

QCX
Avro
CF105
72 GEQ
11 Add.

ANALYZED

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Classification cancelled / Changed to UNCLASS

By authority of AVRS

Date 30 Sept 86

Signature [Signature]

Unit / Rank / Appointment AVRS E

ARROW 2

PROPOSED DETAILED PROGRAMME

FOR

DEMONSTRATION & EVALUATION CONFERENCE

ON

GROUND SUPPORT EQUIPMENT

ADDENDUM TO

REPORT NO. 72/GEQ/11

NRC - CISTI
J. H. PARKIN
BRANCH

JUN 8 1995

ANNEXE
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Authorized

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ENGINEERING DIVISION

AVRO AIRCRAFT LTD. MALTON, ONTARIO



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<u>Chapter</u>	<u>Subject</u>
1	Programme summary.
2	Method & extent of demonstration
3	Equipment required for each period
4	List of equipment; drawing numbers; space required



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PROGRAMME

GROUND EQUIPMENT DEMONSTRATION

1. INTRODUCTION

The following detailed programme is proposed for the RCAF Ground Equipment Demonstration.

This is complimentary to Avro Report 72/GEQ/11 and includes certain revisions to cover detail program timings; missile handling equipment by Canadair; and the following items:

- Item 187, Maintenance platform
- Item 195, Support, Aileron & Elevator
- Item 256, Panel test, canopy and windscreen de-icing
- Item 224, Panel test, engine de-icing
- Item 247, Panel test, fire extinguisher

A list of Canadair equipment for missile handling is not included although time has been allowed for this in the programme.

2. The suggested form of the demonstration is that of a scheduled discourse by demonstrators. Discussion at the end of each day would resolve requests for repeat demonstrations. These would be held on the final day but one.
3. It is anticipated that RCAF will appoint specialist observers for each period in view of the limited access in many cases.

The static equipment will be available continuously for observers not participating in particular periods.

4. Photography is required to cover points likely to be referred for discussion; this will facilitate reference in cases not covered by drawings or brochures.



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PROGRAMME SUMMARY

1st. DAY

09.00 - 09.30

RCAF Staff briefing
Official welcome

Period 1

09.30 - 12.30

- a) External aircraft inspection ✓
- b) Replacement of liquid oxygen ✓
- c) Recharging emergency oxygen ✓
- d) Jacking-single wheel ✓

Period 2

13.30 - 17.00

- a) Weapon pack hoisting ✓
- b) Missile handling ✓
- c) Cockpit pressurization test ✓

2nd. DAY

Period 3

09.00 - 12.30

- a) Towing ✓
- b) Engine start & brief run ✓
- c) Air condition system test ✓
- d) Refuel ✓
- e) Re-oil ✓

Period 4

13.30 - 17.00

- a) Defuel & fuel quantity test ✓
- b) Jacking-complete aircraft ✓
- c) Nitrogen charging of accumulators ✓
- d) Operation of hydraulic test rig ✓
- e) Top up hydraulic system ✓

3rd. DAY

Period 5

09.00 - 12.30

- a) Pitot static system test
- b) Damper system test
- c) Panel de-icing test
- d) Panel, fire extinguisher test
- e) Panel, canopy & W/S de-icing test

Period 6

- a) Recharge liquid oxygen convertors
- b) Repeat of demonstrations - if any
- c) Static displays

4th DAY

A.M. & P.M.

09.00 - 17.00

General meeting

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METHOD & EXTENT OF DEMONSTRATION

A.M. 1st. DAY

Period 1

External Aircraft Inspection

09-30-11-15

Inspection of access ladders; maintenance platforms; control and undercarriage locks; engine inlet and outlet covers etc. The demonstrator will point out each item; invite any observer to remove and replace it.

11.15 - 11.35

Replacement of Liquid Oxygen Converter

A demonstrator will collect the spare liquid oxygen converters; carry it to upper fuselage via cockpit access platform, and install it in the aircraft. Six observers only are invited to participate at a time.

11.35 - 12.00

Recharging Emergency Oxygen

The demonstrator will show the installation of the emergency oxygen bottle in each seat; exhibit the adaptor & ground trolley; make connection and refill. 6 observers only are invited at a time; 2 on each of two cockpit access stands, 2 on upper fuselage.

