeycomb with both faces of fiberglass; and contoured flat sheet metal. Screws or twist type fasteners retain doors in place.

**52-52. Removal.**

Remove screws or disengage fasteners, as applicable, and remove door, panel, or fairing.

**52-53. Inspection and repair.**

Inspect and repair electrical compartment access door in accordance with procedures in paragraphs 52-44 and 52-45.

**52-54. Installation.**

Position door, panel, or fairing on helicopter and fasten twist-type fastener or install screws, as applicable.

**52-55. TAIL ROTOR DRIVESHAFT ACCESS COVERS.**

The tail rotor driveshaft access cover installation consists of three formed aluminum alloy parts. Each cover is hinged on the right side and is secured on left side by twist-type studs through support angles atop the tailboom.

**52-56. Removal.**

1. Loosen stud (1, figure 52-12) in two places. Hinge open cover (4).

2. Loosen studs (10) and hinge open covers (6 and 9).

3. Remove cotter pin (3) and hinge pin (2). Remove covers (4 and 6).

4. Remove cotter pin (7), hinge pin (8), and cover (9).

**52-57. Inspection.**

1. Inspect covers (4, 6, and 9 figure 52-12) for missing, damaged, or loose studs.

2. Inspect covers for corrosion and mechanical damage.

3. Inspect support angles on left side for missing, damaged, or loose grommets.

4. Inspect support angles on right side for corrosion and mechanical damage.

**52-58. Repair.**

Repair corrosion and mechanical damage. Refer to BHT-MED-SRM-1 and FAA publication, AC 43.13-1A, Aircraft Inspection and Repair manual for structural repair.

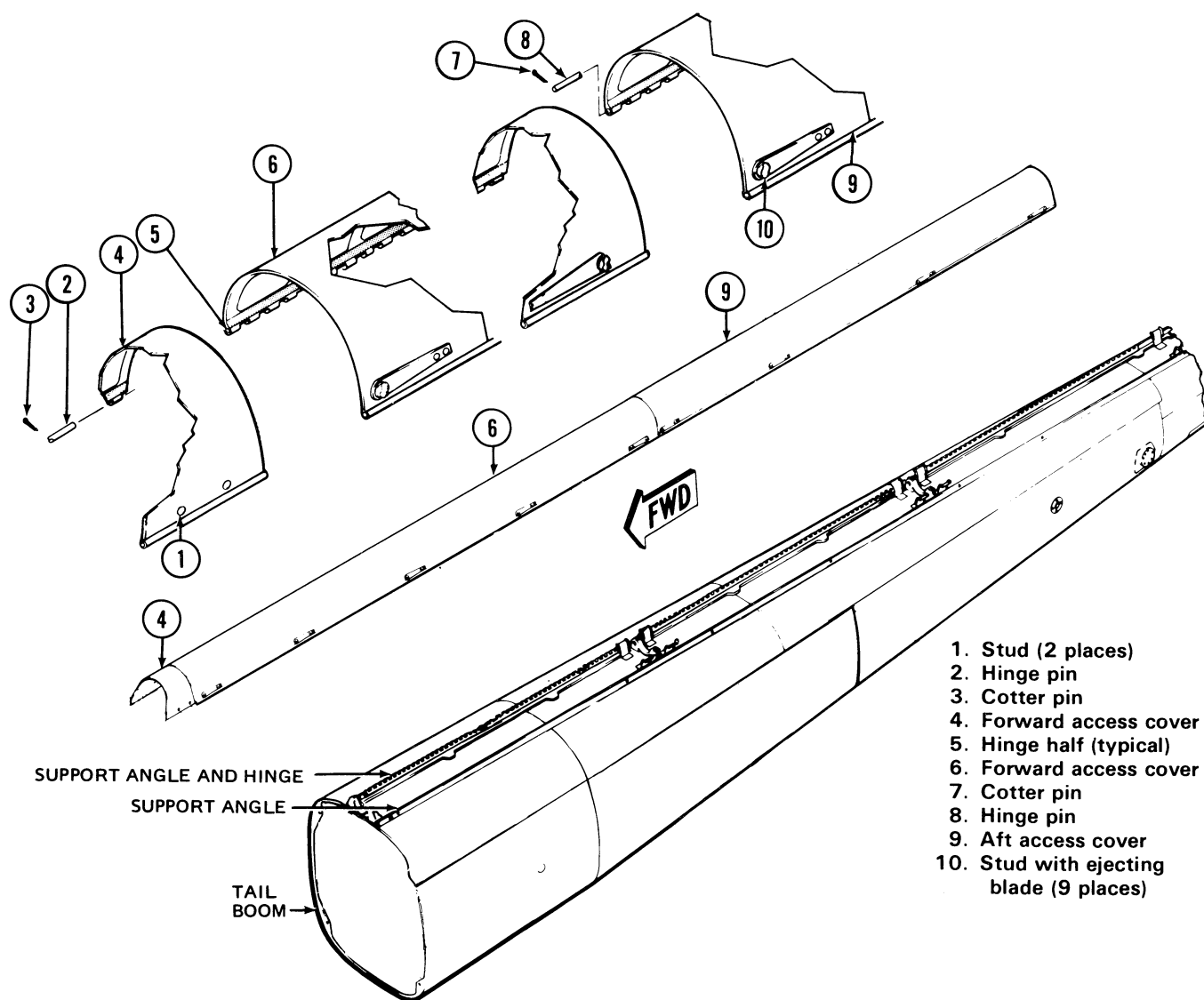
**52-59. Installation.**

1. Install aft cover (9, figure 52-12) with hinge pin (8) and secure with cotter pin (7).

2. Align forward cover (6) with hinge half. Align forward cover (4) with hinge half.

3. Install hinge pin (2) forward to aft, through cover (4) then cover (6). Secure with cotter pin (3).

4. Close cover (4) and fasten studs (1). Close covers (6 and 9) and latch studs (10).



212-M-52-12

Figure 52-12. Tailboom driveshaft access covers



## WINDOWS AND WINDSHIELDS

### 52-60. WINDOWS AND WINDSHIELDS

The following paragraphs provide maintenance instructions for the pilot and copilot windshields, cabin and nose section windows (upper and lower), crew door windows, passenger/cargo door windows, and hinged panel windows.

