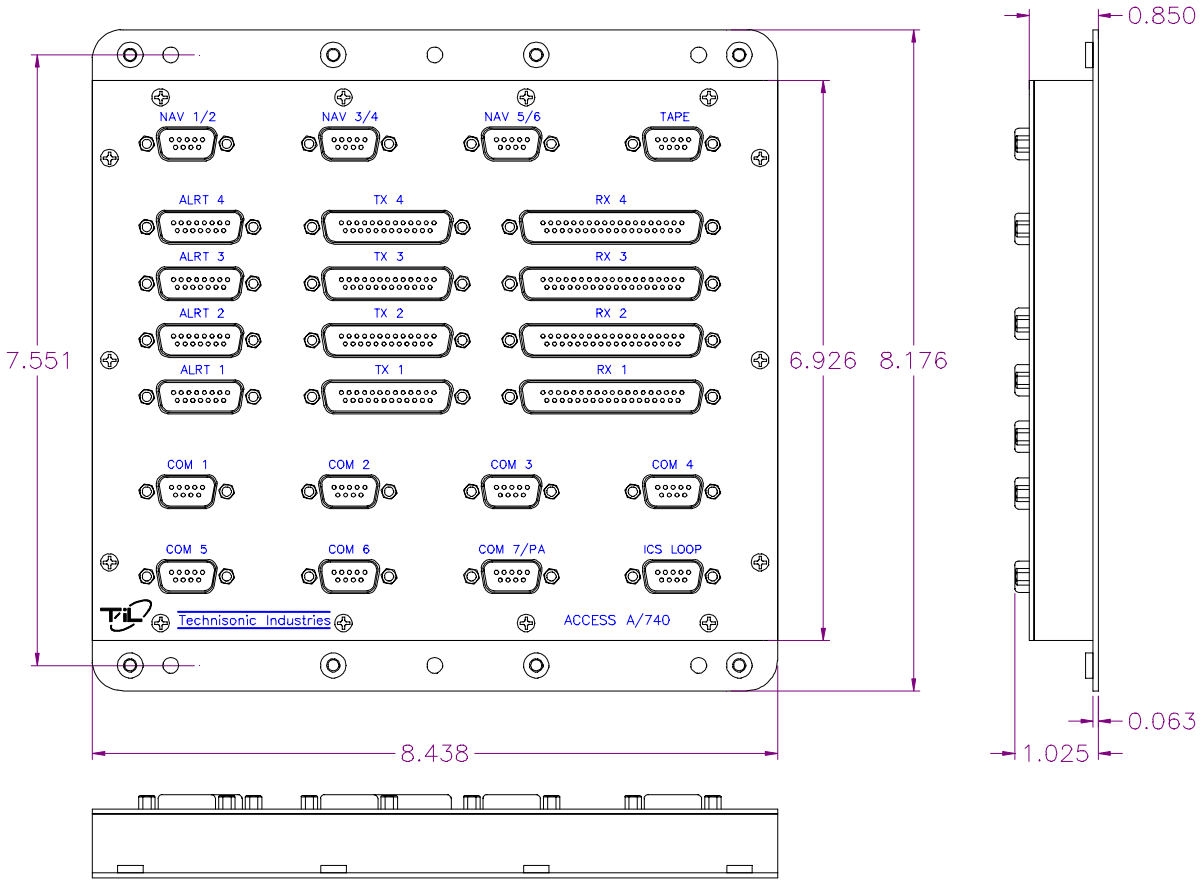
ACCESS/A™ AUDIO CONTROL SYSTEM
MODEL: A740



Installation and Operating Instructions

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REVISIONS				
Revision	**Page**	**Description**	**Date**	**Approved**
1.1		Changed headers on all sections to match	27 OCT 98	
1.2	1-3	Inserted missing physical characteristics and correct high operating temperature .	30 MAY 00	

☑CAUTION

This unit contains **static sensitive devices**. Wear a grounded wrist strap and work at a static-safe workstation when handling internal printed circuit boards.

