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Technical Publication

7011, 7012, and 7013 datalink

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Contents

Introduction

The I.C.T. 7013 Datalink terminal is a two-way data communications device that enables data prepared on paper tape to be transmitted over a telephone line and punched on paper tape at a remote Datalink terminal. Each Datalink can transmit and receive data on 5, 6, 7 or 8-track paper tape at a speed of 600 or 1,200 bits per second as required.

The relevant parts of this Operating Manual also apply to the I.C.T. 7011 Transmitter terminal and the I.C.T. 7012 Receiver terminal. The 7011 terminal is provided with a paper tape reader but no punch. The 7012 terminal has a paper tape punch but no reader. Both these terminals have the complete operator's control panel, but only the controls appropriate to the terminals will be operative, that is the 7011 Transmitter may require the use of the controls in the parts of the control panel labelled 'Terminal' 'Transmitter' and 'Transmitter and Receiver' but *not* the part labelled 'Receiver'. Similarly the 7012 Receiver will not require use of the controls in the part labelled 'Transmitter'.

The 7011 and 7012 terminals may be used together or with a 7013 terminal to form a one-way (simplex) communications channel. Two 7013 terminals may be used together to form a two-way (half duplex) channel, in which case data can be transmitted in either direction, but not simultaneously. Links can also be established between a 7011, 7012 or 7013 terminal at a remote location and an I.C.T. 1900 series processor where a 7010/1 or 7010/3 telephone data terminal forms the processor end of the link.

Chapter 1 Physical description

LOCATION OF TAPE READER AND TAPE PUNCH

Data to be transmitted or copied is contained in pre-punched paper tape which is read by the paper tape reader unit. This is located at the front of the cabinet on the left hand side. Instructions for loading the reader are given on page 9.

Data which has been received or is being copied is reproduced on the paper tape punch unit. This is located at the right hand side of the cabinet, behind a hinged panel. This panel is raised to allow access to the punch unit and to the supply of blank paper tape for the punch. Instructions for loading the punch are given on page 9.

PAPER TAPE DISPENSER

A powered tape dispenser is supplied as standard. This is located at the front of the machine to the right of the reader unit and is capable of handling lengths of up to 1,000 feet.

A description of the method of loading the dispenser is given on page 9 under *LOADING THE READER UNIT*. The cabinet which contains the tape reader (7011 and 7013) and tape punch (7012 and 7013) is mounted on castors and can thus be moved readily. Tape bins are also provided for each terminal, two for 7013 and one each for 7011 or 7012. These bins should be placed to receive tape coming out of the punch and/or reader unit.

MODEM

The Modem, or modulating/demodulating device, is not a physical part of the cabinet but is attached to it by means of a flexible cable. The operator should know the location of this device, which is usually near to the cabinet but may be up to forty feet away, as part of his duties is to ensure that it is switched on or off.

TELEPHONE HANDSET

This is attached to the modem by means of a flexible cable, and its position can be altered. The operator will need to use the handset to establish voice contact with the distant operator before and after the transmission of data, and possibly also during any interruptions in data transmission; the handset should therefore be placed in a readily accessible position.

FORMAT AND PARITY BOARDS

The required tape format and parity are selected by means of plug-in boards which are inserted into slots at the rear of the machine. There are three of these; the punch format board, the reader format board and the reader parity board. Each of these exchangeable boards has a different selection of links which determine the appropriate format and parity. Reference should be made to the typed label on each board to determine its function. The labels can be read when the boards are in place in the machine. The operator may need to change the boards, therefore the location of those not in use should be ascertained. The format boards supplied with the terminal are prepared to the I.C.T. 1900 series paper tape code. Additional sets of format and parity boards will be required when dealing with more than one code.

