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PROPOSED LAYOUT **FILE IN VAU**
ARROW AIRCRAFT
DESCRIPTION AND MAINTENANCE INSTRUCTIONS

UNCLASSIFIED

UNLIMITED

PROPOSED LAYOUT OF
ARROW AIRCRAFT
DESCRIPTION AND MAINTENANCE INSTRUCTIONS

VOLUME	GROUP	PART	TITLE
1	GENERAL	1	General Information and Leading Particulars
		2	Airframe Structure
		3	Ground Handling
		4	Lubrication
2	LANDING GEAR	1	Landing Gear - General
		2	Landing Gear Hydraulics
		3	Landing Gear Electrics
		4	Wheels and Brakes
		5	Wheel Brake Hydraulics
		6	Wheel Brake Electrics
		7	Nose Wheel Steering
		8	Nose Wheel Steering Hydraulics
		9	Nose Wheel Steering Electrics
		10	Parabrake
3	FLYING CONTROLS	1	Flying Controls - General
		2	Mechanical Controls
		3	Hydraulic System
		4	Speed Brakes
4	FUEL SYSTEM	1	Fuel System - General
		2	Fuel System Electrics
		3	Fuel Quantity Indication System
5	AIR CONDITIONING	1	Air Conditioning System - General
		2	Air Conditioning Electrics
		3	Low Pressure Air System
6	UTILITY SYSTEMS	1	Utility Hydraulics Power Circuit
		2	Pitot Static System
		3	Oxygen System
7	COCKPIT CONTROLS AND INSTRUMENTS	1	Cockpit Controls
		2	Instruments
8	ENGINE AND RELATED SYSTEMS	1	Engine Installation
		2	Engine Electrical Services
		3	Fire Protection System
		4	Fire Protection Electrics
		5	Engine Intake and Ramp De-icing
		6	Accessories Drives and Gearboxes

VOLUME	GROUP	PART	TITLE
9	ESCAPE SYSTEM	1	Ejection Seats
		2	Canopies
		3	Canopies Electrics
		4	Canopy and Windscreen De-icing
10	ELECTRICAL	1	Electrical System-General
		2	Power Supplies
		3	Master Warning System
		4	Internal and External Lighting
		5	Missile Selection Circuits
11	MISSILE PACK	1	General Structure and Mechanical Controls
		2	Missile Pack Hydraulics
		3	Missile Pack Electrics
		4	Arming Procedure

VOL. 1 GENERAL PART 1 GENERAL INFORMATION AND LEADING PARTICULARS

Text

Illustrations

General breakdown of the D & M.I. giving a list of volumes and parts.
Brief description of the aircraft.
Procedures for entering the aircraft.
Safety precautions to be observed when entering and servicing the aircraft.
Leading Particulars.

Exploded view of major components.
3 View G.A.
Station Diagrams.
Access panel diagrams.
Illustrations of ground locks and ejection seat and canopy safety devices.
Charts of wiring symbols, pipeline identification, standard torque values.
Ground servicing connections.

VOL. 1 GENERAL PART 2 AIRFRAME STRUCTURE

Text

Illustrations

Description of the airframe structure with details for removing and installing structural components.

Illustrations to support the text showing use of special tools where applicable.

VOL. 1 GENERAL PART 3 GROUND HANDLING

Text

Illustrations

Instructions on jacking, levelling and towing the aircraft.
Installing covers and protective blanks.
Parking and picketting the aircraft.

As necessary to support the text. Illustrations showing the use of special ground handling equipment.

VOL. 1 GENERAL PART 4 LUBRICATION

Text and Illustrations in accordance with Proc 100-8.

VOL. 2 LANDING GEAR PART 1 LANDING GEAR - GENERAL

Text

Illustrations

Description and operation of the main and nose landing gear mechanical components including doors and fairings.
Rigging and adjustment of all mechanical components including mechanical adjustment of hydraulic jacks.

Illustrations to support the text comprising perspective GA, installation and exploded views.
Charts and diagrams to show servicing information.

VOL. 2 LANDING GEAR PART 1 LANDING GEAR - GENERAL (Cont'd)

Text

Removal and replacement of the landing gear, components and hydraulic jacks.