☑WARRANTY INFORMATION

The Model A710 Audio Controller is under warranty for one year from date of purchase. Failed units caused by defective parts or workmanship should be returned for warranty service to:

Technisonic Industries Limited
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☑TRADEMARK INFORMATION

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SECTION 1

GENERAL DESCRIPTION

1.1 INTRODUCTION

This publication provides operating and installation information on the Model **A740, ACCESS/A** Interface Patch Bay, manufactured by Technisonic Industries Limited. This unit is designed to provide high performance audio wiring termination, and will work with both TiL **ACCESS/A** and other vendor's audio systems. The unit is plug and pin compatible with the **ACCESS/A** family format, to allow fleet wide compatibility with all **ACCESS/A** installations. This unit also incorporates RF hardening, common ground return management, audio line terminations, and a simple upgrade or expansion path for system installations as new items are added.

1.2 DESCRIPTION

The A740 has 24 industry standard D-subminiature connectors, using machined pin construction, heavy gold plating and jackpost style connector locks. They are internally mapped to provide 4 parallel connector groups for to up to 4 separate audio stations, 7 plugs for transceiver/PA attachment, 3 plugs for nav aid interfacing, a dedicated tape player (entertainment) connection, and an ICS tie line management connector for intercom loop control.

When using **ACCESS/A** controls, the fully floating interface is correctly maintained, and a floating, isolated, bridge-compatible interface is also maintained for stereo tape players. When other manufacturer's audio systems are used, the tape interface must be considered carefully, as lines may become grounded in an unwanted manner by the internal grounding of the specific controls used.

Each radio port allows the correct termination of shields and (if desired) audio line common grounding points. An audio line termination is also provided for RX audio (1K), and RFI suppression is provided across the mic line with a 0.022uF capacitor shunt. If all the default wiring is installed during the initial installation, then adding a new radio to the ship becomes a simple matter of plugging in the radio port connector, and routing those wires to the new radio. All signal distribution to other system locations is then managed by the A740.

The ICS Tie line port allows loop control of the ship, and can be configured by an **ACCESS/A A770** eyebrow panel, external switches, or another vendor's loop control system. An internal load (1K) may be added to the system for line levelling, or disabled. The unit is shipped with this load disabled.

The Tape Player port accepts stereo music inputs, and has a DC load (100 ohms/1W), and series elements (2x 1K) to prevent accidental tape unit damage from wiring problems or shorts. The resistors can be altered, removed or tied together in other way (to provide a mono output, for example) within the A740, if required. A line is also brought to this connector for a logic line, usually dedicated to ICS call alerting, and routed to the alerting connectors.

A massive, consolidated common ground is also provided in the A740 via the case return, if needed for a "common ground" audio return point.

1.3 PURPOSE OF THE EQUIPMENT

The **A740 ACCESS/A** Interface Patch Bay is designed to provide centralized audio wiring interconnection within an airborne communications environment. This includes radio and transceiver selection, intercom, airframe threat alerting, and crew management. The unit has been packaged to minimize size and weight characteristics and is ideally suited for helicopter installations, where it can be conveniently be located at the end of the central control console. The product is compliant with all **TSO-C50c**, **DO-214** and **DO-160C** applicable categories relating to frequency response, cross-talk, vibration, humidity, temperature, altitude and general environmental conditions in an airborne environment. It is an interconnect device only, and provides no other signal processing or control functions.

1.4 MODEL VARIATION

The A740 currently comes in one basic configuration, which supports four audio control stations.

The mounting brackets may be attached to either side of the unit, for orientation as needed in the airframe, and the brackets support attachment from either the front (with up to AN3/10-32 bolts or screws) or rear surface with pre-fixed 8-32 PEM nuts.

FIGURE 1-1 A740 ACCESS/A INTERCONNECT PATCH BAY - GENERAL VIEW

1.5 TECHNICAL SUMMARY

A summary of the relevant electrical, operational, mechanical and physical characteristics of the control panel are given in **Table 1-1**, General Specifications.