12.00 - 12.30

Jacking - Single Wheel

Nose and main wheel jacking for wheel changing.

P.M. 1st DAY

Period 2

Weapon Pack Hoisting

13.30 - 14.00

The weapon pack hoist trolley will be positioned under the fuselage; it will be described by the demonstrator and then used for a weapon pack removal. Observers will be invited to make inspection. The weapon pack will then be replaced on the aircraft.

14.00 - 15.30

Missile Handling Equipment

Brief description of equipment for assembling and handling missiles by Canadair. During this period the weapon pack will be removed from aircraft to tarmac for towing demonstration of manoeuvrability.

15.30 - 16.00

Weapon Pack Towing

The weapon pack on the hoist trolley will be towed around the tarmac to demonstrate manoeuvrability.

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METHOD & EXTENT OF DEMONSTRATION (Cont'd)

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16.00 - 16.30

Cockpit Pressurization Test

The GFE cabin pressure rig 4G/2374 will be introduced; connected to the aircraft and a cockpit pressure test carried out.

16.30 - 17.00

Discussion & Photography as Necessary

A.M. 2nd. DAY

Period 3

Towing

09.00 - 10.00

A tractor, "Unitow" Type D8, modified to carry intercom. and steering warning signals will be connected with tow bridle, standing outside D1 hangar. A short tow will be made (100 feet); the bridle removed and tow bar connected. The intercom. and steering warning device will be described and demonstrated. The aircraft will then be towed about $\frac{1}{2}$ mile to the engine run site.

10.00 - 10.30

Air Condition System Test

The interim vehicle comprising air conditioner unit and 400 cycle AC generator will be introduced at the engine run site. This is a modified MA-2 USAF Truck for Arrow 1 use. A similar truck of improved and increased performance will be used for Arrow 2. A brief description of the vehicle will be given; the vehicle connected and operated. This will be followed by a description of air condition system test set, for the operation of which an engine run is necessary.

10.30 - 11.15

Engine Start & Run

The Jeep mounted gas turbine driven compressor to be used is the interim model. The compressor for RCAF use will be packaged for mounting on castors or standard RCAF truck. This interim unit will be described; connected and engine started. The air conditioner/AC generator will be connected to simulate normal procedure although this is not essential for engine starting if ASTRA is switched off. DC power and single phase 115 volts is supplied from the starter via the nose leg receptacle.

11.15 - 12.00

Refuel

The aircraft fuel system will be outlined and the truck refueling described. This is a type D38-C55 for interim use. The refueling sequence will be described; the master control, panel and selector panel pointed out; refueling truck connected and aircraft refueled in two stages to illustrate partial refuel and full refuel.

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METHOD & EXTENT OF DEMONSTRATION (Cont'd)

11.15 - 12.00

Refuel

Hoses will be disconnected; refuel panels closed and refueling tender removed.

12.00 - 12.30

Re-oil

The oil replenishment rig will be described; oil system outlined; access panel opened; rig connected and replenishment made of engine and gear boxes.

12.30 - 13.30

During lunch the aircraft will be repositioned at rear of hangar D 1 for defuel demonstration, using shop air and tender suction.

Period 4

Defuel and Fuel Quantity Test

P.M. 2nd. DAY

The aircraft will be defuelled using shop air connected to the tank pressurization system and gravity feed into the refuel truck. The fuel quantity indication set will be shown, described and used at an intermediate stage during defueling and again on completion of the operation. The fuel capacitance test set (HT 109) will be described but not demonstrated as this is a piece of CFE in current use.

13.30 - 14.15

14.15 - 14.30

Move Into D1 for Jacking

14.30 - 14.50

Jacking Complete Aircraft

This operation will be self evident. The application of GFE 20 ton jacks for Arrow use will be shown.

METHOD & EXTENT OF DEMONSTRATION (Cont'd)

14.50 - 15.10

Nitrogen, Charging Accumulators

The compressor will be described; connected and operated for charging the hydraulic system accumulators and emergency undercarriage bottle with nitrogen. The alternative mode for supplying compressed air will also be demonstrated.