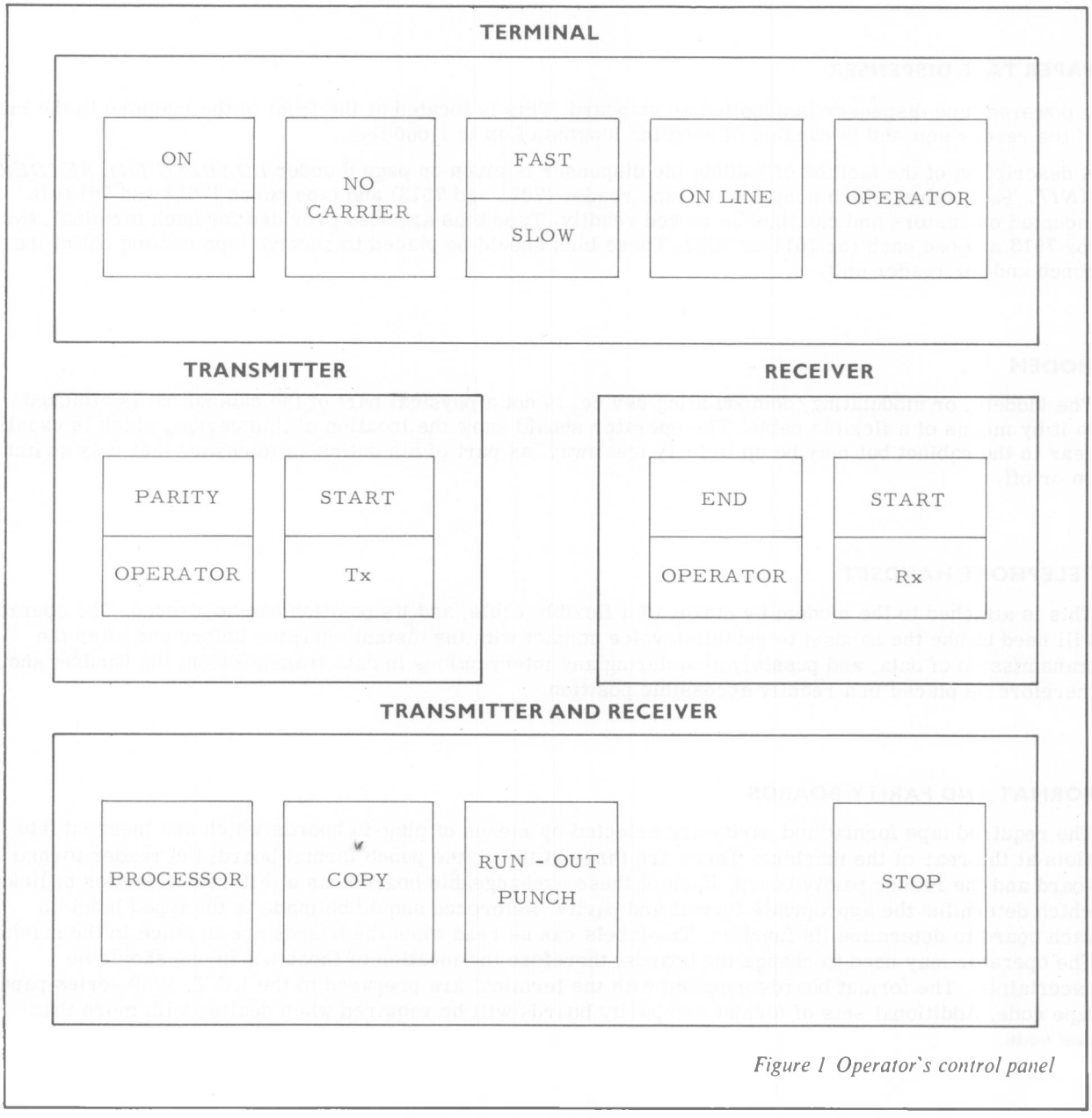

Figure 1 Operator's control panel

CHAD BOX

This is a metal container located beneath the punch unit. It is provided to hold the punchings, or chads, which are punched out of the blank tape by the punch head. The box may be lifted away from the cabinet by means of the handle provided; when in place it is held by a magnetic catch. The operator should ensure that it is emptied at intervals, (see *Routine Maintenance* page 15).

OPERATOR'S CONTROL PANEL

The controls and indicators on this panel are as follows (see Figure 1).

Terminal controls

The following switches and indicators are associated mainly with the function of the telephone terminal, with the exception of the END indicator. They are located on the part of the operator's control panel labelled TERMINAL. They are operative on the 7011, 7012 and 7013 terminals.

Colour and Type	*Title*	*Purpose*
GREEN INDICATOR (Two segments)	ON	Upper segment glows ON: a.c. power is connected to the equipment. Lower segment glows ON: d.c. power is connected to the equipment.
UNCOLOURED TRANS-LUCENT INDICATOR	NO CARRIER	The indicator glows when the Modem detects the absence of a carrier signal, i.e. when no data is being transmitted or received or the telephone link is broken.
UNCOLOURED TRANS-LUCENT INDICATOR AND SWITCH (Two segments)	FAST	The upper segment FAST glows when the rate of transmission is 1200 bits per second.
	SLOW	The lower segment SLOW glows when the rate is 600 bits per second. One depression of the switch causes the transmission rate to change.
GREEN INDICATOR AND SWITCH	ON LINE	One depression of the switch will connect the telephone line either to the Modem (indicator glows) or the telephone (indicator does not glow). When the line is connected to the telephone the operator can use it to speak to the distant operator.
YELLOW INDICATOR AND SWITCH	OPERATOR	The indicator glows 10 seconds after data has ceased to flow due to an error condition or if a d.c. power supply fails, in which case the lower half of the ON indicator will be extinguished. Depression of the switch cancels the alarm signal which sounds before transmission starts and when transmission has terminated (whether correctly or in error) provided that the ON LINE indicator is illuminated.
YELLOW TRANS-LUCENT INDICATOR (Two segments)	END	This is the upper segment of the END/OPERATOR indicator on the RECEIVER part of the control panel. For OPERATOR see under RECEIVER CONTROLS, page 6. The indicator glows before a transmission or when a transmission has terminated correctly, provided the ON LINE indicator is illuminated, and the alarm tone sounds.