TABLE 1-1 GENERAL SPECIFICATIONS

MODEL A740
ACCESS/A INTERFACE PATCH BAY:

PHYSICAL CHARACTERISTICS:

Width	8.44 inches
Height	8.18 inches
Depth	1.03 inches
Weight	2.0 lbs. (0.91 Kg)
Mounting	Bulkhead mounting, min. 4 x 8-32/10-32 screws/bolts

POWER SOURCE REQUIREMENTS:

DC Voltage (Negative Ground)	Not Required
DC Current	Not Required

TECHNICAL CHARACTERISTICS:

RX Input Impedance	Default 1K Ohms (can be removed)
Microphone RFI Bypass	0.022uF/100V
ICS Bus Load	Optional 1K
Tape Player Load	100 Ohms/1W, plus 2 ea. 1K (series) elements in each bridge line
Transceiver Locations	7 with TX and RX capability
Receiver Locations	6 predefined RX capability, plus up to 6 aux RX lines
Audio Frequency Response (all lines)	within 3 dB from 300 Hz to 6000 Hz
Hum and Noise Level	better than 70 dB
RX Input isolation (300-6000Hz)	> 70 dB between inputs

ENVIRONMENTAL:

Temperature (operating)	-40°C to +70° Celsius
Temperature (survival non-operating)	-55°C to +85° Celsius
Humidity	95% Non-condensing
Shock	12 g (any axis)
Altitude	30,000 feet

SECTION 2

INSTALLATION INSTRUCTIONS

2.1 GENERAL

This section contains information and instructions for the correct installation of the **A740, ACCESS/A** Interconnect Patch Bay.

Make certain that the unit is correctly operating in accordance with the equipment user's requirements and manufacturer's specifications, prior to releasing the equipment for service.

2.2 EQUIPMENT PACKING LOG

Unpack the equipment and check for any damage that may have occurred during transit. Save the original shipping container for returns due to damage or warranty claims. Check that each item on the packing slip has been shipped in the container.

2.3 WIRING REQUIREMENTS

Airframe wiring should be MS22759 Tefzel or Raychem 44 (81044) or 55 single conductor and shielded wire. Heatshrink solder sleeves (such as Raychem or equivalent) should be utilized for shield termination.

All Microphone audio input and output line connections should be made with 2 or 3 conductor/twisted pair shielded cables as illustrated. Receiver audio input lines should also be 2 conductor twisted pair shielded cables. The power and ground lines should be a minimum of #22 AWG (#20 preferred). Keying and all audio lines may be #24 AWG or larger.

CAUTIONS:

DO NOT bundle any low level audio lines with RF coaxial cables, AC inverter, motor, pump or blower wiring, which can cause noise coupling between the various systems, especially during RF transmission or pump/blower mechanical operation. Maintain as much distance as possible from these types of wire bundles.

Note that there is really **no effective shielding** for **magnetic coupling** (which occurs at high currents), and the only suitable prevention for this type of interference is **distance** between the interfering lines. Shielded wiring is effective **only** for electrostatic coupling, or voltage driven interference.

2.4 ACCESS/A INTERCONNECT PATCH BAY INSTALLATION

The **A740 ACCESS/A Interface Patch Bay** is designed to be bulkhead mounted and should be installed in conjunction with an **IN-A740** installation kit. See **Figure 2-1** for an outline drawing of the unit with dimensions, to facilitate the installation.

CABLE CLEARANCE:

Allow **at least 2.5" of additional height clearance** for mating connectors and hoods (side routing), or 3.0" (back routing). Cables should only be long enough to **reach the intended mating plug, to avoid accidental mis-mating later**. Cables should be tagged with the mating connector location (J2003, etc.) for greater clarity.

ALERT OPERATION:

Alerting, if routed through this system, is normally taken from one of the rear station plugs.

SHIELD GROUNDS:

Convenient **shield ground connections** are provided at each connector for the indicated input signal shield drains, and will give the shortest possible return for these lines. The return for these liens is the chassis of the A740 unit.

INTERNAL OPTIONS:

The internal loads may be manually removed from any RX line, if desired. The ICS load is jumperable (with a patch plug).

DRAWINGS:

A full **ACCESS/A** (mono) system installation example is given in the multi-page sections of **Figure 2-2.** These installation and mechanical drawings are available as **AutoCAD files** (DWG/R12 format, or DXF format) free of charge to authorized TiL dealers and completion centers.