VOL. 2 LANDING GEAR PART 2 LANDING GEAR HYDRAULICS

Text

Description and operation of the landing gear hydraulic circuit.
Function testing the hydraulic circuit.
Removal and replacement of hydraulic components not covered in Vol. 2 Part 1.

Illustrations

Illustrations to support the text including schematics of the hydraulic circuit and components.

VOL. 2 LANDING GEAR PART 3 LANDING GEAR ELECTRICS

Text

Description and operation of the landing gear indication, actuation and warning circuits.
Removal and installation of electrical components.
Instructions for adjusting, servicing and testing the circuits.

Illustrations

Schematic and routing diagrams.
Illustrations in support of the adjusting instructions.
Location of electrical equipment with index of equipment.

VOL. 2 LANDING GEAR PART 4 WHEELS AND BRAKES

Text

Description and operation of the wheels, wheel brake mechanical controls and wheel brakes.
Servicing the wheels, wheel brakes and controls.
Removal and replacement of components.

Illustrations

Perspective views of the wheel brake mechanical controls and brake assemblies.
Exploded views of the main and nose wheels.
Illustrations showing adjustments.

VOL. 2 LANDING GEAR PART 5 WHEEL BRAKES HYDRAULICS

Text

Illustrations

Description and operation of the wheel brakes hydraulic circuit.
Servicing and testing the circuit.
Removal and replacement of selector valves and components.

Illustrations to support the text including schematics of the wheel brake hydraulic circuit.

VOL. 2 LANDING GEAR PART 6 WHEEL BRAKE ELECTRICS

Text

Illustrations

Description and operation of the electrically operated pre-retraction wheel braking circuits and anti-skid system.
Removal and installation of electrical components.
Instructions for servicing and testing the circuits and the system.

Schematic and routing diagrams.
Illustrations in support of the servicing instructions.
Location of electrical equipment with index of equipment.

VOL. 2 LANDING GEAR PART 7 NOSE WHEEL STEERING

Text

Illustrations

Description and operation of the mechanical controls and cable runs.
Servicing the control cables and mechanical components.
Removal and installation of the components.

Perspective views of the components and cable runs.
Illustrations of all adjustments.

VOL. 2 LANDING GEAR PART 8 NOSE WHEEL STEERING HYDRAULICS

Text

Illustrations

Description and operation of the nose wheel steering hydraulic circuit and hydraulic components.
Servicing and testing the hydraulic circuit components.
Removal and installation of components.

Diagrammatic illustrations of the circuit and components.

VOL. 2 LANDING GEAR PART 9 NOSE WHEEL STEERING ELECTRICS

Text

Description and operation of the electrical circuits of the nose wheel steering.
Removal and installation of electrical components.
Instructions for servicing and testing the electrical circuits.

Illustrations

Schematic and routing diagrams.
Illustration in support of the servicing instructions.
Location of electrical equipment with index of equipment.

VOL. 2 LANDING GEAR PART 10 PARABRAKE

Text

Description and operation of the parabrake, parabrake control cable and release mechanism.
Servicing the parabrake, testing the controls and release mechanism.
Removal and replacement of components.

Electric

Illustrations

Perspective views of the parabrake, controls and release mechanism.
Detailed illustrations showing parachute packing procedure and fitting the parachute in the aircraft.

VOL. 3 FLYING CONTROLS PART 1 FLYING CONTROLS - GENERAL

Text

General overall description of the complete flying control system.
Description of the modes of control.

Illustrations

Schematics and block diagrams showing the flying control system, modes of control and general interconnection between the electrical, mechanical and hydraulic systems.

VOL. 3 FLYING CONTROLS PART 2 MECHANICAL CONTROLS

Text

Description and operation of mechanical control system, control boxes and control surfaces.
Servicing and testing the mechanical controls.
Rigging of the controls.
Removal and installation of the control boxes, control surfaces and mechanically operated components.

Illustrations

Illustrations showing component layout and installation.
Schematics showing the operation of mechanical components.
Range of movement and rigging diagrams.

VOL. 3 FLYING CONTROLS PART 3 HYDRAULIC SYSTEM

Text

Illustrations

Description and operation of the system and components.
Function testing, filling and priming the system.
Removal and installation of hydraulic components.