### 52-61. WINDSHIELDS

The helicopter is equipped with either acrylic or sandwich-type construction windshields. In the sandwich-type of windshield, the outer layer is made of tempered glass, the middle layer of pliable, laminated glass, and the inner layer of either glass or plastic. Glass laminated windshields may be identified by 212-030-464 located at the top outboard corner, readable from inside. Glass windshields may be used as a replacement on all helicopters. The windshields are set in weather-tight sealer and are mounted to the cabin structure with screws, washers, and nuts.

### 52-62. Windshields — Removal

1. Remove free air temperature gauge (pilot windshield only), if installed ([Chapter 95](#)).
2. Mark location of wiper stop (approximately BL 7.0). Remove windshield wiper arm and blade ([Chapter 30](#)).
3. Noting location of hardware, remove nuts, washers, and screws attaching windshield to fuselage.

#### NOTE

Shims may have been installed to reduce any gaps between windshield frame and mounting flange. If same windshield is to be reinstalled, mark location of any shims installed.

4. Separate windshield from sealing compound using a non-metallic spatula, putty knife, or other suitable tool (e.g., Snap-on P/N YA109C).

5. Carefully remove windshield from helicopter.

### 52-63. Windshields — Cleaning

#### MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
C-330	Cleaner

1. Wash windshields with a mild detergent and water solution. Dry with a soft clean cloth.
2. Polish acrylic windshields with cleaner ([C-330](#)).

### 52-64. Windshields — Inspection and Repair

1. Small scratches and minor abrasions on acrylic panels may be considered negligible provided pilot vision is not impaired or signs of developing cracks are not evident. Minor scratches, nicks, and non-puncturing dents in frame assemblies may be considered negligible provided such damage does not affect transparent panels.
2. Tears, holes, and cracks in acrylic panels less than 4.0 inch (101.60 mm) in length can be repaired provided damage nor repair will not interfere with pilot vision.
3. Inspect windshields and windows to damage limits shown in [Figure 52-14](#).
4. Refer to FAA Advisory Circular 43.13-1B, Aircraft Inspection and Repair, for repair instructions and procedures for acrylic. No repairs are authorized for glass windshields. Glass windshields shall be replaced if cracked, or if vision is impaired or distorted by scratches.

## 52-65. Windshields — Installation

### MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
<a href="#">C-305</a>	Aliphatic Naphtha
<a href="#">C-328</a>	Sealing Compound

1. Remove all sealing compound from mounting flange with a non-metallic putty knife, spatula, or similar tool.



WHEN CLEANING WINDOWS, USE ONLY TYPE II ALIPHATIC NAPHTHA ([C-305](#)). ALIPHATIC NAPHTHA TYPE I WILL CLOUD WINDOWS.

2. Wipe and clean mounting flange with cloth dampened with aliphatic naphtha ([C-305](#)).

3. Position windshield in mounting position so that it mates with the contour and that no portion of the bevel edge on the inside surface contacts the frame (minimum 0.010 inch (0.25 mm) clearance).

### NOTE

Do not trim windshield to final size until all mounting holes have been drilled.

4. Trim windshield only as required to allow temporary installation. Temporarily secure with heavy tape.

5. Mark the location of all screw holes on the windshield flange.

6. Remove windshield and confirm minimum edge distance of 0.38 inch (9.65 mm) for all holes. Readjust position as required to obtain proper edge distance.

7. Position windshield in place with all marked holes aligned.

8. Starting at the center of the vertical row (center post) and progressing towards the top and bottom, transfer the screw holes into the windshield flange using a 0.190 to 0.196 inch (4.82 to 4.97 mm) drill. Temporarily attach with Clecocos.

9. Transfer remaining screw holes starting at the inboard corners, progressing towards the outboard edge. Temporarily attach with Clecocos.

### NOTE

If a gap greater than 0.015 inch (0.381 mm) exists due to variations in windshield contour or mounting flange, a shim may be installed.

10. Check for excessive gap between windshield frame and mounting flange over a distance of three screw holes. If gap is greater than 0.015 inch (0.381 mm), install shim material as follows:

a. Prepare shim material from aluminum alloy 2024 T3 with a maximum thickness of 0.063 inch (1.6002 mm) to reduce any gaps to a maximum of 0.015 inch (0.381 mm).

b. Install shim between windshield frame and mounting flange. Shim material must be secured with a minimum of two fasteners.

c. Mark location of shim for proper installation in later steps.

11. Using a No. 4 drill, backdrill two holes on each edge of windshield. Use holes in mounting flange as a template.

12. Secure windshield to mounting flange with four screws, washers, and nuts. Lightly tighten. Finish drilling holes in windshield.

13. Confirm proper edge distance, mark windshield and shims (if required), and remove. Trim windshield edge and shims (if required) to proper size.

14. Remove all dust and foreign matter from windshield mating area and from windshield mounting flange.

15. Apply a small even bead of sealant ([C-328](#)) to window frame.

16. Position windshield, align holes, and install shims (if required), screws, washers, and nuts.

17. Increase torque slowly and evenly on all screws or nuts to a maximum of 23 inch-pounds (0.16 Nm). Verify torque before sealant dries.

18. Remove excess sealant (C-328) from around windshield with aliphatic naphtha (C-305). Touch up paint if bare metal is evident.

19. Install windshield wiper assemblies and free air temperature gauge (if installed) (Chapters 30 and 95).

#### 52-66. CABIN ROOF WINDOWS

The cabin roof windows (Figure 52-13) are made of tinted acrylic.