15.10 - 15.20

Topping Up the Hydraulic System

This will be demonstrated using the GFE filler and bleeder unit.

Period 4Operation of Hydraulic System

15.20 - 16.40

The various operating modes of the test stand will be described. Coloured line diagrams will be available. The various modes are summarized:

Mode 1. Prime aircraft utility system

Mode 2. Operate utility system

- (a) Undercarriage retraction
- (b) Air brake operation
- (c) Fill aircraft utility compensator

Mode 3. Prime flying control system

Mode 4. Operate flying control systems

- (a) Operate ailerons, elevators and rudder
- (b) Operate nose wheel steering
- (c) Fill aircraft flying control system compensators.



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METHOD & EXTENT OF DEMONSTRATION (Cont'd)

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Period 5Pitot static system test & Damper testA.M. 3rd. DAY

09.00 - 11.00

The pitot static system tester will be introduced and demonstrated.

This will be followed by a description of the damper test equipment and a demonstration covering the 1st line pre-flight tests to determine serviceability and localize defective components.

Damper First Line Test EquipmentGeneral

The Damper Test Equipment consists of the D-UG6004A Damper Test Set which is 17 x 18 x 10, and weighs approximately 40 lbs., and D-UG6005A Damper Auxilliary Test Set, of approximately same size and weight. The Damper Test Set provides a convenient means of checking the Damper on the Avro Arrow and presents the serviceability of the Damper as a series of "good" or "Bad" readings on a go-no-go meter as a pair of selector switches are rotated in sequence. Where a "no-go" reading is obtained the Damper Auxilliary Test Set will be used to isolate the fault.

In order to check the Damper, the inputs from the Sensors to the Amplifier Calibrator are removed and the Damper Test Set connected to the inputs to the Amplifier Calibrator.

Operation of D-UG6004A

The D-UG6004A Damper Test Set consists of a source of step and pulsed 400 cycle voltage, an Amplifier Calibrator input selector, and a bridge circuit for measuring control surface deflection. By merely rotating an input selector, a signal of the proper amplitude is applied to the position of the Damper bridge selected, simultaneously applied to the qc scheduler equivalent to a desired qc value. This will cause the control surface to deflect to some predetermined angle which will be measured by the bridge circuit. One arm of the bridge circuit is a surface position pickoff potentiometer whose wiper is mechanically connected to the control surface and whose output voltage is therefore proportional to the surface deflection. The other arm of the bridge is a voltage divider whose output is a voltage corresponding to the desired surface deflection. The voltage from the two arms of the bridge are applied to the go-no-go meter which indicates the difference between these voltages. The green area at the centre of the meter marked "Good" always represents the allowable limits of system performance. Testing time will be approximately 30 minutes, when the damper is operating properly.

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METHOD & EXTENT OF DEMONSTRATION (Cont'd)

Period 5

Operation of D-UG6005A

A.M. 3rd DAY

09.00 - 11.00

Where a "no-go" reading is obtained, the D-UG6005A will be used. It must be used with the D-UG6004A Damper Test Set from which it obtains power, and will allow the measurement of sensor null voltages and servo control currents. It also provides facilities for injecting manually controlled signal and qc voltages into the Damper. The judicious use of the two test sets will allow fault detection and isolation to various parts of the Damper such as the Amplifier Calibrator, the Hydraulic system or to sensors that can be made to give an output. There is no easy method at present of checking sensors (such as accelerometers whose outputs are near zero) while mounted in the aircraft. The best thing that can be done is to measure null voltages.

11.00 - 12.00

Panel, de-icing Test item 244, will be introduced but not demonstrated as the aircraft system will be inoperative. Panel, canopy & W/S de-icing plus panel fire extinguisher test will be introduced, described and demonstrated.

12.00 - 12.30

Discussion and Photography as Requested

Period 6

Recharge liquid oxygen convertors; Repeat demonstrations and Static Display

P.M. WEDNESDAY

13.30 - 13.45

Demonstration of trailer, liquid oxygen; filling of convertor and operation of vacuum pump for exhausting vacuum insulation of storage tank.