2.5 INSTALLATION KIT - CONTENTS

The **IN-A740** installation kit consists of:

- **Ten (10ea.)** **9**-pin D-subminiature mating connector (**female**)
- complete with crimp pins, screw locks and clamshell hoods.
- **DE9S** or equiv. P1001-1007 & P1009-1011

- **One (1 ea.)** **9**-pin D-subminiature mating connector (**male**)
- complete with crimp pins, screw locks, and clamshell hood.
- **DE9P** or equiv. P1008

- **One (1 ea.)** **9**-pin D-subminiature mating connector (**female**)
- complete with crimp pins, screw locks, clamshell hood, and a blanking plug or lock out for **pin 3**.
- **DE9S** or equiv. P1012

- **Four (4ea.) 37**-pin D-subminiature mating connectors (**male**)
- complete with crimp pins, screw locks and clamshell hoods.
- **DC37P** or equiv. P2001-2004

- **Four (4ea.) 25**-pin D-subminiature mating connectors (**male**)
- complete with crimp pins, screw locks and clamshell hoods.
- **DB25P** or equiv. P3001-3004

- **Four (4ea.) 15**-pin D-subminiature mating connectors (**male**)
- complete with crimp pins, screw locks and clamshell hoods.
- **DA15P** or equiv. P4001-4004

In addition, the A740 unit itself comes with:

1. This manual.

2. Warranty registration card.

2.6 INSTALLATION - PIN LOCATIONS AND CONNECTIONS

A740 Interconnect Patch Bay

- The A740 may be used to reduce installation problems in the airframe, and provides a simple and easily updated central interconnect for the ship's audio system. If all default wiring is in place, then adding new radios is a simple matter of plugging them into the designated A740 connector, and they are then distributed correctly to all other stations in the airframe.

- The A740 has plugs for each of up to **4 ACCESS/A stations**, which carry the common radio signals, alerting and ICS data. In addition, it has individual plugs for each of up to 7 transceivers (and/or PA), a common ICS Tie connector for ICS loop control, a connector for a bridge style Tape Player for entertainment, and three connectors for the six (2 per plug) default Nav aids.

- Wiring is detailed in the following section as to how the units are connected together via the A740, and maps are provided for each connector type.

- Internally, the A740 contains a load resistor for each source (1K for radios), to stabilize the line, and give some constant loading. The Tape player contains a pad for each line, to prevent accidental damage via inadvertent line shorts elsewhere in the interconnect (for bridge lines), and will support fully floating tape player lines **without any additional interface hardware**.

- The Aux/Alerting plug bus is provided for those instances where some common connections are needed, and use of an external matrix block is not desired. Normally, only the pilot/co-pilot positions require these connections. Spare pins may be used for other parallel lines, but these must be low-level and not power lines.

- Mic wiring contains RFI filtering (0.022uF bypassing) to reduce interference effects.

These definitions are NORMALLY used with the A740:

RX Lines	TX Lines	Alerting	Definition
J2001,	**J3001,**	**J4001**	**Pilot's Position**
J2002,	**J3002,**	**J4002**	**Co-Pilot's Position**
J2003,	**J3003,**	**J4003**	**Rear Station (or J4003 may be used for alerting/Nav inputs)**
J2004,	**J3004,**	**J4004**	**Rear Station (or J4004 may be used for alerting/Nav inputs)**

IMPORTANT!

Plugs may be interchanged for testing or other operations without damage, but the mapping of ICS Tie signals ***will be affected*** at connector **J1008** as these cables are moved to other stations.

Likewise, radio plugs may be changed for trouble-shooting purposes, but the mapping to specific switches on a control station ***will then be changed***.

NEVER exchange transceiver and receiver connectors, as they have different signals on their pins, and loss of functionality will result.

Tape player connector J1012 is KEYED with a ***blocking pin*** to prevent mis-mating, as this line can be ***damaged by incorrect installation*** at the A740.

For best results, the ***cables should be dressed at the A740 so that the correct A740 location is clear by cable length and location***, as well as a connector label tag on each plug.

A740 Interconnect Patch Bay

RX Connector J2001 through J2004 DC37S **Mating Cable Connector: DC37P (37 Pin Male)**