#### 52-67. Cabin Roof Windows — Removal

1. Remove free air temperature gauge (Chapter 95), if installed.

2. Remove nuts, washers, and screws attaching windows (1, Figure 52-13) to roof structure.

3. Separate window from sealant using a spatula, putty knife, or similar tool.

4. Carefully remove window from helicopter.

#### 52-68. Cabin Roof Windows — Inspection and Repair

1. Inspect windows to damage limits shown in Figure 52-14.

2. Refer to FAA Publication AC 43.13-1B, Aircraft Inspection and Repair, for repair methods.

#### 52-69. Cabin Roof Windows — Installation

#### MATERIALS REQUIRED

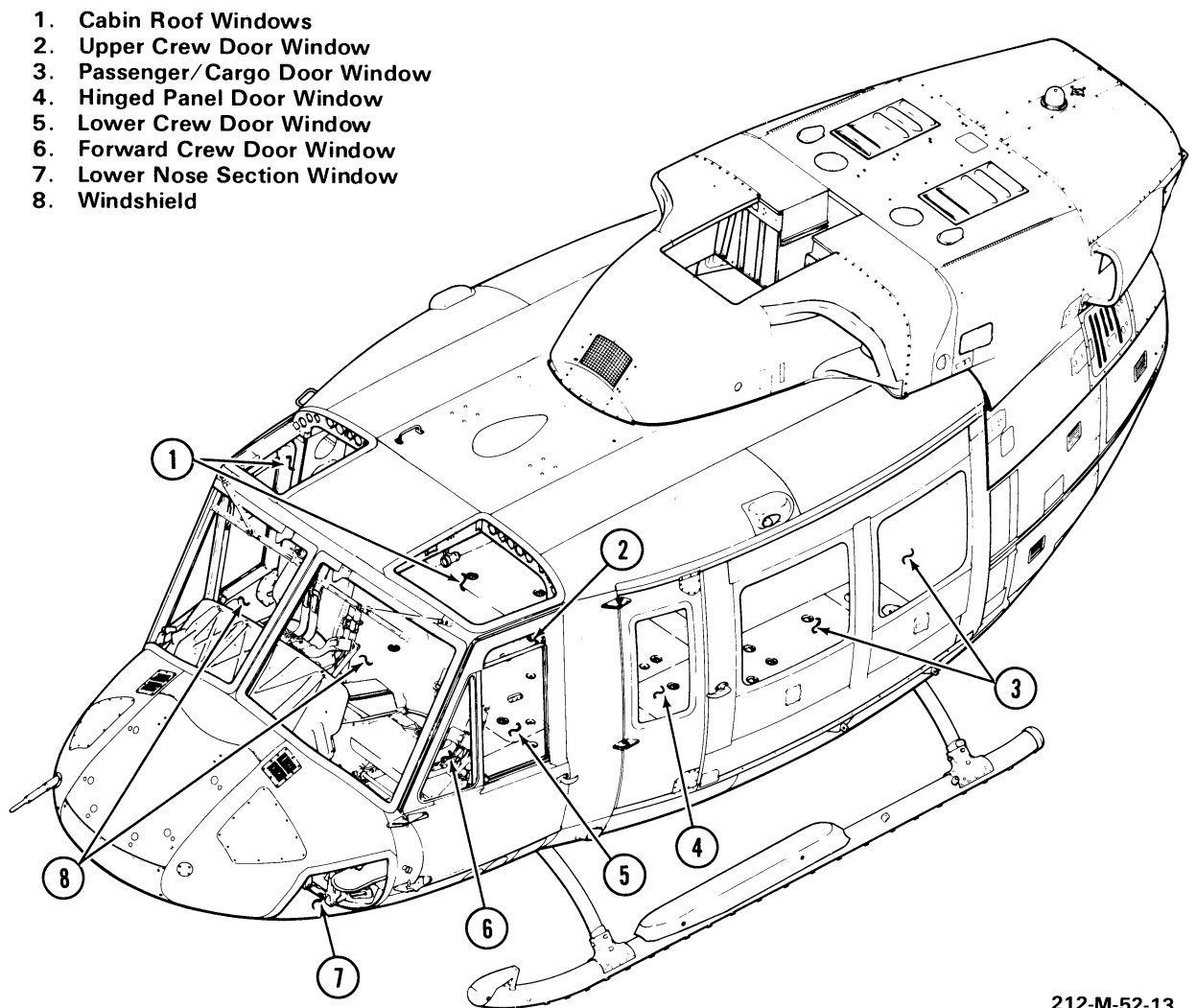
Refer to BHT-ALL-SPM for specifications.

NUMBER	NOMENCLATURE
C-305	Aliphatic Naphtha
C-308	Adhesive

1. Prior to installation of cabin roof windows (1, Figure 52-13), wash windows with a mild detergent and water solution. Dry with a soft, lint-free, dry cloth.