Transmitter controls

The following switches and indicators function at the transmitting terminal (7011 and 7013). They are not operative on the 7012 receiver terminal control panel.

Colour and Type	*Title*	*Purpose*
YELLOW TRANS-LUCENT INDICATOR (Two segments)	PARITY	The upper segment PARITY glows when a parity error has occurred on the reader. It is extinguished when the START/Tx or COPY control is operated.
	OPERATOR	The lower segment OPERATOR glows when the door is opened on the powered dispenser (if fitted) or when no tape is present in the reader.
GREEN INDICATOR AND SWITCH (Two segments)	START	The upper segment START glows when the paper tape reader starts. It remains glowing until the reader runs out of tape, a parity error is read, or the STOP switch is depressed.
	Tx	The lower segment Tx (transmit) flashes when data is being transmitted. The switch starts the reader provided that the START/Rx or COPY switches have not been depressed, the reader is serviceable, and the ON LINE indicator is illuminated.

Receiver controls

The following switches and indicators function at the receiving terminal (7012 and 7013). They are not operative on the 7011 transmitter control panel.

Colour and Type	*Title*	*Purpose*
YELLOW INDICATOR (Two segments)	OPERATOR	The lower segment OPERATOR glows to indicate that paper tape is low at the local punch dispenser, or that no tape is present in the punch. The upper segment is the END indicator described with the TERMINAL controls.
GREEN INDICATOR	START	The upper Segment START glows when the punch starts and will remain illuminated until the punch runs out of tape, end of transmission occurs, or the STOP control is operated.
	Rx	The lower segment Rx (receive) flashes when data is being received. The switch starts the punch provided that the START/Tx or COPY switches have not previously been depressed, the punch is serviceable, and the ON-LINE indicator is illuminated.

Transmitter and receiver controls

The following switches and indicators function at the transmitting and receiving terminals, and are located in the part of the operator's control panel labelled TRANSMITTER AND RECEIVER. They are operative on 7011, 7012 and 7013 terminals.

Colour and Type	*Title*	*Purpose*
WHITE INDICATOR AND SWITCH	PROCESSOR	This indicator must be illuminated when the terminal is transmitting to or receiving from a remote 1900 series processor via a 7010/1 or 7010/3 telephone data terminal, and be extinguished under all other conditions.
UNCOLOURED TRANS-LUCENT SWITCH	COPY	This switch is not illuminated. When it is depressed it starts the local reader and punch provided that they are serviceable, the ON LINE indicator is not illuminated, and the START/Tx OR START/Rx controls have not been operated. The upper segment of these indicators will then glow and data will be reproduced by the punch from the reader.

Colour and Type	*Title*	*Purpose*
YELLOW SWITCH	RUN-OUT PUNCH	This switch is not illuminated. When depressed it will allow paper tape to be run out of the local punch, providing the START/Rx switch has not been operated and that the ON LINE indicator is not illuminated.
RED SWITCH	STOP	This switch is not illuminated. When depressed, it stops transmission or copy immediately.

Reader unit controls

The following switches are located on the front of the reader unit (7011 and 7013 only).

Colour and Type	*Title*	*Purpose*
SWITCH	ON/OFF	This switch should always remain in the ON position when the reader is in use. The reader is then controlled from the control panel switches.
PUSH-BUTTON SWITCH	RUN OUT	When depressed, this push-button enables unwanted sections of tape to be passed through the reader at high speed provided that the START/Tx switch has not been operated and that the ON LINE indicator is not illuminated.

Punch unit control

The following lever is located on the punch unit (7012 and 7013 only).

Colour and Type	*Title*	*Purpose*
LEVER	RUN OUT	When depressed, this lever allows paper tape to feed out of the punch continuously until the lever is released, provided that the punch motor is running. If this control is used, no run out characters will be punched in the tape.

