

Chapter 2 CANOPY JETTISON GUN

◀ (VENOM/VAMPIRE AIRCRAFT) ▶

LIST OF APPENDICES

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APPENDIX A

OPERATIONS BEFORE FLIGHT

Safety precautions

1. All personnel are warned of the extreme danger of interfering with cartridge and detonator-operated jettison equipment. In no circumstances are tradesmen to work on items containing cartridge-operated ejection equipment without first ascertaining from the Armament Tradesman that it is safe to do so.
2. All types of ejection seat cartridges and detonators are to be removed and fitted by an Armament Tradesman only. Ejection seat primary, drogue gun and canopy cartridges are to be removed before the ejection seat is raised on the guide rails.
3. Before entering a cockpit or cabin to commence servicing on or near an ejection seat ALL tradesmen are to report to the Airframe N.C.O. immediately responsible for the aircraft and request that all safety pins be correctly positioned to ensure safety to the tradesman. This N.C.O. is the *only* person allowed to transfer the safety pins. The tradesman is to report to the N.C.O. again on completion of the servicing.

Item No.	Item	Operation
AIRFRAME		
1	Canopy jettison gun lock safety pin	Remove and stow.
ARMAMENT		
1	(a) Ejection gun. (b) Control handle. (c) Control cable.	} Examine for damage and security of attachment.

APPENDIX B

OPERATIONS AFTER FLIGHT

Safety precautions

1. All personnel are warned of the extreme danger of interfering with cartridge and detonator-operated jettison equipment. In no circumstances are tradesmen to work on items containing cartridge-operated ejection equipment without first ascertaining from the Armament Tradesman that it is safe to do so.
2. All types of ejection seat cartridges and detonators are to be removed and fitted by an Armament Tradesman only. Ejection seat primary, drogue gun and canopy cartridges are to be removed before the ejection seat is raised on the guide rails.
3. Before entering a cockpit or cabin to commence servicing on or near an ejection seat ALL tradesmen are to report to the Airframe N.C.O. immediately responsible for the aircraft and request that all safety pins be correctly positioned to ensure safety to the tradesman. This N.C.O. is the *only* person allowed to transfer the safety pins. The tradesman is to report to the N.C.O. again on completion of the servicing.

Item No.	Item	Operation
AIRFRAME		
1	Canopy jettison gun lock safety pin	Ensure that the pilot has fitted the safety pin into the canopy jettison gun lock.
ARMAMENT		
1	(a) Ejection gun. (b) Control handle. (c) Control cable.	} Examine for damage and security of attachment.

APPENDIX C

OPERATIONS AT THE PRIMARY AND PRIMARY STAR SERVICING OF THE AIRCRAFT

Safety precautions

1. All personnel are warned of the extreme danger of interfering with cartridge and detonator-operated jettison equipment. In no circumstances are tradesmen to work on items containing cartridge-operated ejection equipment without first ascertaining from the Armament Tradesman that it is safe to do so.

2. All types of ejection seat cartridges and detonators are to be removed and fitted by an Armament Tradesman only. Ejection seat primary, drogue gun and canopy cartridges are to be removed before the ejection seat is raised on the guide rails.

3. Before entering a cockpit or cabin to commence servicing on or near an ejection seat ALL tradesmen are to report to the Airframe N.C.O. immediately responsible for the aircraft and request that all safety pins be correctly positioned to ensure safety to the tradesman. This N.C.O. is the *only* person allowed to transfer the safety pins. The tradesman is to report to the N.C.O. again on completion of the servicing.

Item No.	Item	Operation
AIRFRAME		
1	Canopy jettison gun lock safety pin	Ensure that the pilot has fitted the safety pin into the canopy jettison gun lock.
ARMAMENT		
1	Canopy jettison control handle	Comply with safety precautions relating to the positioning of the safety pins.
2	Canopy jettison operating cable	Examine visually for corrosion, fouling, fraying, kinking, damage and security of attachment to the firing lever.
3	Control handle	(1) Examine for distortion and damage. (2) Examine the securing strap for fraying and damage.
4	Jettison gun	(1) Examine for damage and security of attachment to the trunnion brackets. (2) Examine for correct wire-locking. (3) Ensure the No. 20 S.W.G. aluminium shear wire is fitted.
5	Canopy jettison control handle	Comply with safety precautions relating to the positioning of safety pins.
6	Form 700	Sign for completing Primary or Primary Star Servicing.