Schematics of the system and components.
Illustrations showing component layout and installation.

VOL. 3 FLYING CONTROLS PART 4 SPEED BRAKES

Text

Illustrations

Description and operation of the speed brakes.
Description and operation of the speed brake hydraulic circuit.
Rigging the speed brakes.
Testing and servicing the hydraulic circuit.
Removal and replacement of the speed brakes and hydraulic components.
Description and operation of the speed brake electrical circuit.
Servicing and testing the electrical circuit.

Illustrations to support the text including schematics of the hydraulic circuit, rigging charts and schematics of the electrical circuit.

VOL. 4 FUEL SYSTEM PART 1 FUEL SYSTEM - GENERAL

Text

Illustrations

Description and operation of the tanks, the system and mechanical components.
Tank pressurization.
Refuelling and defuelling.
Sealing of the fuel tanks.
Testing and servicing the system.
Removal and replacement of system components.

Schematics of the system and components.
Illustrations showing installation, component layout and sealing methods.

VOL. 4 FUEL SYSTEM PART 2 FUEL SYSTEM ELECTRICS

Text

Illustrations

Description and operation of the electrical circuits of the tank sequencing system and other circuits of the fuel systems. Removal and installation of electrical components. Instructions for servicing and testing the circuits and the system.

Schematic and routing diagrams. Illustrations in support of the servicing instructions. Location of equipment illustration with index of equipment.

VOL. 4 FUEL SYSTEM PART 3 FUEL QUANTITY INDICATION SYSTEM

Text

Illustrations

Description and operation of the electrically operated fuel quantity indication system. Removal and installation of components units. Instructions for servicing and testing the system.

Schematic and routing diagrams. Illustrations in support of the servicing instructions. Location of equipment illustration with index of equipment.

VOL. 5 AIR CONDITIONING PART 1 AIR CONDITIONING SYSTEM - GENERAL

Text

Illustrations

Description and operation of the system and components. Cabin pressure testing. Servicing and testing the air conditioning system. Removal and installation of system components.

Perspective views of component installation, schematics of the system and components, component layout diagrams and pressurization graph.

VOL. 5 AIR CONDITIONING PART 2 AIR CONDITIONING ELECTRICS

Text

Illustrations

Description and operation of the electrical circuits of the air conditioning system. These include:

- (a) Cockpit temperature control.
- (b) Equipment area temperature control.
- (c) Cooling turbine inlet temperature control.

Schematic and routing diagrams. Illustrations in support of the servicing instructions. Location of equipment illustration with index of equipment.

VOL. 5 AIR CONDITIONING PART 2 AIR CONDITIONING ELECTRICS

Text (Cont'd)

- (d) Inlet pressure and temperature sensing circuit.
- (e) Cabin pressure warning and relief circuits.

Removal and installation of electrical components.
Instructions for servicing and testing the circuits.

VOL. 5 AIR CONDITIONING PART 3 LOW PRESSURE AIR SYSTEM

Text

Illustrations

Description and operation of the system and components.
Testing and servicing the system including the canopies seals.
Removal and installation of system components.

Illustrations to support the text including schematics of the system and components.

VOL. 6 UTILITY SYSTEMS PART 1 UTILITY HYDRAULICS POWER CIRCUIT

Text

Illustrations

Description and operation of the power circuit including the circuits serving the emergency AC hydraulic motor and the ram air turbine jack.
Testing and servicing the circuit.
Removal and installation of components.

Schematics of the circuits and components.
Component layout diagram and illustrations to facilitate servicing.

VOL. 6 UTILITY SYSTEMS PART 2 PITOT STATIC SYSTEM

Text

Illustrations

Description and operation of the pitot static system.
Testing and servicing the system.
Removal and installation of components.

Schematics of the system and component layout diagram. Illustrations showing the use of servicing equipment.

VOL. 6 UTILITY SYSTEMS PART 3 OXYGEN SYSTEM

Text

Illustrations

Description and operation of the liquid oxygen system including the electrical quantity indication system. Testing and servicing the system and the electrical circuit. Removal and installation of components.

Schematics of the system and component layout diagrams. Illustration showing installation of the converter.