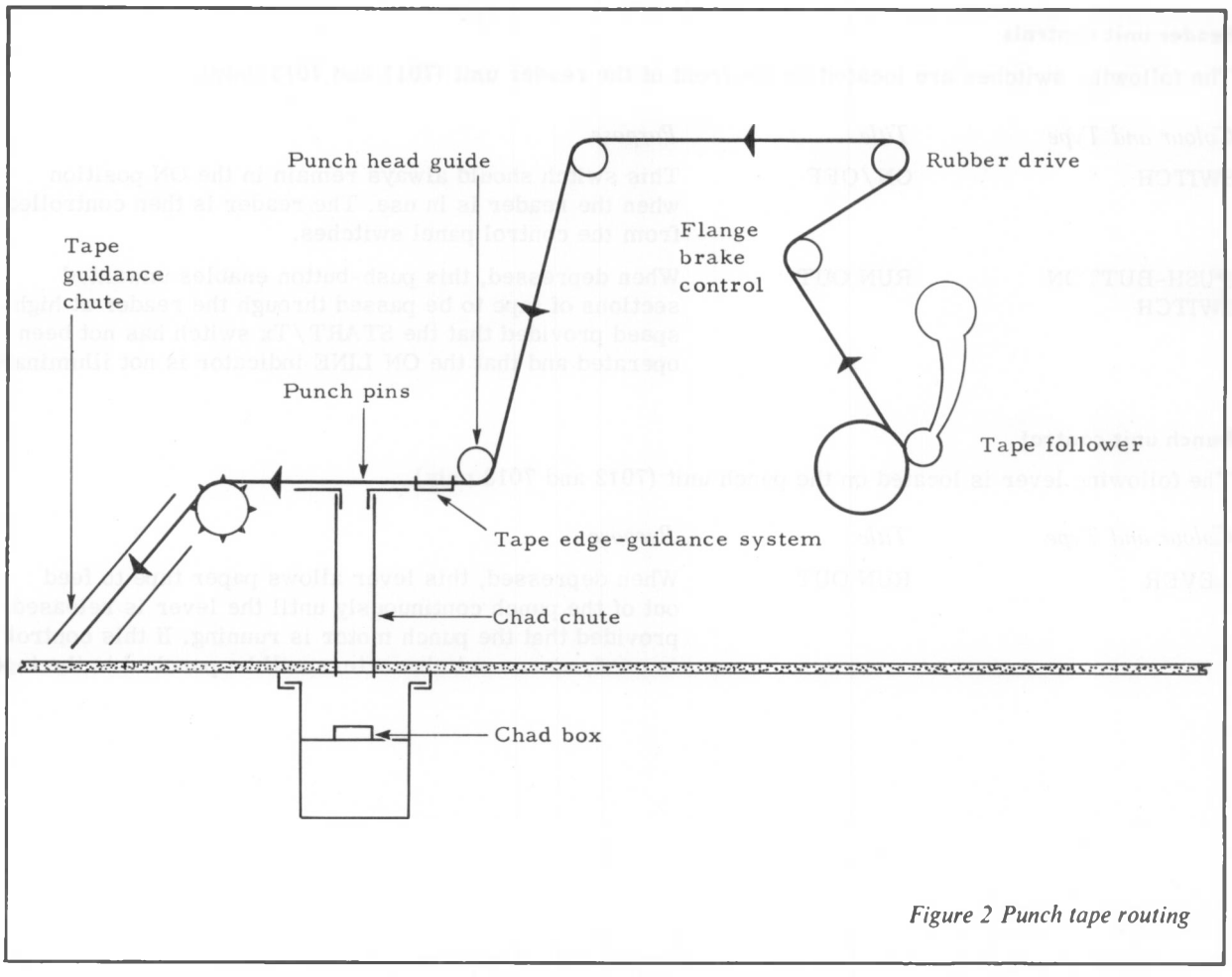

Figure 2 Punch tape routing

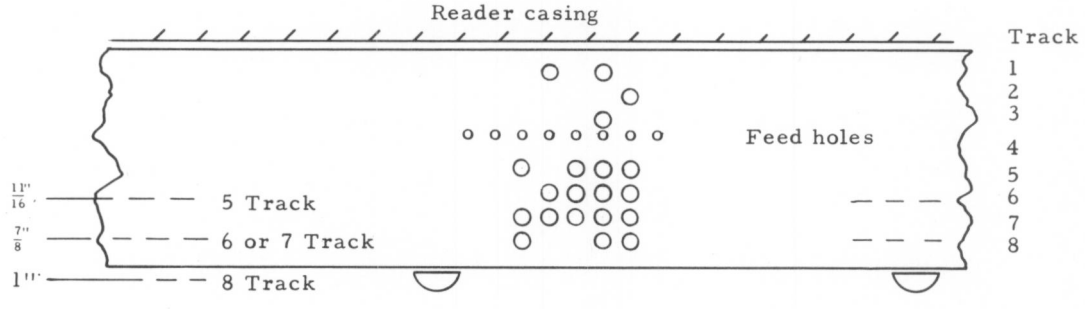

Figure 3 Width stops for differing tape widths

Chapter 2 Operating instructions

LOADING THE PUNCH UNIT

The path taken by paper tape through the punch is shown in Figure 2. Raise the punch door to gain access to the punch mechanism. Lift the tape follower arm clear, and place the fresh reel of unpunched tape on the hub of the supply spool so that the lead unwinds counter-clockwise from the 3 o'clock position. Allow the follower arm to ride against the tape reel then tighten the securing knob to secure the tape supply. Cut the leading end of the tape obliquely, to assist threading. Route the lead of the tape clockwise over the flange brake control idler and then counter-clockwise over the rubber composition drive drum. Feed the tape lead between the wire guide and the plastic idler in the upper left position of the dispenser, then clockwise round the punch head guide. Pull the two probes on the tape edge -guidance system to the front ends of the slots, thread the tape into the guide bracket and into the punch block, and then release the probes. Continue feeding the tape past the punching station, then counter -clockwise over the feed sprocket and into the tape guidance chute.

With the power on, prime the tape feed-hole punching by simultaneously drawing the paper tape along by hand and pressing the punch run out lever, until the tape feeds automatically. Lower the punch door. Note: Only recommended paper tape should be used. This is available from I.C.T. Supplies Division (see page 16 for address).

LOADING THE READER UNIT