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APPENDIX D

OPERATIONS WHEN REMOVING THE CANOPY JETTISON GUN

Safety precautions

1. All personnel are warned of the extreme danger of interfering with cartridge and detonator-operated jettison equipment. In no circumstances are tradesmen to work on items containing cartridge-operated ejection equipment without first ascertaining from the Armament Tradesman that it is safe to do so.
2. All types of ejection seat cartridges and detonators are to be removed and fitted by an Armament Tradesman only. Ejection seat primary, drogue gun and canopy cartridges are to be removed before the ejection seat is raised on the guide rails.
3. Before entering a cockpit or cabin to commence servicing on or near an ejection seat ALL tradesmen are to report to the Airframe N.C.O. immediately responsible for the aircraft and request that all safety pins be correctly positioned to ensure safety to the tradesman. This N.C.O. is the *only* person allowed to transfer the safety pins. The tradesman is to report to the N.C.O. again on completion of the servicing.

Item No.	Item	Operation
ARMAMENT		
1	Canopy jettison control handle	Comply with the safety precautions relating to the positioning of the safety pins.
2	(a) Cartridge unit (b) Sealing washers.	} (1) Remove as detailed in Appendix 'F' to this Chapter. (2) Transport to Explosive storehouse.
3	Jettison gun	
4	Form 700	Endorse that the canopy jettison gun has been removed from the aircraft.

APPENDIX E

OPERATIONS WHEN REPLACING THE CANOPY JETTISON GUN

Safety precautions

1. All personnel are warned of the extreme danger of interfering with cartridge and detonator-operated jettison equipment. In no circumstances are tradesmen to work on items containing cartridge-operated ejection equipment without first ascertaining from the Armament Tradesman that it is safe to do so.
2. All types of ejection seat cartridges and detonators are to be removed and fitted by an Armament Tradesman only. Ejection seat primary, drogue gun and canopy cartridges are to be removed before the ejection seat is raised on the guide rails.
3. Before entering a cockpit or cabin to commence servicing on or near an ejection seat ALL tradesmen are to report to the Airframe N.C.O. immediately responsible for the aircraft and request that all safety pins be correctly positioned to ensure safety to the tradesman. This N.C.O. is the *only* person allowed to transfer the safety pins. The tradesman is to report to the N.C.O. again on completion of the servicing.

(A.L.24, Dec. 56)

Item No.	Item	Operation
ARMAMENT		
1	Canopy jettison gun	Obtain serviced item from the Armament Bay.
2	(a) Cartridge unit (b) Sealing washers.	} Obtain appropriate items from the Explosive storehouse.
3	Canopy jettison gun	
		(1) Ensure the indicator rod is protruding and that the firing pin is cocked.
		(2) Ensure that the No. 20 S.W.G. soft aluminium wire is fitted through the firing lever.
		(3) Fit.
		(4) Refit exhaust pipe and lockwire.
		(5) Reconnect the operating cable to the firing lever.
		(6) Examine for correct wire-locking.
4	(a) Cartridge unit. (b) Sealing washers.	} Replace as detailed in Appendix 'G' to this Chapter.
5	(a) Canopy jettison gun. (b) Canopy jettison control handle.	
6	Form 700	Comply with safety precautions relating to the positioning of the safety pins.
		Sign for replacing the canopy jettison gun.

APPENDIX F

OPERATIONS WHEN REMOVING THE CANOPY JETTISON CARTRIDGE

Safety precautions

1. All personnel are warned of the extreme danger of interfering with cartridge and detonator-operated jettison equipment. In no circumstances are tradesmen to work on items containing cartridge-operated ejection equipment without first ascertaining from the Armament Tradesman that it is safe to do so.

2. All types of ejection seat cartridges and detonators are to be removed and fitted by an Armament Tradesman only. Ejection seat primary, drogue gun and canopy cartridges are to be removed before the ejection seat is raised on the guide rails.