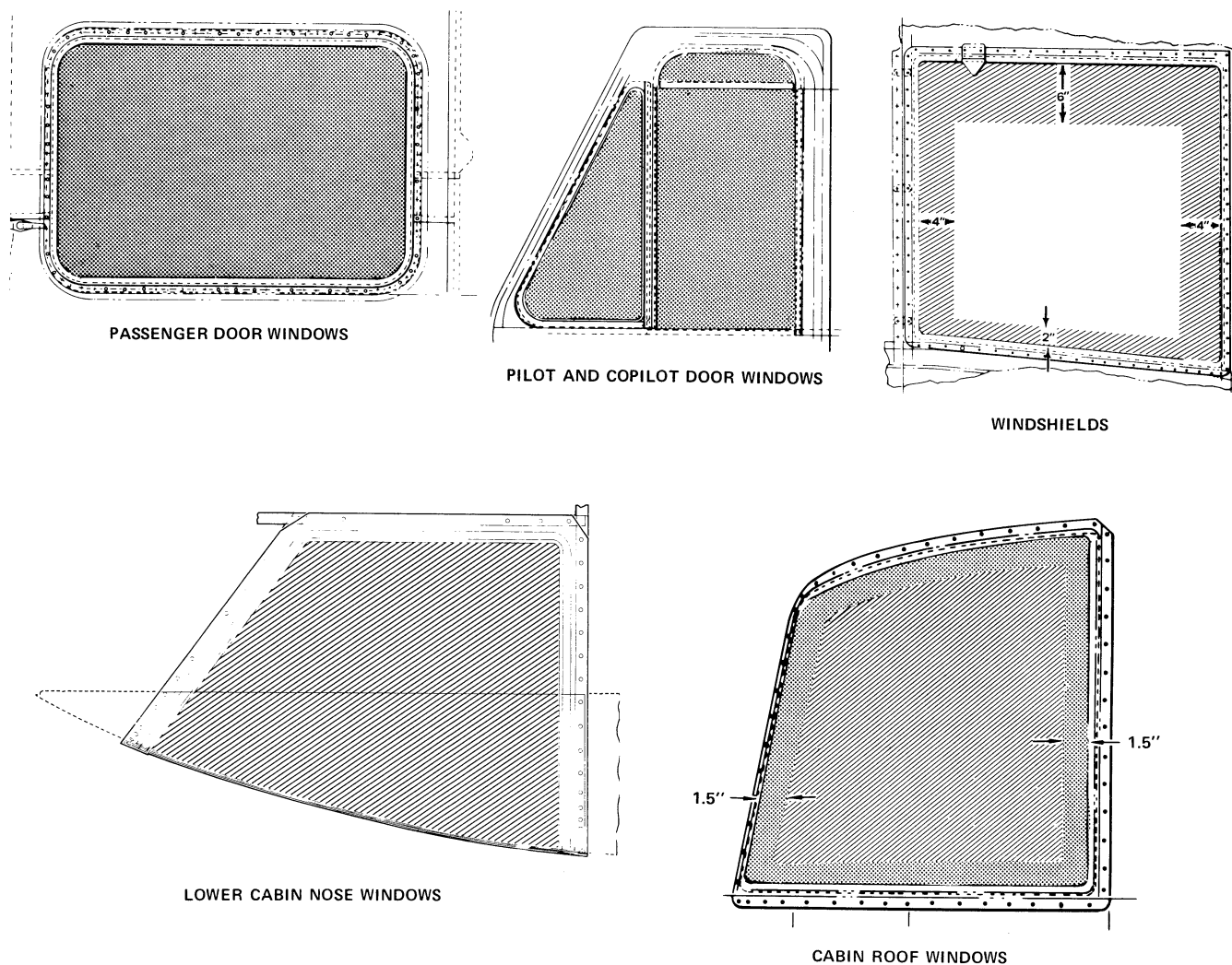






212-M-52-13

**Figure 52-13. Windows and windshields**



Area "A": Scratches and pits may be polished out to the extent that vision is not distorted. Distortion of vision is cause for replacement. Cracks, holes or other damage may be temporarily repaired, if vision of crew members will not be impaired, by stop drilling, patching or other approved methods (refer to FAA Advisory Circular 43.13-1. Aircraft Inspection and Repair ), but window must be replaced at the earliest opportunity.

Area "B": Scratches and pits are permitted in this area provided they are not so numerous or form such a pattern as to be objectionable to the viewer. Cracks, holes or other damage may be temporarily repaired by stop drilling, patching or other approved methods (refer to FAA Advisory Circular 43.13-1. Aircraft Inspection and Repair.), but window must be replaced at the earliest opportunity.

Area "C": Scratches and pits are permitted in this area, providing the structural integrity of the window is not impaired. Cracks, holes or other damage may be repaired by stop drilling, patching or other approved methods provided structural integrity is not impaired (refer to FAA Advisory Circular 43.13-1. Aircraft Inspection and Repair.)

212-M-52-14

**Figure 52-14. Windshield and window damage limits**

2. Remove old sealing compound from mounting flange with putty knife, spatula, or other suitable tool.



WHEN CLEANING WINDOWS AND MOUNTING FLANGE, USE ONLY ALIPHATIC NAPHTHA, TYPE II (C-305). DO NOT USE ALIPHATIC NAPHTHA, TYPE I AS IT WILL CLOUD WINDOWS.

3. Wipe and clean mounting flange with cloth dampened in aliphatic naphtha (C-305).
4. If a new window is being installed, position window over opening. Trim only enough surplus material from edge of window to permit proper alignment of window against mounting flange.

#### NOTE

Do not trim window to final size until all mounting holes have been drilled.

5. Position window against mounting flange and, using a 0.208 to 0.214 in. drill (No. 4), back drill two holes on each edge of window. Use holes in mounting flange as template.
6. Secure window to mounting flange with four dural screws, washers, and nuts, lightly tighten. Drill remainder of holes in window.
7. Measure window and mark proper edge distance required for installation. Remove window and trim window edge to 0.80 in. (20.32 mm).



WHEN CLEANING WINDOWS, USE ONLY ALIPHATIC NAPHTHA, TYPE II (C-305). DO NOT USE ALIPHATIC NAPHTHA, TYPE I AS IT WILL CLOUD WINDOWS.

8. Remove all dust and dirt from windows and mounting flange with a clean cloth moistened in aliphatic naphtha (C-305).

9. Apply a 0.125 in. (3.18 mm) wide bead of adhesive (C-308).

10. Position window to mounting flange, align holes, and install screws, washers, and nuts.



WHEN CLEANING WINDOWS AND MOUNTING FLANGE, USE ONLY ALIPHATIC NAPHTHA TYPE II. DO NOT USE ALIPHATIC NAPHTHA, TYPE I AS IT WILL CLOUD WINDOWS.

11. Remove excess sealant from around window with a clean cloth moistened in aliphatic naphtha (C-305).

12. Install free air temperature gage, as required (Chapter 95).

#### 52-70. LOWER NOSE SECTION WINDOWS.

The lower nose windows (figure 52-13) are made of clear acrylic.

#### 52-71. Removal.

1. Remove nuts, washers, and screws attaching windows (7, figure 52-13) to roof structure.

2. Separate window from sealant and remove window from helicopter.

#### 52-72. Inspection and repair.

1. Inspect windows to damage limits shown in figure 52-14.
2. Refer to FAA Publication AC 43.13-1A, Aircraft Inspection and Repair, for repair methods.

**52-73. Installation.****MATERIALS REQUIRED**

<b>NUMBER</b>	<b>NOMENCLATURE</b>
C-305	Aliphatic Naphtha
C-308	Adhesive

1. Prior to installation of lower nose section windows (7, figure 52-13), wash windows with a mild detergent and water solution. Dry with a soft dry cloth.

2. Remove old sealant from mounting flange with putty knife, spatula, or other suitable tool.



WHEN CLEANING WINDOWS AND FLANGES, USE ONLY ALIPHATIC NAPHTHA, TYPE II (C-305). DO NOT USE ALIPHATIC NAPHTHA, TYPE I, AS IT WILL CLOUD WINDOWS.

3. Wipe and clean mounting flange with a cloth moistened in aliphatic naphtha (C-305). If an old window is being installed, clean edges of window using naphtha.