J2001 J2004		Connector Pin Assignments	RX Connector
Low	**High**	**Connection**	**Notes**
20	**1**	ICS Node	ICS Tie Line Between Units
21	**2**	Can be used for additional Shield grounds, if required.	Sum Line need NOT brought out to these pins, but routed to an A770 eyebrow unit ONLY! Tied to ground at A740.
22	**3**	Direct Input	Unswitched Direct Input
4		Shield Ground	Airframe ground
23	**5**	Music R Audio (supports BRIDGE OUTPUT!)	Switch #4 Pin 23 is common Right-hand-most RX switch.
24	**6**	Music L Audio (supports BRIDGE OUTPUT!)	Switch #4 Pin 24 is common Right-hand-most RX switch.
25	**7**	NAV 6 RX Audio	Switch #3
26	**8**	NAV 5 RX Audio	Switch #3
27	**9**	NAV 4 RX Audio	Switch #2
28	**10**	NAV 3 RX Audio	Switch #2
29	**11**	NAV 2 RX Audio	Switch #1
30	**12**	NAV 1 RX Audio	Switch #1 Left-hand-most RX switch
31	**13**	COM 7 RX Audio	Not Used If PA Enabled. Right-hand-most TX switch.
32	**14**	COM 6 RX Audio	
33	**15**	COM 5 RX Audio	
34	**16**	COM 4 RX Audio	
35	**17**	COM 3 RX Audio	
36	**18**	COM 2 RX Audio	
37	**19**	COM 1 RX Audio	Left-hand-most TX switch

Common Lines	Floating above airframe ground in ACCESS systems, but serves as common signal low for corresponding input signal lines.
Common Lines	Floating above airframe ground in ACCESS systems, and ***not connected*** to any other common line in the system.

These lines are connected Pin-for-Pin from J201 on ACCESS/A panels, EXCEPT for pins 2 & 21, which are not brought out to this connector.

View from solder side of DC37P MATING CONNECTOR:

19..... 1
37..... 20

A740 Interconnect Patch Bay

TX Connector J3001 through J3004 DB25S **Mating Cable Connector: DB25P (25 Pin Male)**

J3001-3004 TX Connector Pin Assignments ACCESS/A System				
Com	**Mic**	**Key**	**Connection**	**Notes**
14	**1**	**2**	COM 7/PA TX Mic Out	
3	**15**	**16**	COM 6 TX Mic Out	
17	**4**	**5**	COM 5 TX Mic Out	
6	**18**	**19**	COM 4 TX Mic Out	
20	**7**	**8**	COM 3 TX Mic Out	
9	**21**	**22**	COM 2 TX Mic Out	
23	**10**	**11**	COM 1 TX Mic Out	
		Spare		
		24	Spare parallel line	use if needed between units.
		25	Spare parallel line	use if needed between units.
		12	Spare parallel line	use if needed between units.
13			Chassis Ground, for Shields, if required.	

These lines are connected functionally, from the corresponding functional equivalent on J101 (i.e., COMM 7 Key to COMM7 Key) on ACCESS/A panels. The other pins on J101 (a 50 pin plug) are *not routed to this plug*, as they are *local system connections only*.
The particular pattern shown is used to maximize isolation between mic lines (by inserting common/ground or PTT lines between audio signals), and should be modified with care, or increased cross-talk may result.

View from solder side of MATING CABLE CONNECTOR DB25P:

13.....1
25.....14

A740 Interconnect Patch Bay

TX Connector J4001 through J4004 DA15S **Mating Cable Connector: DA15P (15 Pin Male)**

This is an optional patch connection, if required. It may be used for common alerting, or other functions that are low level signals ONLY. Use caution with audio lines, and be sure common/ground lines are interleaved between signals to provide shielding. All connector lines are in parallel, and pin 1 is connected to chassis ground for a shield connection, if required.

J4001 J4004		Connector Pin Assignments	Alerting Connector
Low	**High**	**Connection**	**Notes**
	1	***Possible* alerting connections**	
	2	**Alert 1 (in)**	**Active when grounded. Accepts +28VDC.**
	3	**Alert 2 (in)**	**Active when grounded. Accepts +28VDC.**
	4	**Alert 3 (in)**	**Active when grounded. Accepts +28VDC.**
	5	**Alert 4 (in)**	**Active when grounded. Accepts +28VDC.**
	6	**Alert 5 (in)**	**Active when grounded. Accepts +28VDC.**
	7	**Alert 6 (in)**	**Active when grounded. Accepts +28VDC. Tied to pin 2 on J1012 (Tape Plug) for common ICS call connections.**
8		**Shield Ground (Chassis) if Required**	**Airframe ground**
		***Possible* audio connections**	
9	**1**	**Aux Audio #1**	**see notes below.**
10	**2**	**Aux Audio #2**	**see notes below**
11	**3**	**Aux Audio #3**	**see notes below**
12	**4**	**Aux Audio #4**	**see notes below**
13	**5**	**Aux Audio #5**	**see notes below**
14	**6**		**Do not use for audio, due to line connected to J1012, this is a signaling connection ONLY.**
15	**7**	**Aux Audio #6**	**see notes below**

Alerting has separate power and ground connections, unrelated to the rest of the audio system. Power may be taken from an existing alerting breaker, to retain the alerting defeat function by pulling one common breaker. Power consumption is very low, typically under 25mA.