13.45 - 15.45

Repeat demonstrations - if any

15.45 - 16.30

Static Display

The items listed in Appendix "B" will be identified; leading particulars and functions described.

EQUIPMENT FOR EACH PERIOD

The equipment for each period will be identified with a firmly attached card supplied by Equipment Design.

Period 1

a) External Aircraft Inspection

107 (a) Staircase 4G/2985

107 (a) Ladder 4G/3254

107 (c) Maintenance platform GFE modified

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EQUIPMENT FOR EACH PERIOD (Cont'd)Period 1

146 Maintenance platform 4G/1956 (3-7 feet)
147 12 12 4G/2614 (7-12 feet)
148 12 12 4G/1230 (13-20 feet)
187 12 12 fuselage
144 chocks
145A lock, aircraft nose leg
145B 12 12 main leg
149 mat duct walkway (air intakes)
150 mat wing, walkway, one set rubber; one set wood
152A Cover engine intake
153A 12 12 exhaust
154A 12 air condition inlet
155A 12 12 12 outlet
156 Cover canopy
175A Cover, pitot head
175B Handling pole, pitot cover
185 Discharger, electro-static
195 Support, aileron and elevator

b) Replacement of Liquid Oxygen Converter

122 Trailer, transportation of liquid oxygen converter, spare liquid oxygen converter, fully charged.

c) Recharging Emergency Oxygen

Both aircraft seats in position.

176 Adaptor, emergency oxygen charging.

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EQUIPMENT FOR EACH PERIOD (Cont'd)

Period 1

c) Recharging Emergency Oxygen

169 Trailer, gaseous oxygen, breathing with 30 ft. oxygen hose.

d) Jacking=Single Wheel

129A Jack, flat base, main gear

129B " " " nose gear

132 Adaptor jacking, nose

130 Strap, retaining, main landing bogey

Period 2

a) Weapon Pack Hoisting

109 Tractor (or similar-max height 60")

112 Hoist, weapon pack

b) Missile Handling

NOTE:

Canadair equipment to be added.

c) Cockpit Pressurization Test

229, Pressure Tester, aircraft cabin 4G/2374

233, Tool, Canopy locking (two types)

Period 3

a) Towing

109 Tractor

110 Tow bar (use on route to run-up area

111 Bridle

b) Engine Start and Run

101A Starter engine air turbine

102A Air conditioner/AC Generator

107B Ladder cockpit access

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EQUIPMENT FOR EACH PERIOD (Cont'd)Period 3Engine Start and Run

144 Chocks

173 Tie down bar, engine run up

172 Cushion set, ear, anti-noise

c) Air condition system test

102A Air conditioner/AC Generator

232 Panel, air condition test

d) Refuel

187 Access stands or similar

108 Truck, tank refuel

101A Starter

OR

102A Air conditioner/AC power generator

e) Re-oil

143, dispensing pump, oil

Period 4a) Defuel & fuel quantity test

108 Truck defuel (to take 2100 gls.)

Shop air (from fuel laboratory)

160 Fuel quantity indication set

260 H.T. 109 Fuel capacitance test set

261 Leads, connecting for HT 109

b) Jacking-complete aircraft128 Jack Triped-20 ton³ off

131A Adaptor, jacking nose

131B " " wing



EQUIPMENT FOR EACH PERIOD (Cont'd)

Period 4

- c) Nitrogen, charging accumulators
103A, compressor, air/nitrogen
- d) Topping up hydraulic system
105 Filler and bleeder hydraulic system (GFE)
- e) Operation of Hydraulic Testing
168 Stand, test hydraulic system
174 Gauge, air H.P. 0-3000 (nose U/C)
401 Pump hand for U/C struts.

Period 5

- a) Pitot static system test
235 Test equipment, pitot static
- b) Damper system test
102 Air conditioner/AC generator
168 Stand test hydraulic system
181 Development test equipment
(including: Damper test set
Damper aux..test set
Pitot=static tester
G-limiter test
244 Panel, de-icing test.
247 Panel, fire extinguisher test
256 Panel, canopy and windshield de-icing test.