4. Position a new window over opening. Trim surplus edge to permit window to be in mounting position against flange.

**NOTE**

Do not trim window to final size until all mounting holes have been drilled.

5. Position window against mounting flange and using a 0.208 to 0.214 in. (No.4) diameter drill, back drill two holes in edge of each window.

6. Secure window to mounting flange with four dural screws, washers, and nuts. Lightly tighten screws. Finish drilling holes in window.

7. Determine proper edge distance and mark window. Remove window and trim to 1.04 in. (26.42 mm) edge distance.



WHEN CLEANING WINDOWS, USE ONLY ALIPHATIC NAPHTHA, TYPE II (C-305). DO NOT USE ALIPHATIC NAPHTHA, TYPE I, AS IT WILL CLOUD WINDOWS.

8. Remove all dust and foreign matter from window mating area and from window mounting flange using aliphatic naphtha (C-305).

9. Apply a 0.125 in. (3.18 mm) wide bead of adhesive (C-308) around window.

10. Position window in mounting flange, align holes, and install screws, washers, and nuts.

11. Remove excess sealant from around window.

**52-74. CREW DOOR WINDOWS.**

Three separate windows are installed in each crew door (figure 52-13); a forward window, a lower crew door window, and an upper crew door window.

**52-75. Removal.**

1. Remove forward crew door window (6, figure 52-13) as follows:

a. Drill out rivets using a 0.128 in. diameter drill.

b. Separate sealant from window using putty knife or spatula.

c. Remove window from helicopter.

2. Remove lower crew door window (5) as follows:

a. Remove access door from lower edge of door.

b. Remove three screws, which attach handle, from lower crew door window.

c. Loosen adjustable stop and slide window downward and remove through access door opening.

3. Remove upper crew door window (2) as follows:

a. Remove nuts, washers, and screws attaching upper crew door window to helicopter.

b. Separate window from sealing compound and remove window from helicopter.

#### 52-76. Inspection and repair.

1. Inspect windows to damage limits shown in figure 52-14.

2. Refer to FAA Publication AC 43.13-1, Aircraft Inspection and Repair, for repair methods.

#### 52-77. Installation.

#### MATERIALS REQUIRED

NUMBER	NOMENCLATURE
C-305	Aliphatic Naphtha
C-308	Adhesive

1. Prior to installation of any crew door window, wash window with a mild detergent and water solution. Dry with a soft, dry cloth.

2. Install upper crew door window (2, figure 52-13) as follows:

a. Remove old sealant from mounting flange with putty knife, spatula, or other suitable tool.



WHEN CLEANING MOUNTING FLANGE AND WINDOWS, USE ONLY ALIPHATIC NAPHTHA, TYPE II (C-305). DO NOT USE ALIPHATIC NAPHTHA, TYPE I, AS IT WILL CLOUD WINDOWS.

b. Wipe and clean mounting flange with aliphatic naphtha (C-305). If old window is being installed, clean edge of window using aliphatic naphtha.

c. Position a new window over opening. Trim surplus edge to permit window to be in mounting position against flange.

#### NOTE

Do not trim window to final size until all mounting holes have been drilled.

d. Position window against mounting flange, and using a 0.146 to 0.156 in. diameter drill, back drill two holes on edge of window.

e. Secure window to mounting flange with four dural screws, washers, and nuts. Lightly tighten nuts. Finish drilling holes in window.

f. Determine proper edge distance, mark, and remove window. Trim window edge to 0.50 in. (12.7 mm).

g. Remove all dust and foreign matter from window mating area and from window mounting flange.

h. Apply a 0.125 in. (3.18 mm) wide bead of adhesive (C-308).

i. Position window to mounting flange, align holes, and install screws, washers, and nuts.



WHEN CLEANING WINDOWS, USE ONLY ALIPHATIC NAPHTHA, TYPE II (C-305). DO NOT USE ALIPHATIC NAPHTHA, TYPE I, AS IT WILL CLOUD WINDOWS.

j. Remove excess sealant from around window using aliphatic naphtha (C-305).

3. Install lower crew door window (5) as follows:

a. Guide window upward through slot in bottom of door and into window channels.

b. Check progress of window through opening in aft edge of door.

c. With window in a partially open position, engage adjustable stop.

d. Install handle using three screws.

e. Install lower access door.

4. Install forward crew door window as follows:

a. Remove old sealant from mounting flange with putty knife, spatula, or other suitable tool.



WHEN CLEANING MOUNTING FLANGE AND WINDOWS, USE ONLY ALIPHATIC NAPHTHA, TYPE II (C-305). DO NOT USE ALIPHATIC NAPHTHA, TYPE I, AS IT WILL CLOUD WINDOWS.

b. Wipe and clean edging and window with aliphatic naphtha (C-305).

c. If a new window is being installed, trim window to final size. Position window into

mounting flange and drill mounting holes using 0.128 in. diameter drill.

d. Apply a 0.125 in. (3.18 mm) bead of adhesive (C-308) around window.

e. Install 0.125 in. (3.18 mm) rivets to secure window to crew door mounting flange.

f. Remove excess sealing compound from around edge of window using a clean, lint-free cloth moistened with aliphatic naphtha (C-305).

### 52-78. PASSENGER/CARGO DOOR WINDOWS (DOORS EQUIPPED WITH EMERGENCY ESCAPE PANELS).

The following maintenance instructions are for passenger/cargo door windows which are an integral part of an emergency exit panel. The windows are constructed of clear acrylic material. For push out type windows, refer to paragraph 52-82.

### 52-79. Removal.

1. Remove passenger/cargo door (paragraph 52-18).

2. Remove emergency exit panel from door (paragraph 52-27).

3. Remove window (3, figure 52-13) by drilling out rivets using a 0.128 in. diameter drill.

4. Separate sealant from window using a spatula or putty knife.

5. Remove window from door.

### 52-80. Inspection and repair.

1. Inspect windows to damage limits shown in figure 52-14.

2. Refer to FAA Publication AC 43.13-1A, Aircraft Inspection and Repair, for repair methods.

**52-81. Passenger/Cargo Door Windows (Doors Equipped With Emergency Escape Panels) — Installation**

**MATERIALS REQUIRED**

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
<a href="#">C-305</a>	Aliphatic Naphtha
<a href="#">C-308</a>	Sealant

1. Prior to installation, clean window with a mild detergent and water. Dry with a soft clean cloth.



WHEN CLEANING WINDOWS AND MOUNTING FRAME OF SEALANT, USE ONLY ALIPHATIC NAPHTHA ([C-305](#)), TYPE II. DO NOT USE ALIPHATIC NAPHTHA, TYPE I, AS IT WILL CLOUD WINDOWS.