3. Before entering a cockpit or cabin to commence servicing on or near an ejection seat ALL tradesmen are to report to the Airframe N.C.O. immediately responsible for the aircraft and request that all safety pins be correctly positioned to ensure safety to the tradesman. This N.C.O. is the *only* person allowed to transfer the safety pins. The tradesman is to report to the N.C.O. again on completion of the servicing.

Item No.	Item	Operation
ARMAMENT		
1	Canopy jettison control handle	Comply with the safety precautions relating to the positioning of the safety pins.
2	Cartridge unit	(1) Cut the locking wire which secures the cartridge unit to the breech flange. (2) Remove cartridge unit and sealing washers.
3	Canopy jettison control handle	Comply with the safety precautions relating to the positioning of the safety pins.
Note . . .		
<i>This item is applicable only if servicing is to be done before the fitting of the cartridge.</i>		
4	Form 700	Endorse that the canopy jettison cartridge has been removed.

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APPENDIX G

OPERATIONS WHEN REPLACING THE CANOPY JETTISON CARTRIDGE

Safety precautions

1. All personnel are warned of the extreme danger of interfering with cartridge and detonator-operated jettison equipment. In no circumstances are tradesmen to work on items containing cartridge-operated ejection equipment without first ascertaining from the Armament Tradesman that it is safe to do so.
2. All types of ejection seat cartridges and detonators are to be removed and fitted by an Armament Tradesman only. Ejection seat primary, drogue gun and canopy cartridges are to be removed before the ejection seat is raised on the guide rails.
3. Before entering a cockpit or cabin to commence servicing on or near an ejection seat ALL tradesmen are to report to the Airframe N.C.O. immediately responsible for the aircraft and request that all safety pins be correctly positioned to ensure safety to the tradesman. This N.C.O. is the *only* person allowed to transfer the safety pins. The tradesman is to report to the N.C.O. again on completion of the servicing.

Item No.	Item	Operation
ARMAMENT		
1	Canopy jettison control handle	Comply with the safety precautions relating to the positioning of the safety pins.
2	Percussion head indicator rod	Ensure that the indicator rod protrudes, thus indicating that the jettison gun is cocked.
3	Firing lever shear wire	Ensure that the shear wire is fitted.
4	Cartridge unit	<ol style="list-style-type: none"> (1) Fit the sealing washers. (2) Ensure that the firing pin is not protruding. (3) Fit the cartridge unit and screw fully home. (4) Check the gap between inner edge of hexagon form and gun flange. This should not be more than $\frac{1}{8}$ in. <p>Note . . . <i>If the gap is greater than $\frac{1}{8}$ in. the cartridge unit is not screwed fully home.</i></p> <ol style="list-style-type: none"> (5) Lock the cartridge unit to the gun breech using No. 22 S.W.G. non-corrodible steel locking wire.
5	Canopy jettison control handle	Comply with the safety precautions relating to the positioning of the safety pins.
6	Form 700	Ensure that the date of the next change of cartridge is endorsed in red ink at the top of Page 1 and in the Change of Serviceability Log (Miscellaneous).

APPENDIX H

OPERATIONS AT THE MINOR, MINOR STAR AND MAJOR SERVICING OF THE AIRCRAFT

Safety precautions

1. All personnel are warned of the extreme danger of interfering with cartridge and detonator-operated jettison equipment. In no circumstances are tradesmen to work on items containing cartridge-operated ejection equipment without first ascertaining from the Armament Tradesman that it is safe to do so.
2. All types of ejection seat cartridges and detonators are to be removed and fitted by an Armament Tradesman only. Ejection seat primary, drogue gun and canopy cartridges are to be removed before the ejection seat is raised on the guide rails.
3. Before entering a cockpit or cabin to commence servicing on or near an ejection seat ALL tradesmen are to report to the Airframe N.C.O. immediately responsible for the aircraft and request that all safety pins be correctly positioned to ensure safety to the tradesman. This N.C.O. is the *only* person allowed to transfer the safety pins. The tradesman is to report to the N.C.O. again on completion of the servicing.