VOL. 7 COCKPIT CONTROLS PART 1 COCKPIT CONTROLS AND INSTRUMENTS

Text

This section will comprise illustrations showing front and rear cockpit layouts.

VOL. 7 COCKPIT CONTROLS PART 2 INSTRUMENTS AND INSTRUMENTS

Text

Illustrations

Description and operation of the following instruments:

- (a) J4W Compass.
- (b) Skin temperature indication.
- (c) Mach/Airspeed Indicator.
- (d) Altimeter.
- (e) Accelerometer.
- (f) Turn and slip indicator.
- (g) Rate of climb indicator.
- (h) Beta (side slip) indicator.
- (j) Alpha (Angle of attack) indicator.
- (k) Standby compass.

Removal and installation of units. Instructions for servicing and testing.

Where required, schematic and routing diagrams. Illustrations in support of the servicing instructions. Location of equipment illustration.

VOL. 3 ENGINE AND PART 1 ENGINE INSTALLATION
RELATED SYSTEMS

Text	Illustrations
Description and operation of the engine suspension, engine cooling and service connections.	Illustrations showing engine suspension and service connections.
Removal and installation of the engines.	Schematics of the oil and cooling systems.
Engine starting and ground testing.	Illustrations showing the use of engine installation equipment.
Safety precautions and the use of special ground equipment.	

VOL. 3 ENGINE AND PART 2 ENGINE ELECTRICAL SERVICES
RELATED SYSTEMS

Text	Illustrations
Description and operation of the following electrical circuits:	Schematic and routing diagrams for each circuit.
(a) Engine motoring, starting and ignition.	Illustrations in support of the servicing instructions.
(b) Relight circuits.	Location of equipment illustration with index of equipment.
(c) Percentage thrust indication.	
(d) Oil and fuel pressure warning circuits.	
(e) Variable stator control circuit.	
(f) Normal and Emergency fuel control and indication circuits.	
(g) Low pressure compressor rotor overspeed circuit.	
(h) Afterburner control circuit.	
Removal and installation of component units.	
Instructions for servicing and testing the circuits.	

VOL. 8 ENGINE AND PART 3 FIRE PROTECTION SYSTEM
RELATED SYSTEMS

Text

Illustrations

Description of the fire isolation and fire extinguishing system.
Servicing the system.
Removal and installation of the supply unit.

Illustration showing the system and supply unit installation.
Schematic showing isolation areas.

VOL. 8 ENGINE AND PART 4 FIRE PROTECTION ELECTRICS
RELATED SYSTEMS

Text

Illustrations

Description and operation of the electrical circuits of the fire protection system.
Removal and installation of electrical components.
Instructions for servicing and testing the circuits.

Schematic and routing diagrams.
Illustrations in support of the servicing instructions.
Location of equipment illustrations with index of equipment.

VOL. 8 ENGINE AND PART 5 ENGINE INTAKE AND RAMP DE-ICING
RELATED SYSTEMS

Text

Illustrations

Description and operation of the electrically controlled and operated intake and ramp de-icing system.
Removal and installation of component units and equipment.
Instructions for servicing and testing the equipment.

Schematic and routing diagrams.
Illustrations in support of the servicing instructions.
Location of equipment illustration with index of equipment.

VOL. 8 ENGINE AND PART 6 ACCESSORIES DRIVES AND GEARBOXES
RELATED SYSTEMS

Text

Illustrations

Description and operation of the accessories gearbox, fuel pump drive shaft and disconnects.
Description and operation of the lubrication system and constant speed drive lubrication system.
Servicing the gearboxes and drives.
Removal and installation of the gearboxes and components.

Illustrations showing installation of components and component layouts.
Schematics of the drives and oil system.

VOL. 9 ESCAPE SYSTEM PART 1 EJECTION SEATS

Text

Illustrations

Description and operation of the seat, ejection gun and control mechanism.
Packing the drogue and servicing the control mechanism.
Removal and installation of the cartridges, ejection gun, seat and drogue gun.

Perspective views of the seat and components.
Illustrations showing drogue packing procedure.