2. Remove old sealant from window and panel using a clean cloth moistened with aliphatic naphtha ([C-305](#)).
3. Position window in panel. Drill rivet holes in window using a 0.128 inch (3.25 mm) diameter drill.
4. Apply a 0.125 inch (3.18 mm) wide bead of sealant ([C-308](#)) around mounting flange.
5. Secure window in panel using 0.125 inch (3.18 mm) diameter rivets.
6. Install exit panel in door ([paragraph 52-28](#)).

**52-82. PASSENGER/CARGO DOOR WINDOWS (DOORS EQUIPPED WITH PUSH OUT WINDOWS)**

The passenger door windows are made of clear acrylic material. The windows are installed in metal frames with silicone rubber retainers and are designed for

emergency egress. EMERGENCY PUSH HERE decals are installed in lower corners.

**52-83. Passenger/Cargo Door Windows (Doors Equipped With Push Out Windows) — Removal**

**NOTE**

Removal is not recommended unless required by window or retainer damage. Procedures are same for all push out windows.

1. Remove interior decor/trim as necessary to gain access to window supporting structure.
2. Using mylar, tedlar, or similar tape, mask off structure adjacent to window retainer. The mask edge should be pressed firmly against, but not on, retainer.
3. Remove filler (lock strip) (3, [Figure 52-15](#)) from retainer (6). Discard filler.



DO NOT ALLOW WINDOW TO FALL. STORE WINDOW ON EDGE TO PREVENT CONTOUR CHANGE.

4. Push window out by pressing at corner as directed by decal.
5. Pull retainer (6) from structure starting at unbonded area at lower corners. Discard retainer.

**52-84. Passenger/Cargo Door Windows (Doors Equipped With Push Out Windows) — Inspection**

**MATERIALS REQUIRED**

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
<a href="#">C-305</a>	Aliphatic Naphtha
<a href="#">C-423</a>	Abrasive Paper

**MATERIALS REQUIRED**

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
<a href="#">C-439</a>	Aluminum Foil Tape
<a href="#">C-516</a>	Clean Cloth

1. Inspection — windows installed.



NO REPAIRS ARE ALLOWED ON  
RETAINER (6) AND FILLER (3).

a. Visually inspect retainer (6, [Figure 52-15](#)) and filler (3) for cuts, cracks, or signs of deterioration (swelling). Replace if damage is found.

b. Verify retainer (6) is securely bonded to both sides of window frame (5) except in radius area of two lower corners. Replace if any bond separation is found.

c. Inspect window (7) for cracking, crazing, or reduced transparency. Replace damaged windows.

**NOTE**

Retainers (6) and fillers (3) shall be replaced when window is removed from retainer.

2. Inspection — windows removed.

a. Mark both lower corners of window frame as shown in [Figure 52-15](#). Mask these lower corner areas where the bond is prohibited with aluminum foil tape ([C-439](#)). Apply tape to both sides of the door.

b. Remove all old adhesive and finish from unmasked portion of window frame (5) using stiff fiber

brush and a clean cloth ([C-516](#)) dampened with aliphatic naphtha ([C-305](#)).

c. For aluminum doors, use 360 grit abrasive paper ([C-423](#)) to remove any primer from unmasked area of window frame (5).

d. For composite doors, use 360 grit abrasive paper ([C-423](#)) and lightly abrade surface to be in contact with the retainer (seal) (6) on both sides of the door.

e. Remove the tape from the lower corners of the window frame.

f. Inspect edge of frame (5) for scratches, cracks, or other damage. Any scratches less than 0.004 inch (0.10 mm) deep and 1.00 inch (25.40 mm) long may be polished out. Repairs must not be closer than 3.0 inches (76.2 mm) from adjacent repairs. An area may only be repaired once.



WHEN CLEANING WINDOWS, USE ONLY  
TYPE II ALIPHATIC NAPHTHA ([C-305](#)).  
ALIPHATIC NAPHTHA TYPE I WILL  
CLOUD WINDOWS.

g. Inspect window (7) for chamfered, nicked or notched edge, cracking, crazing, or reduced transparency. Replace damaged windows.