When using the powered type of dispenser the method of loading depends on which way the tape is wound. Place the tape reel in the dispenser so that the feed holes are between tracks three and four and track one is farthest away from the operator (Figure 3). The tape will now unwind clockwise from 9 o'clock if it has been wound counter-clockwise, or counter-clockwise from 3 o'clock if it has been wound clockwise (Figure 4). In the latter case pass the tape round the extra idler in the upper right of the dispenser. Hereafter routing for tapes wound in either direction is identical. Route the tape counter -clockwise over the right-hand drive wheel, clockwise around the drive control idler, counter-clockwise over the left-hand drive wheel, and through the dispenser throat. Close the dispenser door.

To load the reader: Position the two tape width adjustment studs for the appropriate tape in use. Raise the hinged brake lid and insert the tape between the feed rollers so that it lies snugly between the rear guide edge and the two width adjusting studs. Lower the hinged brake lid.

PREPARATION

To prepare the 7013 Datalink for data transmission the following procedure should be carried out:

1 Ensure that the mains wall switch is on.

2 Switch on the isolator switch at the rear of the machine and ensure that the red lamp glows, indicating that a.c. power is present.

3 Ensure that the neon indicator on the Modem and both segments of the ON indicator on the control panel are illuminated.

4 If the ON LINE indicator is illuminated, operate the ON LINE switch.

5 Using the telephone associated with the Modem, obtain connection to the distant terminal and establish voice contact with the distant operator. Establish the conditions of operation. e.g. the