(A.L.24, Dec. 56)

Item No.	Item	Operation
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AIRFRAME

Servicing notes

- 1 Items No. 1 and 2 are applicable at Minor servicing only.
- 2 Item No. 3 is applicable at Minor Star and Major servicing only.

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|---|-----------------------------------|---|
| 1 | Canopy jettison mechanism | (1) Ensure that the Armament tradesman has removed the cartridge from the canopy jettison gun. |
| 2 | Canopy jettison mechanism | |
| | (a) Operating mechanism | } Examine for corrosion, distortion, damage, and security of attachment. |
| | (b) Mechanism jettison control. | |
| | (c) Canopy balance arm. | } Lubricate with oil OM-150. |
| | (d) Pivots. | |
| | (e) Canopy front locking catches. | } Examine for corrosion, damage, and security of attachment. |
| | (f) Operating rods. | |
| | (g) Hinges. | (1) Examine for corrosion, damage, and security of attachment.
(2) Lubricate with oil OM-150. |
| 3 | Canopy jettison mechanism | (1) In conjunction with the Armament tradesman, carry out a pneumatic functional check of the mechanism.
(2) On completion of functional check, reset linkage and canopy hinges. |

ARMAMENT.

Servicing notes

- 1 Items No. 3 and 4 are applicable at Minor servicing only.
- 2 Items No. 5 to 14 are applicable at Minor Star and Major servicing.
- 3 Items No. 6 to 12 are to be done in the Armament Bay.

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|---|---------------------------------------|--|
| 1 | Canopy jettison control handle | Comply with safety precautions relating to the positioning of the safety pins. |
| 2 | (a) Cartridge unit. | } (1) Remove as detailed in Appendix 'F' to this chapter.
(2) Transport to the Explosive storehouse. |
| | (b) Sealing washers. | |
| 3 | (a) Jettison gun. | (1) Clean.
(2) Examine for damage and security of attachment. |
| | (b) Percussion head. | (1) Ensure that the head is screwed tightly home.
(2) Ensure that the indicator pin is protruding to indicate correct cocking.
(3) Ensure that the 20 S.W.G. soft aluminium shear wire is fitted and intact.
(4) Examine for correct wire-locking to the gun body.
(5) Examine the spring cap for correct wire-locking to the percussion head. |
| | (c) Safety port. | (1) Ensure the plug is screwed tightly home.
(2) Examine for correct wire-locking to the barrel end cap. |
| 4 | (a) Operating cable | (1) Examine for corrosion, fraying, kinks, damage, correct routing, and security of attachment.
(2) Examine the pulley wheels for freedom of rotation and security of attachment. |
| | (b) Control handle. | (1) Clean.
(2) Examine for distortion, damage and security of attachment. |
| 5 | Jettison gun | Remove as detailed in Appendix 'D' to, this chapter. |

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Item No.	Item	Operation
6	(a) Jettison gun.	Ensure the cartridge unit is not fitted.
	(b) Percussion head.	Remove.
	(c) Spring retaining cap.	(1) Remove. (2) Clean. (3) Examine for damage.
	(d) Firing pin spring.	(1) Remove. (2) Clean. (3) Examine for cracks, corrosion, and damage.
	(e) Firing pin.	(1) Remove. (2) Clean. (3) Examine for cracks, corrosion, and damage.
	(f) Firing pin O-ring	(1) Remove. (2) Examine for damage.
	(g) Percussion head body.	(1) Clean. (2) Examine for damage. (3) Examine the firing lever for cracks, corrosion, and distortion. (4) Lubricate internally with grease XG-275.
7	(a) Firing pin O-ring (b) Firing pin. (c) Firing pin spring. (d) Spring retaining cap.	} Refit to percussion head body.
8	Safety port plug	(1) Remove. (2) Examine for corrosion and damage.
9	Exhaust pipe	(1) Remove. (2) Clean. (3) Examine the diaphragm for damage.
	(a) Actuator fork collar.	(1) Remove the locking screw from the thrust plate. (2) Remove the collar, the fork and the compression spring. (3) Clean the collar, fork and spring. (4) Examine for corrosion and damage.
	(b) Barrel end cap and piston tube.	(1) Unscrew. (2) Remove complete with piston tube. (3) Clean the barrel end cap and piston tube. (4) Examine for corrosion and damage.
	(c) Piston head.	(1) Examine for corrosion, scores and damage. (2) Examine the spigot for security of attachment.
	(d) Shock absorber.	Examine for damage.
	(e) Piston washers.	Examine for deterioration and damage.
10	Barrel	(1) Clean. (2) Examine for corrosion and damage. (3) Examine the trunnions for cracks and damage. (4) Examine the bore for scores and damage. (5) Lightly lubricate internally and externally with oil OM-15.
11	(a) Barrel end cap and piston tube. (b) Actuator fork spring. (c) Actuator fork and collar. (d) Locking screw. (e) Exhaust pipe. (f) Safety port plug. (g) Percussion head.	(1) Refit. Note . . . <i>Care is to be taken that the piston washers are not damaged as the piston head passes the exhaust port in the barrel.</i> (2) Lock the barrel end cap to the exhaust pipe nut with No. 22 S.W.G. non-corrodible steel wire. (3) Lock the safety plug to the percussion head with No. 22 S.W.G. non-corrodible steel wire.