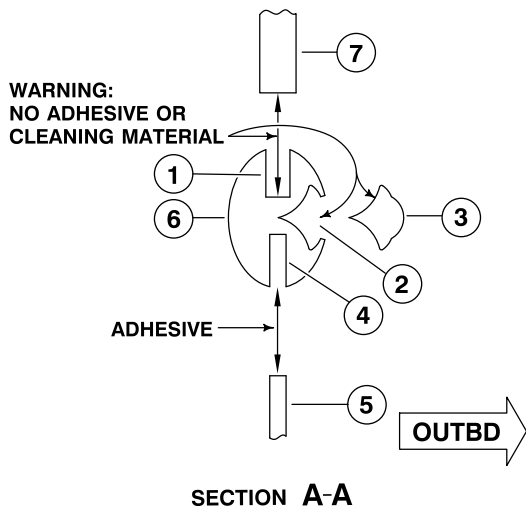
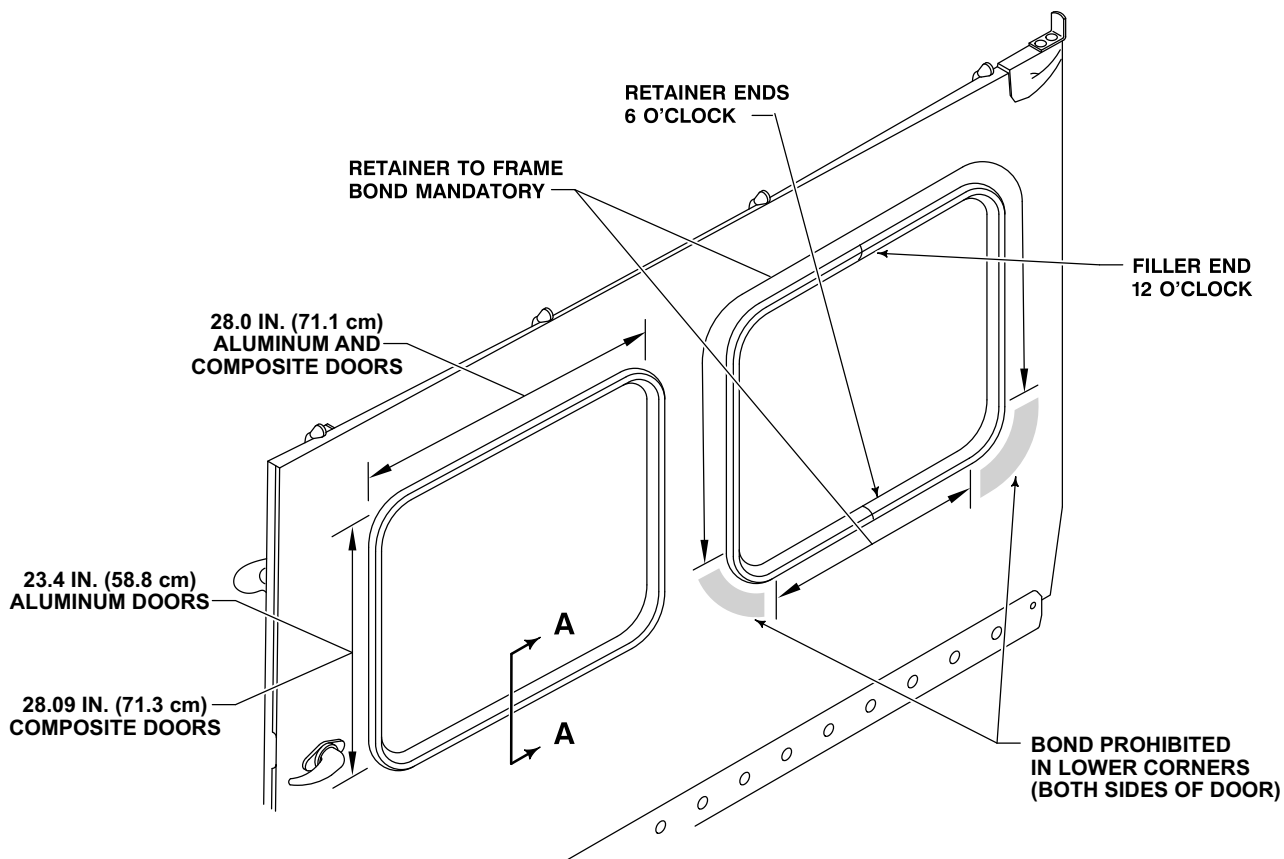
3. Repair window (7) in accordance with [paragraph 52-86](#).

**52-85. Deleted**

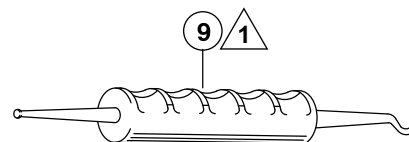
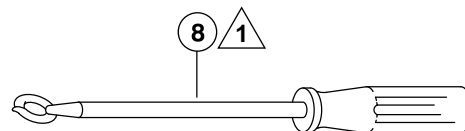
**52-86. Passenger/Cargo Door Windows (Doors Equipped With Push Out Windows) — Repair**

Repair windows in accordance with [Figure 52-14](#) and FAA Publication 43.13-1B, Aircraft Inspection and Repair.





1. Retainer window groove
2. Retainer filler groove
3. Filler (locking strip)
4. Retainer groove
5. Window frame
6. Retainer (seal)
7. Window
8. Locking strip (filler) insertion tool CP293 or equivalent
9. Retainer installation tool No. LT112 or equivalent



### NOTE



Tool may be obtained from:  
C. R. Laurence Co. Inc.  
2080 Lonestar Drive  
Dallas, Tx 75212

412\_MM\_52\_0012

Figure 52-15. Passenger/Cargo Door Windows (Doors Equipped With Push Out Style Windows)

## 52-87. Passenger/Cargo Door Windows (Doors Equipped With Push Out Windows) — Installation

### SPECIAL TOOLS REQUIRED

NUMBER	NOMENCLATURE
CP 293	Locking Strip (Filler) Insertion Tool
LT112	Retainer Installation Tool

### MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
<a href="#">C-300</a>	Adhesive
<a href="#">C-305</a>	Aliphatic Naphtha
<a href="#">C-306</a>	Toluene
<a href="#">C-307</a>	Silicone Adhesive
<a href="#">C-316</a>	Acetone
<a href="#">C-337</a>	Sealant
<a href="#">C-347</a>	Xylene
<a href="#">C-363</a>	Adhesive
<a href="#">C-423</a>	Abrasive Cloth or Paper
<a href="#">C-426</a>	Masking Tape
<a href="#">C-516</a>	Clean Cloth

1. If the window was removed to perform a structural repair that may have affected the window opening, measure window opening. Trim opening as required to the following dimensions ( $\pm 0.03$  inch ( $\pm 0.8$  mm)):

- For aluminum doors, window opening is 28.00 inches (71.1 cm) wide by 23.14 inches (58.8 cm) inches high ([Figure 52-15](#)).
- For composite doors, window opening is 28.00 inches (71.1 cm) wide by 28.09 inches (71.3 cm) inches high ([Figure 52-15](#)).



ENSURE WINDOW FRAME (5) IS CLEAN AND COMPLETELY FREE OF ANY PAINT FINISHING MATERIAL.

### NOTE

Helicopter finishes will not adhere to surfaces where primer and adhesive are applied.

### NOTE

Window opening must be in a protected area, shielded from wind, rain, or other adverse environmental conditions during installation.

2. Following applicable trimming or initial preparation, remove all residue using a clean cloth ([C-516](#)) moistened with toluene ([C-306](#)), xylene ([C-347](#)), or acetone ([C-316](#)). Wipe dry with a clean cloth ([C-516](#)).

3. Temporarily position new retainer (seal) (6) in window frame (5) opening.

4. With the new retainer (seal) (6) positioned in place, apply masking tape ([C-426](#)) around its periphery to the surface of both sides of the door. Remove the retainer.