APPENDIX 18A18

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LIST OF ACTIVE DISPLAY ITEMS

REF.	DRAWING NO. OR BROCHURE	ITEM	SIZE	QTY.	REMARKS
101A	N11	Starter, Engine, Air Turbine		1	
102A	N11	Air Conditioner and Generator AC and DC		1	
103A	Brochure	Compressor, Air or Nitrogen (Electric)	7x5½x5	1	
105	551664	Filler and Bleeder, Hydraulic System.	3x3x3	1	
107A	7-2700-8	Staircase, Aircraft Boarding 4G/2985	14x8	2	
107B	600839	Ladder, Aircraft Boarding 4G/3254	12½x7x15	1	
107C	40/649	Maintenance Platform Adjustable		1	
108	N11	Truck, Tank (Refueling)	30x8x10	1	
109	551628 and 9	Tractor, Aircraft Towing	10x8x5½	1	
110	7-2700-7	Towing Equipment - Bar	15x2½x1	1	
111	551614	Towing Equipment - Bridle		1	
112	7-2700-45	Hoist, Missile Pack	16x10	1	
122	551615	Trailer, Liquid Oxygen Converter	8x4x4	1	
128		Jack, Tripod, 20 Ton	6½x5½	3	
129A)	Midland Fdry.	Jack, Flat Base (Main Gear)		1	
129B)	32A and 32B	Jack, Flat Base (Nose Gear)		1	
130	7-2700-35	Strap Retaining, Main Landing Gear Bogey.		1	

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	DRAWING NO. OR BROCHURE	ITEM	SIZE	QTY.	REMARKS
131A	7-2700-19	Adaptor, Jacking Nose		1	
131B	7-2700-21	Adaptor, Jacking Wing		1	
132	7-2700-15	Adaptor, Jacking Nose L/C		1	
143	GFE	Dispensing Pump, Oil	5x3x3	1	
144	7-2700-33	Chocks, Wheel		4	
145A	7-2700-37	Lock, Aircraft, Nose L/G		1	
145B	7-2700-36	Lock, Aircraft, Main L/G		2	
146		Maintenance Platform (4G/1596)	8x4 $\frac{1}{2}$ x7	2	
147		Maintenance Platform (4G/2614)	8x4 $\frac{1}{2}$ x12	2	
148		Maintenance Platform (4G/1230)	16x10x20	1	
149	7-2700-29	Mat, Duct Walkway		2	
150	7-2700-39	Mat, Wing		2 sets 1 Rubber/1 wooden made by Expt ¹	
152A	7-2700-23	Cover, Engine Intake		2	
153A	7-2700-28	Cover, Engine Exhaust		2	
154A	7-2700-40	Cover, Air Conditioning Inlet		2	
155A	7-2700-42	Cover, Air Conditioning Outlet		1	
156	7-2700-26	Cover, Canopy		1	
166	Brochure	Fuel Quantity Indication Test Set	2x1x1	1	
168	Brochure	Stand, Test Hydraulic System	9x6x6	1	
	G.F.E.	Trailer, Gaseous Oxygen Supply		1	
172		Cushion Set, Ear, Anti-Noise		10	
173	7-2700-46	Tie Down Bar, Engine Run-up		1	
174		Air, H/P Gauging Device		1	

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	DRAWING NO. OR BROCHURE	ITEM	SIZE	QTY.	REMARKS
175A	451851	Cover Pitot Head		1 set	
175B	255658	Handling Pole, Pitot Cover		1	
176		Adaptor, Emergency Oxygen Charging		2	
181	Brochure	Developmental Test Equipment for Damping System consisting of:		1 set	
	Brochure	a) Damper Test Set 406004A-1		1	
	Brochure	b) Damper Aux. Test Set UG6005A-1		1	
	Brochure	c) Pitot Static Tester Type 382		1	
	Brochure	d) "G" Limiter Test Set UG6006A-1		1	
		Discharger, Electro Static		1	
187	600834	Maintenance Platform, Fuselage	2x2x3	1	
195	551657	Support, Aileron and Elevator	2x2x1	2	
229	4G/2374	Pressure Tester, Aircraft Cabin	5x3x5	1	
232	7-2700-47	Panel, Air Conditioning Test		1	
233	551698	Tool, Canopy Locking		1	
235	Brochure	Test Equipment, Pitot Static	2x1x1	1	
244	551654	Panel, De-Icing Test		1	
* 245A	551659	Panel, Electrical Power Test		1	Superceeded
247	551662	Panel, Fire Extinguisher Test		1	
248	551665	Panel, Canopy and Windscreen De-Icing Test	2x2x1	1	
260& 261	Brochure	HT 109, Fuel Cap. Test Set and Leads		1	

* Item will not be available.