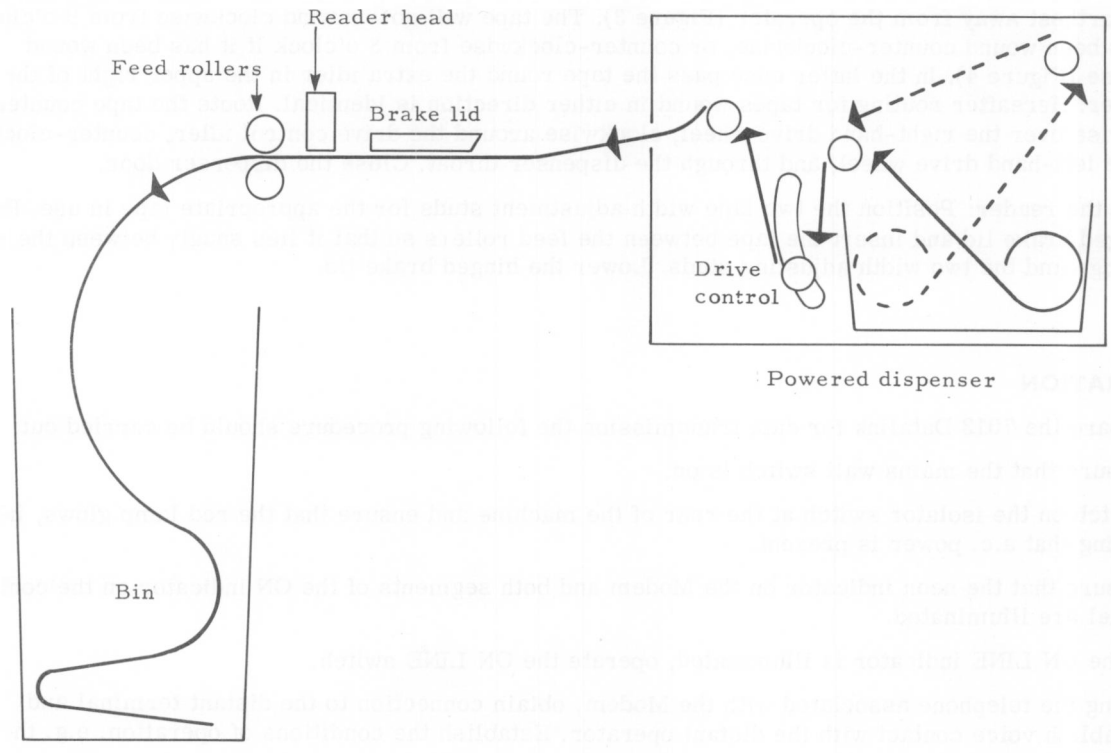

Figure 4 Reader tape routing

amount of paper tape required, the format and parity to be used, and the line speed. Do not return the telephone handset to its rest position.

6 Ensure that the correct format and parity boards are fitted at the rear of the machine.

7 According to the type of terminal at the remote end set the PROCESSOR switch. It should be illuminated if the terminal is on-line for a 1900 series processor.

TRANSMITTING

To transmit data, preparations detailed above should first be completed, then the following procedure should be followed:

1 Ensure that the ON-OFF switch on the reader unit is in the ON position.

2 Set the FAST-SLOW switch on the control panel to indicate FAST.

3 Load paper tape into the reader as described under *Loading the Reader Unit*.

4 Using the telephone, confirm that the distant operator is ready to start receiving.

5 Operate the ON LINE switch, then immediately operate the START - TRANSMITTING switch. The reader should then start.

6 If transmission is in progress, the TRANSMIT, RECEIVE, and NO CARRIER indicators should be flashing.

7 To stop the reader at any time, operate the STOP switch; the reader should then stop immediately.

8 If the reader stops and the STOP switch has not been operated, determine the close down conditions and take the appropriate action detailed in *Alarm Signals and Close-down Conditions*.

Close-down conditions while transmitting

The paper tape reader may stop owing to any of the following causes:

1 Transmission completed satisfactorily.

2 Receiving terminal not active.

3 Broken or totally unsuitable telephone line.

4 Reader parity error.

5 Reader tape torn.

6 Tape torn at distance punch.

Information on how these conditions are signalled, and the necessary operator action is given under *Alarm Signals and Close-down Conditions*.

RECEIVING

To receive data, the preparations detailed above should first be completed, then the following procedure should be followed:

1 Set the FAST - SLOW switch on the control panel to indicate FAST.

2 Load tape to the punch as described under *Loading the Punch Unit*.

3 Using the telephone, confirm that the distant operator is ready to start transmission.

4 Operate the ON LINE switch then immediately operate the START - RECEIVING switch. The punch should then start.

5 If transmission is in progress, the TRANSMIT, RECEIVE, and NO CARRIER indicators should be flashing.

6 To stop the punch at any time, operate the STOP switch; the punch should then stop immediately.

7 If the punch stops and the STOP switch has not been operated, determine the close down conditions and take the appropriate action detailed in *Alarm Signals and Close-down Conditions*.

Close-down conditions while receiving

The punch may stop owing to any of the following causes:

1 Transmission completed satisfactorily.

2 Transmitting terminal not active.

3 Broken or unsuitable telephone line.

4 Tape torn at the punch.

Information on how these conditions are signalled, and the necessary operator action, is given under *Alarm Signals and Close-down Conditions*.

COPYING

To effect copying, the following procedure should be carried out:

1 Ensure that the mains switch at the rear of the machine is on and that both halves of the ON indicator on the control panel are illuminated.

2 Load tape for punching as described in *Loading the Punch Unit*.

3 Load tape for reading as described in *Loading the Reader Unit*.

4 Ensure that the correct format and parity boards are fitted at the rear of the machine and that the PROCESSOR indicator is *not* illuminated.

5 If the ON LINE indicator is illuminated, operate the ON LINE switch.

6 Operate the COPY switch; the reader and punch should then operate and data on the tape passing through the reader should be reproduced on the tape passing through the punch.

7 If a reader parity error occurs both mechanisms will stop; the reader will stop immediately at the error character and the character will not be punched.