5. For composite doors, apply adhesive ([C-363](#)) to the trimmed edge of the window frame (5) opening. Allow to dry for 6 hours at room temperature before installing retainer (seal) (6).

6. For aluminum doors, apply sealant ([C-337](#)) within masked area of window frame (5). Allow to dry 30 minutes before installing retainer (seal) (6).

7. Prepare and fit new retainer (seal) (6) in window frame (5) as follows:

- a. Abrade retainer groove (4) with 80 grit abrasive paper (C-423).
- b. Clean retainer groove (4) with a clean cloth (C-516) dampened with toluene (C-306), xylene (C-347), or acetone (C-316). Wipe dry with a clean cloth (C-516).

**NOTE**

Retainer filler groove (2) shall be positioned outboard.

c. Position and hold retainer (seal) (6) in place with masking tape (C-426) so that it nests in all four corners of the opening. Position ends at approximately the 6 o'clock position and trim to length.

d. Mix adhesive (C-300) and apply to both trimmed ends of retainer (seal) (6). Allow to air dry for 15 to 30 minutes to a strong tack and press the ends together.

**CAUTION**

WHEN CLEANING WINDOWS, USE TYPE II ALIPHATIC NAPHTHA (C-305). ALIPHATIC NAPHTHA TYPE I WILL CLOUD WINDOWS.

**NOTE**

The height and width are very similar on the square window. The window is normally oriented correctly when the part number is at the bottom.

8. Place window (7) in retainer window groove (1).

**CAUTION**

IF PROCURED AS A PRE-TRIMMED ITEM, DO NOT CUT OR STRETCH THE FILLER (LOCKING STRIP) (3) TO LENGTH. THE FULL LENGTH MUST BE USED.

IF FILLER (LOCKING STRIP) (3) IS PROCURED AS RAW MATERIAL BY THE FOOT, TEMPORARILY PLACE FILLER (LOCKING STRIP) (3) ON TOP OF RETAINER FILLER GROOVE (2) AND CUT TO LENGTH USING A SHARP KNIFE. AFTER TRIMMING, THE FULL LENGTH MUST BE USED.

9. Install filler (locking strip) (3) in retainer filler groove (2), using locking strip insertion tools (8 and 9). Ends of filler shall meet approximately at the 12 o'clock position in retainer (seal) (6).

10. To avoid adhesive contact with the painted surfaces of the door, verify installation of masking tape (C-426) on both sides of the door around the periphery of the retainer (seal) (6). Mark lower corner areas not to be bonded on both sides of the door, as shown in Figure 52-15.

**CAUTION**

DO NOT APPLY ADHESIVE TO THE RETAINER WINDOW GROOVE (1), FILLER (LOCKING STRIP) (3), OR LOWER CORNER AREAS SHOWN IN FIGURE 52-15.

11. Using a clean wooden or plastic stick or the AT 515 tool, locally lift the retainer (seal) (6) and inject adhesive (C-307) in a small bead between the retainer and window frame (5), all around the retainer except in lower corner areas as shown in Figure 52-15. A small amount of adhesive squeeze-out around the edges is desirable.

**CAUTION**

DO NOT ALLOW TOLUENE (C-306) OR XYLENE (C-347) TO COME INTO CONTACT WITH WINDOW (7).

12. Remove excess silicone adhesive using a clean cloth (C-516) dampened with toluene (C-306), xylene (C-347), or acetone (C-316). Wipe dry with a clean cloth (C-516).

13. Turn the door over and apply adhesive (C-307) to the other side of the retainer (seal) (6) and window frame (5) per [step 11](#) and [step 12](#).

14. Remove all masking tape from around retainer (seal) (6).

15. Inspect periphery of window (7) and retainer (seal) (6) for gaps between the retainer and window and between the retainer and window frame (5).

#### NOTE

Silicone adhesive (C-307) curing is obtained from moisture in the air. If window installation is performed in a very dry environment, curing may be accelerated by covering the window with a sealed plastic bag and placing a cloth wet with water in a sealed compartment on each side of the window. Make sure no water makes direct contact with the retainer.

16. Placard the window (7) with a "DO NOT DISTURB" placard and allow to dry. Do not remove the placard or release the helicopter for flight until the silicone adhesive has cured for a minimum of 24 hours at room temperature.

17. If not already installed, apply "EMERGENCY PUSH HERE" decals on lower corners of window designated for emergency egress ([Chapter 11](#)).

18. Install interior decor/trim (if applicable).

#### 52-88. CARGO HINGED PANEL DOOR WINDOWS

The windows in the hinged panel door are constructed of clear acrylic material.

#### 52-89. Cargo Hinged Panel Door Windows — Removal

1. Remove hinged panel door from helicopter ([paragraph 52-33](#)).

2. Remove screws from securing door latch plexiglass covers.

3. Drill out nuts using a 0.128 inch (3.25 mm) diameter drill.

4. Separate window (4, [Figure 52-13](#)) from sealant using a non-metallic putty knife, spatula, or similar tool.

5. Carefully remove window from helicopter.

#### 52-90. Cargo Hinged Panel Door Windows — Inspection and Repair

Inspect and repair window as required. Refer to FAA publication AC 43.13-1B, Aircraft Inspection and Repair Manual.

#### 52-91. Cargo Hinged Panel Door Windows — Installation

#### MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
C-305	Aliphatic Naphtha
C-308	Sealant

1. Prior to installation, clean windows with mild detergent and water. Dry with a soft, clean, lint-free cloth.



WHEN CLEANING WINDOWS AND MOUNTING FLANGE OF OLD ADHESIVE, USE ONLY ALIPHATIC NAPHTHA (C-305), TYPE II. DO NOT USE ALIPHATIC NAPHTHA, TYPE I, AS IT WILL CLOUD WINDOWS.

2. Clean windows and mounting flange with aliphatic naphtha (C-305).

3. If a new window is being installed, drill rivet mounting holes using a 0.128 inch (3.25 mm) diameter drill.

4. Apply a 0.125 inch (3.18 mm) wide bead of sealant (C-308) on window edges.

5. Mount window in panel and secure using 0.125 inch (3.18 mm) diameter rivets.
6. Install screws securing door latch plexiglass cover to window.
7. Install door on helicopter ([paragraph 52-35](#)).