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APPENDIX "B"

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LIST OF STATIC DISPLAY ITEMS

REF.	DRAWING NO. OR BROCHURE	ITEM	SIZE	QTY.	REMARKS
113		Trailer, Lift Sparrow Missile	14x3x3	1	
121		Sling, Missile Pack			
123		Trailer, Liquid Oxygen Storage	6x4x4	1	
124	G.F.E.	Rotary Vacuum Pump for above Trailer		1	
* 127	7-2700-6	* Sling, Complete Aircraft		1	
158A	7-2700-55	Cover and Sling, Radome, Arrow 1		1	
178		Air, Medium Pressure Gauging Device (0-400 psi)		1	
211		Sling A/C Maintenance			
		* a) Outer mainplane			
		* b) Inner mainplane			
		* c) Fin Arrow			
		d) Station 255 (nose lift - Arrow)		1	
		* e) Centre Fuselage			
		* f) Front Fuselage			
		* g) Engine Bay			
		* h) Duct Day			
		* i) Radar pack			
		* j) Rudder		1	
		* k) Rudder Control Box		1	
		* l) Elevator		1	

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REF.	DRAWING NO. OR BROCHURE	ITEM	SIZE	QTY.	REMARKS
		* m) Elevator Control Box		1	
		* n) Aileron		1	
		* o) Aileron Control Box		1	
		* p) Air Condition Pack		1	
		* q) Tail Cone		1	
212		* Trailer, Main Gear Lift		1	
213		* Trailer, Nose Gear Lift		1	
223	551636	Sling, Elevator Jack		1	
224	7-2700-41	Handles, Shroud Removal and Installation		1	
		Electrical Sealant Gun		1	
* 226		* Portable Curing Tool			
227		Thermolug Installation Tools		1	
228	7-2700-49	Cage, Protection, A/C Tire Inflation		1	
230	551611	Strap, Retaining Main L/C Door		1	
231	7-2700-53	Strap, Retaining Main L/G Leg		1	
236	Brochure	Rate Table, Damping System	4x4x5	1	
238	Brochure	Developmental Second Line Test Equipment, Damper Consisting of:			
	Brochure	a) Test stand UG6003A-1			
	Brochure	b) Aircraft damper system Electronic Components			

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REF.	DRAWING NO. OR BROCHURE	ITEM	SIZE	QTY	REMARKS
	Brochure	c) Damper Test Set UG6004A-1			
	Brochure	d) Damper Auxiliary Test Set			
	Brochure	e) "UG" Limiter Test Set UG6006A-1			
	Brochure	f) Pitot Static Test Set Model 382			
	Brochure	g) Rate Table 4G6002A-1			
248	353670	Mat, Protection, Engine Bay			
249	255614	Mat, Protection, Fuselage Fuel Cell			
444		Clothing, protective liquid oxygen handling			
		a) Face Shield			
		b) Elbow length gloves			
		c) Apron			
		d) Chemical shoes			
134	600854	Stand, Maintenance, Engine- Change			Prototype
★ 138	600851	★ Trailer, Engine Maintenance, Iroquois			
142	7-2700-34	Sling, Aircraft Maintenance, Engine Iroquois			
★ 190	600850	Crane, gantry type for Iroquois			
111		Engine change equipment, Air Logistics.			

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Z Filling of liquid oxygen convertor to be demonstrated on tarmac outside D1 hangar.

★ Item will not be available.

NOTE: Canadair Equipment to be added.