8 If it is required to stop the reader and punch at any time during copying, operate the STOP switch.

RESTART PROCEDURE

A standard restart procedure has been adopted for the 7013 Datalink terminal. This procedure must be used after any error condition which causes the transmission of data to terminate, and is as follows:

1 The operator at the transmitting (paper tape reader) end must move the tape back over two identifiable blank areas, and at least three feet from the character under the reader light. It must then be rewound manually onto the dispenser.

2 The operator at the receiving (paper tape punch) end must 'run-out' the tape before restarting, and must later, after re-transmission, match up the tape visually to determine where to splice. The matching-up is made by laying one piece of the punched tape over the other until identical sequences coincide; the tape is then cut and spliced at a convenient blank area.

3 Transmission is re-started in the usual manner, by pressing the ON LINE switch and the relevant START switch.

4 If no blank areas exist on the tape the whole tape must be re-transmitted (an example of this is when the close-down occurs near the beginning of the tape).

5 If the transmission ends because of an unsuitable line it is advisable to set the FAST/SLOW switch to SLOW before re-starting. Should transmission still be unsuccessful it is necessary to ask the telephone operator to allocate a different telephone line for the transmission (if on a switched network).

The Restart Procedure must be used after any error condition. In particular, it is important that the Restart Procedure is used after an error condition that results from continuous retransmissions for 10 seconds and that causes the reader or punch to stop and the alarm tone to sound.

ALARM SIGNALS AND CLOSE-DOWN CONDITIONS

Transmitter

Signal or condition	*Cause*	*Action*
Alarm tone Transmitter OPERATOR illuminated END illuminated Transmitter START extinguished All data read	Satisfactory end of transmission	Operate ON LINE switch and discuss action with distant operator on the telephone. To continue transmission, load more tape, operate ON LINE switch and then START/Tx switch. Clear the telephone line by returning the handset to its rest position when all transmission has been completed.
Reader halted Alarm tone Terminal OPERATOR illuminated Transmitter START illuminated END extinguished Preceded by an excessive number of retransmissions (see page 14 for retransmission conditions)	Receiving terminal inactive Broken or unsuitable telephone line	Cancel alarm tone by depressing Terminal OPERATOR switch. Operate ON LINE switch and establish cause of failure with distant operator. Restart transmission by operating the standard restart procedure, or (if at beginning of tape) reload tape and restart in the normal manner.
Transmitter OPERATOR illuminated No effect when transmitter START switch is pressed.	No tape in reader	Load tape in reader.
Reader halted Alarm tone PARITY illuminated END illuminated Transmitter START extinguished	Reader parity error	Operate ON LINE switch and establish contact with distant operator to discuss action. It will normally be necessary to adopt the standard restart procedure.
Reader halted Alarm tone Transmitter OPERATOR illuminated END illuminated Transmitter START extinguished Data still to be read	Reader tape has torn	Operate ON LINE switch and establish contact with distant operator to discuss action. Repair damaged tape. Adopt the standard restart procedure.
Reader halted Alarm tone Terminal OPERATOR illuminated Transmitter START illuminated END extinguished	Distant punch tape has torn or has run out	Operate ON LINE switch and inform distant operator to enquire what action is required. The standard restart procedure will be used.

Receiver

Signal or condition	*Cause*	*Action*
Punch halted Alarm tone END illuminated Receiver START extinguished	Satisfactory end of transmission	Operate ON LINE switch and discuss action with distant operator. To continue transmission, load more tape, if necessary, operate ON LINE switch, and then START/Rx switch clear the telephone line by returning the handset to its rest position when all transmission has been completed.
Punch halted Alarm tone Terminal OPERATOR illuminated Receiver START illuminated	Transmitting terminal inactive	Cancel alarm tone by depressing Terminal OPERATOR switch. Operate ON LINE switch and establish cause of failure with distant operator. Restart transmission by adopting the standard restart procedure or (if at beginning of tape) operate ON LINE and START/Rx switches in the normal manner.
Punch halted Alarm tone Terminal OPERATOR illuminated Receiver START illuminated	Unsuitable telephone line	Operate ON LINE switch and establish contact with distant operator to discuss appropriate action. Adopt the standard restart procedure.
Punch halted Alarm tone END illuminated	Faulty telephone line. Transmission has not started.	As above.
Punch halted (motor stopped) Receiver START extinguished Receiver OPERATOR illuminated Alarm (after 10 secs) Terminal OPERATOR (after 10 secs)	Punch Tape has torn at the punch, or tape has run out at the punch	Operate ON LINE switch and inform distant operator on the telephone. Reload tape. Use the standard restart procedure. Restart transmission by operating the ON LINE and START/Rx switches.
Receiver OPERATOR illuminated	Local punch tape low	At start of transmission, load new tape. During transmission, take no action.