VOL. 9 ESCAPE SYSTEM PART 2 CANOPIES

Text

Illustrations

Description and operation of the canopies opening mechanism and emergency opening mechanism.
Servicing and testing the canopies mechanism and emergency cable system.
Removal and installation of the canopies and components.

Illustrations to show canopy installation and operation mechanism.
Schematics of the canopy and locking handle operation.

VOL. 9 ESCAPE SYSTEM PART 3 CANOPIES ELECTRICS

Text

Illustrations

Description and operation of the canopy actuation and seal valve circuits.
Removal and installation of electrical components.
Instructions for servicing and testing the circuits.

Schematic and routing diagrams.
Illustrations in support of the servicing instructions.
Location of equipment illustration with index of equipment.

VOL. 9 ESCAPE SYSTEM PART 4 CANOPY AND WINDSHIELD DE-ICING

Text

Illustrations

Description and operation of the electrically controlled and operated de-icing system for the canopy and the windshield.
Removal and installation of component units.
Instructions for servicing and testing the system.

Schematic and routing diagrams.
Illustrations in support of the servicing instructions.
Location of equipment illustration with index of equipment.

VOL. 10 ELECTRICAL PART 1 ELECTRICAL SYSTEM - GENERAL

Text

Illustrations

Information pertaining to electrical wiring, bonding, insulation and diagrams. Tables presenting bonding and insulation resistance limits and the power consumption of electrical units on the aircraft.

Illustrations of all circuit breaker, fuse and relay panels which are common to more than one sub-system. Electrical components and controls in the front cockpit and the rear cockpit with associated indices of equipment.

VOL. 10 ELECTRICAL PART 2 POWER SUPPLIES

Text

Illustrations

Description and operation of the AC and DC supply sources and associated regulation, control and fault devices. Removal and installation of component units. Instructions for servicing and testing the circuits.

Schematic and routing diagrams. Illustrations in support of the servicing instructions. Location of equipment illustrations with associated indices of equipment.

VOL. 10 ELECTRICAL PART 3 MASTER WARNING SYSTEM

Text

Illustrations

Description and operation of the circuits and components of the master warning system. Removal and installation of component units. Instructions for servicing and testing the system.

Schematic and routing diagrams. Location of equipment illustrations with index of equipment.

VOL. 10 ELECTRICAL PART 4 INTERNAL AND EXTERNAL LIGHTING

Text

Illustrations

Description and operation of the internal and external lighting circuits. Removal and installation of component units. Instructions for servicing and testing the circuits.

Schematic and routing diagrams. Illustrations in support of the servicing instructions. Location of equipment illustration with index of equipment.

VOL. 10 ELECTRICAL PART 5 MISSILE SELECTION CIRCUITS

Text	Illustrations
Description and operation of the missile selection circuits. Instructions for servicing and testing the circuits.	Schematic and routing diagrams. Illustrations in support of the servicing instructions. Location of equipment illustration with index of equipment.

VOL. 11 MISSILE PACK PART 1 GENERAL STRUCTURE AND MECHANICAL CONTROLS

Text	Illustrations
General description of the missile pack. Description and operation of the missile doors and mechanical extension mechanism. Servicing and testing the extension mechanism including jack rod adjustments. Removal and installation of mechanical components. Removal and installation of the missile pack.	G.A. of the pack, schematics showing the operation of the extension mechanism and doors.

VOL. 11 MISSILE PACK PART 2 MISSILE PACK HYDRAULICS

Text	Illustrations
Description and operation of the missile pack hydraulic system and components. Servicing and testing the system. Removal and installation of hydraulic components.	Schematic of the hydraulic system and component location diagrams.

VOL. 11 MISSILE PACK PART 3 MISSILE PACK ELECTRICS

Text	Illustrations
Description and operation of the missile pack electrical circuits. Instructions for servicing and testing the circuits.	Schematic and routing diagrams and, if required, illustrations in support of the servicing instructions. Location of electrical equipment illustration with index of equipment.

VOL. 11 MISSILE PACK PART 4 ARMING PROCEDURE

Text

Instructions for loading the
missiles into the pack.
Disarming procedures.
Safety precautions to be
observed when arming and
servicing the pack.

Illustrations

Illustrations showing the use of
equipment required for loading the
missiles.