These alerting lines (if required) can be connected function for function from J102 on ACCESS/A panels.

IMPORTANT!

This connector array may also be used for supplemental Nav Aids (beyond the 6 default lines & tape lines) to flight crew positions. In this case, one of the rear crew plugs is used as the ***feed point*** for those systems. These lines may be routed to an A770 eyebrow expansion unit to give additional switched system inputs. The mechanical internal mapping (for lowest coupling and cross-talk) is to use a pin from one row (1-7), then the adjacent one from the other row (9-15), alternating high and low lines, as with the other plugs. Pin 8 is already tied to ground for a shield drain. For example, Aux #1, Pin 1 hi, Pin 9 lo;Aux #2, Pin 2 hi, Pin 10 lo, etc.

View from solder side of DB15P MATING CONNECTOR:

8.....1
15.....9

A740 Interconnect Patch Bay

Radio (Transceiver) Connectors J1001 through J1007 DE9P

Mating Cable Connector: DE9S (9 Pin Female)

These are the plugs for connection to individual system Transceivers (or PA systems). In addition to the TX and RX audio and PTT Keylines, connections are provided for protective shields and an optional "ground" return for the RX audio low line. This ground jumper, if installed, will return the low side of the RX audio line to the local airframe ground, which may (in some circumstances) improve cross-talk or noise floor. ***This jumper should be left out initially***, but may be helpful during installation check-out to improve noise levels due to airframe specific wiring issues. If the radio sources are all floating, and single conductor shielded wiring has been used (physically possible, but not recommended), then these ground jumper lines should be installed for ***each radio***.

All plugs are wired identically, but are mapped through the appropriate lines and RX & TX plugs, back to individual stations.

J1001 J1007		Connector Pin Assignments	Transceiver Connector
Low	**High**	**Connection**	**Notes**
6	**1**	**RX Audio**	Always use both lines.
2		**RX Ground Jumper**	Connect 2 & 3 to ground RX Low Line.
3		**RX Ground Jumper**	Local Ground
	4	**TX PTT**	Radio Key Line
9	**5**	**TX Audio**	Radio Mic Line, always use both lines.
7		**RX Shield**	Connected to local ground
8		**TX Shield**	Connected to local ground

Interconnect Patch Bay Plug Assignments:

J1001 COM1
J1002 COM2
J1003 COM3
J1004 COM4
J1005 COM5
J1006 COM6
J1007 COM7 or PA System

View from solder side of DE9S MATING CONNECTOR:

1.....5
6.....9

A740 Interconnect Patch Bay

ICS Connector J1008 DE9S

Mating Cable Connector: DE9P (9 Pin Male)

This plug is for attachment to an additional ICS LOOP CONTROL system, or the tie/split functions of an A770 eyebrow panel. If no connection is made to these pins, there will be **NO ICS SIGNALS IN THE AIRFRAME!** It is important to ***at least*** jumper the lines here together, to insure that common ICS Audio is shared between stations. If an A770 is used to route and split the ICS audio, it will perform this signal combining function internally.

J1008		Connector Pin Assignments	ICS Connector
Low	**High**	**Connection**	**Notes**
6	**1**	**J2003 & 2004 ICS Line (rear stations)**	Route to A770 (rear position). Or: **Jumper 1, 2, & 3 together for common ICS**
7	**2**	**J2002 ICS Line (usually the co-pilot)**	Route to A770 (crew position), Or: **Jumper 1, 2, & 3 together for common ICS**
8	**3**	**J2001 ICS Line (usually the pilot)**	Route to A770 (pilot position), Or: **Jumper 1, 2, & 3 together for common ICS**
4		**Shield Ground line, attached to local ground.**	To common shields of these twisted pair lines.
9	**5**	**Direct Input (unswitched)**	To a signal source desired to be unswitched in the audio system. Note that this line is partially muted to sidetone level during TRANSMIT operation within a given station.
			6,7, & 8 are already internally common.