Item No.	Item	Operation
12	Servicing Record Slips and Form 3592	Sign for completing Bay Servicing.
13	Jettison gun	Replace as detailed in Appendix 'E' to this chapter.
14	Jettison gun and canopy jettison mechanism	In conjunction with Airframe N.C.O., examine (by operation) for correct functioning as follows:— <ol style="list-style-type: none"> <li data-bbox="558 392 1332 481">(1) Request the Airframe N.C.O. and Airframe tradesman to be stationed on each mainplane to support the canopy when the canopy hinges are freed. <li data-bbox="558 481 1332 504">(2) Detail the Armament tradesman to be stationed in the cockpit. <li data-bbox="558 504 1332 560">(3) Fit a restraining leash to strong points in the cockpit to restrict the hood opening to 30 deg. <li data-bbox="558 560 1332 616">(4) Fit air pressure adapter to gun ◀ (Vol. 1, Part 2, Sect. 7, Chap. 2). ▶ <li data-bbox="558 616 1332 672">(5) Ensure pressure inlet valve is closed and connect compressed air supply. <li data-bbox="558 672 1332 694">(6) Request Armament tradesman in cockpit to pull jettison handle. <li data-bbox="558 694 1332 750">(7) Supply pressure at 80 to 100 lb. per sq. in., and ensure that the piston fully extends and canopy opens to 30 deg. <li data-bbox="558 750 1332 772">(8) Release air pressure. <li data-bbox="558 772 1332 862">(9) Request Armament tradesman in cockpit to remove restraining leash and ensure canopy hinges are freed when the canopy is opened to full position. <p data-bbox="598 862 694 884">Note . . .</p> <p data-bbox="598 884 1332 952"><i>Airframe N.C.O. and Airframe tradesman on each mainplane to support the canopy during this operation.</i></p> <ol style="list-style-type: none"> <li data-bbox="542 952 1332 1008">(10) Push the piston aft until the pressure plate butts against the barrel end cap. <li data-bbox="542 1008 1332 1030">(11) Request the Airframe N.C.O. to refit canopy. <li data-bbox="542 1030 1332 1052">(12) Remove the air pressure adapter. <li data-bbox="542 1052 1332 1075">(13) Rectify defects as necessary. <li data-bbox="542 1075 1332 1142">(14) Ensure the jettison gun is recocked and firing lever shear wire is renewed with 20 S.W.G. soft aluminium wire.
15	(a) Cartridge unit. (b) Sealing washers.	} <ol style="list-style-type: none"> <li data-bbox="558 1153 997 1176">(1) Obtain from Explosive storehouse. <li data-bbox="558 1176 1332 1232">(2) Comply with safety precautions relating to the positioning of the safety pins. <li data-bbox="558 1232 1212 1265">(3) Replace as detailed in Appendix 'G' to this chapter.
16	Form 700	Sign for completing Minor, Minor Star or Major servicing.

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