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ARROW GROUND SUPPORT EQUIPMENT EVALUATION CONFERENCE

ROYAL CANADIAN AIR FORCE PERSONNEL

BOARD MEMBERS

W/C D.W.Goss
W/C B.D.MacArthur
W/C P. de L. Markham
W/C G.D.Waterman
S/L G.H.Cooper
S/L L.C.Gibson
S/L C.T.Reiser
S/L D.E.Whyte
F/O G.O.H.Poulsen

AFHQ/AAWS Chairman
ADC/HQ
AGHQ/DM Eng.
TSD/AVRO
AMC/SACO
AFHQ/DVME
AFHQ/D Arm E
AFHQ/DIE Eng
AFHQ/AAWS Secretary

TECHNICAL ADVISERS

Major J.M.Ambrecht (USAF)
S/L D. L. Campbell
S/L J.O.H. Neff
S/L J. R. Romano
F/L B.D. Darling
F/L J. B. Murray
F/L K. Thomasson
F/L W. Ross
F/L J.D. Young
F/L T.E. Scanlon
F/O L.F. Bateman
F/O W. G. Gooding
F/O A. J. Guerin
F/O A. W. Joy
WO1 J. Dick
WO1 E.H. Russell
WO2 L.Waite
WO2 J. Degear
WO2 G. Steele
F/Sgt. C.J. Fordy
F/Sgt. R. Kitchen
Sgt. H.A. Foster
Sgt. J. McEgan

ADC/HQ
AFHQ/AAWS
TSD/MAT
AMC/AAWS
AMC/SEGO
AFHQ/AAWS
AFHQ/AAWS
TSD/MAT
TSD/AVRO
ADC/HQ
AMC/SACO
AMC/SACO
AMC/SACO
AMC/SPMO
AMC/SEGO
TSD/MAT
AMC/SPMO
AMC/S Arm O
TSD/MAT
TSD/MAT
TSD/MAT
TSD/MAT
TSD/MAT

DEPARTMENT OF DEFENCE PRODUCTION REPRESENTATIVES

C. A. Hore
J. L. Rush
D. L. James
T. W. Carter

ARROW GROUND SUPPORT EQUIPMENT EVALUATION CONFERENCE

AVRO AIRCRAFT PERSONNEL

ENGINEERING

C. Lindow	Engineering Project Manager ARROW 2
A. Bulley	Project Designer ARROW 2
D. Moore	Project Engineer ARROW 2
R. Littleboy	Section Chief Ground Equipment
F. Halpen	Engineer Ground Equipment
P. Germaine	Engineer Ground Equipment
T. David	Engineer Ground Equipment
G. Emmerson	Section Chief Maintenance Reliability
R. Reid	Engineer Maintenance Reliability
C. Beanland	Engineer Maintenance Reliability
J. Brumfit	Engineer Maintenance Reliability
K. Lowe	Engineer Maintenance Reliability
D. Cranch	Engineer Maintenance Reliability
D. Collingwood	Engineer Maintenance Reliability

SALES AND SERVICE

F. C. Plumb	Service Manager
D. Reynolds	Ass't Service Manager
P. Gallimore	Chief Service Engineer
F. Wilson	Spares Requirements Supervisor
I. Liss	Ass't ARROW Weapon System Co-ordinator - Support
K. Knowlton	Supporting Systems Engineer
E. Burn	Service Co-ordinator
A. Currie	Service Analyst

TEST PILOTS

J. Zurakowski	Chief Experimental Test Pilot
W. J. Potocki	Experimental Test Pilot

ARROW GROUND SUPPORT EQUIPMENT EVALUATION CONFERENCE

ASSOCIATE CONTRACTORS' PERSONNEL

CANADAIR

K. Cole
J. Tetlow
D. Follett
J. Floyd

ORENDA ENGINES

A. W. Smallwood
G. Wilson
G. D. Hunter

R. G. A.

J. Williams
I. Herr

ARROW GROUND SUPPORT EQUIPMENT EVALUATION CONFERENCE

SUB-CONTRACTORS' PERSONNEL

MINNEAPOLIS-HONEYWELL

P. Suddick
J. Gregson
L. Ponzo
D. Wright
K. Wefald
G. Asselstine
W. Zatychea