To add an external ICS Loop device, it is normally tied to the common bus of these pins for fully shared ICS audio. The external loop usually supports rear passengers, and is most logically grouped with the rear stations for tie/split bus operation. These line usually go to an A770 eyebrow panel for loop control, but can be bussed as desired at the A740, if no separate control is used. For ICS audio to pass between stations, they MUST have this line connected together.

The direct input may be sent to any desired source, but is UN-switched at all stations, and ***will always be heard regardless of panel switch settings***. If this line is not used, it should either be ***left out of the harness altogether***, or jumpered pin 9 to 5 at this plug, to reduce noise pick-up. ***This line may be the source of considerable system noise, if terminated incorrectly.***

View from solder side of DE9P MATING CONNECTOR:

5.....1
9.....6

A740 Interconnect Patch Bay

Radio (Receiver) Connectors J1009 through J1011 DE9P
Mating Cable Connector: DE9S (9 Pin Female)

These are the plugs for connection to individual receivers or Nav aids. In addition to two sets of RX audio lines, connections are provided for shields and a "ground" return for the RX audio low lines. This ground jumper, if installed, will return the low side of the RX audio line to the local ground, which may (in some circumstances) improve cross-talk or noise floor. ***This jumper should be left out initially***, but may be helpful during installation check-out to improve noise levels due to airframe specific wiring issues. If the radio sources are all floating, and single conductor shielded wiring has been used (possible, but not recommended), then these jumper lines should be installed for each radio.

All three plugs are wired identically, but are mapped on the appropriate lines back to the RX plugs, and back to individual stations.

J1009 J1011		Connector Pin Assignments	RX Connector
Low	**High**	**Connection**	**Notes**
6	**1**	**RX Audio A (odd numbered Nav)**	Always use both lines.
2		**RX Ground Jumper**	Connect 2 & 3 to ground RX A Low Line.
3		**RX Ground Jumper**	Local Ground
4		**RX Ground Jumper**	Connect 3& 4 to ground RX B Low Line
9	**5**	**RX Audio B (even numbered Nav)**	Always use both lines.
7		**RX A Shield**	Connected to local ground
8		**RX B Shield**	Connected to local ground

Interconnect Patch Bay Plug Assignments:

J1009 NAV1 NAV2
J1010 NAV3 NAV4
J1011 NAV5 NAV6

View from solder side of DE9S MATING CONNECTOR:

1.....5
6.....9

A740 Interconnect Patch Bay

Tape Player Connector J1012 DE9P

Mating Cable Connector: DE9S (9 Pin Female) with keying pin @ pin 3

This plug is for connection to a "bridge type" tape player to provide entertainment audio to the aircraft. It will support grounded output players as well, but it can also ***accept floating bridge lines with no additional circuitry***. Be certain ***phasing is correct*** and identical for both channels to avoid audio cancellation and distortion in recorded music material.

These input lines contains a DC load and isolation pad, to provide system stability, and reduce the chance of tape player damage (bridge type) by accidental wire shorts from the low line to airframe ground. An additional connection is also provided on this plug for the ICS Alerting Input.

J1012		Connector Pin Assignments	RX Connector
Low	High	Connection	Notes
6	1	Tape Player Left Audio	Always use both lines.
	2	ICS Alerting Input	Used if required for common ICS call annunciation. Requires optional voice or tone alerting module to be installed.
3		no connection	LOCKED OUT—Keying Pin
4		no connection	
9	5	Tape Player Right Audio	Always use both lines.
7		Left Shield	Connected to local airframe ground
8		Right Shield	Connected to local airframe ground

Note that Pin 3 is locked out on the mating connector, and is removed from the A740 connector. This is deliberate, and is used to prevent accidental mis-mating of this plug with another RX or TX input, which would damage the tape source. Never ground any audio low lines routed to this plug, or bridge-type tape sources will be damaged.

These lines may also be mapped internally inside ACCESS/A stations to be used as ***additional Nav aids***. In this case, J1012 is then the feed point for those systems, rather than for a tape source. 'Left" audio is Nav 7, "right" audio is Nav 8.

View from solder side of DE9S MATING CONNECTOR:

1.....X.....5
6.....9