General

Signal or condition	*Cause*	*Action*
Alarm tone	Unknown	If the alarm tone is raised after the start of transmission at any time operate the ON LINE switch extinguishing the indicator and establish contact with the distant operator to establish the cause.
Reader and/or punch halted, Rx, Tx, and NO CARRIER indicators flashing No alarm tone.	Retransmission of data block	If excessive, stop Punch Operate ON LINE switch and inform distant operator on the telephone. If transmitting or receiving at FAST (1200 bits per second) speed, it may be advisable to alter the speed to SLOW (600 bits per second) and restart, using the standard restart procedure. If excessive data retransmission occurs at this lower speed, contact the distant operator as before, then contact the telephone

Signal or condition	*Cause*	*Action*
		switchboard operator and (if on a switched network) ask for a different line. Note that if this condition persists for more than ten seconds, the reader or punch will stop automatically and the alarm tone will sound.
NO CARRIER illuminated Terminal OPERATOR illuminated transmitter or receiver START illuminated END extinguished Alarm tone.	Telephone link has been broken.	Contact telephone switchboard operator.

ROUTINE MAINTENANCE BY OPERATOR

It is usual for the operator to carry out the following routine cleaning and testing operations. All other maintenance will be carried out by an engineer.

1 *Daily cleaning* The operator should clean with a soft brush the reader top and the underside of the lifting pressure pad. The punch head and table top should receive the same attention. All dust and loose chads (punchings) should be removed. At the start of each day the operator should read the two hour-meters, which are located at the rear of the machine near the ON/OFF switch, and inform the engineer of the readings. This will assist the engineer to maintain a regular servicing routine by indicating the time left before the next service is required.

2 *Daily testing* The terminal operator should carry out a short test each day to ensure that the terminal is functioning correctly. There are two types of test: the first (known as the 'taileating' test) is for the 7013 terminal to check that the punch is reproducing correctly what is fed into the reader. The second is for the transmitter (7011) or receiver (7012) to check that data is transmitted or received over a telephone line without errors resulting from the malfunction of the telephone line or the terminal concerned. These tests are as follows:

TEST ONE This is for 7013 terminals only. Place a piece of tape, punched with a random pattern using all the tracks and at least four or five feet long, in the reader. Ensure that the punch is loaded with paper tape. Following the instructions on page 21, copy the pattern on to the punch tape. When about four feet of tape have passed through the reader stop the reader and the punch by pressing the STOP switch. Remove the original tape from the reader and retain it. Run out six inches or so of the newly punched tape and feed the free end of the tape into the reader. Start copying again by pressing the COPY switch, allow the tape to continue running for about two minutes then stop the reader and punch by pressing the STOP switch. Compare the final pattern punched with the original pattern and check for any errors. Any errors found will indicate a malfunction of the terminal unit; the engineer should be informed.

TEST TWO This is for the 7011 and 7012 terminals. It may also be used to test the transmitting and receiving functions of the 7013, but not simultaneously. The test consists simply of the local terminal operator transmitting (7011) or receiving (7012) a known sequence of data to or from some other terminal. A length of paper tape punched into an easily identified sequence of data should be transmitted, following the usual operating instructions. The receiver operator should check it, and tell the transmitter operator of the result of the check using the telephone link in the usual way. Any errors found will indicate a malfunction of the telephone line or the terminal unit. A further test of this type, using a different line, should indicate whether the terminal is at fault or not.

3 *Each time transmission take place* The receiver (punch) operator should check the amount of tape left in the punch feed dispenser. It is usual to reload with fresh tape before each transmission to avoid the possibility of an accidental tape run-out. At the same time the chad box should be removed and emptied; before it is replaced, any loose chads should be brushed away from the part of the cabinet in which the chad box is located.

SPLICING PAPER TAPE

A thin cellulose-based adhesive tape is recommended for splicing; this tape is available in half-inch widths in a number of colours.

Editing

Paper tape should be spliced on a suitable tape-editing block. The ends of the tape must be cut accurately at the butt joint. A slight gap between the ends is preferable to ends overlapping and all joints should be smooth and straight with no protruding edges. Sprocket hole spacing must be uniform throughout the joint. Data and feed holes must be cleared.

Tears

A tape-editing block should be used. Three character positions on either side of the tear should be covered by adhesive tape. If the tear is completely across the tape, two pieces of adhesive should be used, one on either side of the feed holes, taking care not to cover them. Any obscured data and feed holes should be punched out.

Damaged Tape

Punch a replica of the damaged section and then proceed as for editing.

Note: The adhesive tape and a suitable tape editing block can be obtained from

I.C.T. Supplies Division, Newlands House, Berners Street, London W.1.

Telephone: 01-636 8277.