Below is a list of the hardware designed by the members of the Systems Engineering Section (formally Signalling Electronics Section) Glasgow.

CARD No.

73SES1	FLASHER UNIT
76SES1	FLASHER UNIT MKII
79SES1	FLASHER CONTROL UNIT MKII
79SES2	FLASHER CONTROL UNIT MKIV
79SES3	H.B.D. INTERFACE CARD (EDINBURGH)
79SES3 M1	H.B.D. INTERFACE CARD (EDINBURGH)
79SES4	H.B.D. TRANSMITTER (EDINBURGH)
79SES4 M1	H.B.D. TRANSMITTER (EDINBURGH)
79SES5	TECHNICIANS TEST SET (HAWKER SIDDELEY H.B.D.)
80SES1	BERTH SELECT & DISPLAY DRIVE CARD (BS&DD)
80SES2	RELAY CONTACT TIMER
80SES3	SINGLE CHARACTER DISPLAY MODULE
80SES4	DISPLAY CONTROL CARD (EDINBURGH H.B.D.)
80SES5	H.B.D. TEST UNIT (EDINBURGH)
80SES6	CLOCK & DISPLAY CONVERTER
80SES7	BERTH STEPPING CARD (AVIEMORE)
80SES8	AVIEMORE KEYBOARD
81SES3	FOUR CHARACTER DISPLAY MKI (BOARD 1 & 2)
81SES4P	H.B.D. INTERFACE CARD (MOTHERWELL)
81SES5	H.B.D. PORTABLE LOCATOR DISPLAY CARD
82SES1	CONTROL CARD
82SES1 M1	CONTROL CARD MOD 1
82SES1 M2	CONTROL CARD MOD 2
82SES2	MULTIPLEXING CARD
82SES2 M1	MULTIPLEXING CARD MOD 1
82SES3	DEMULTIPLEXING CARD
82SES3 M1	DEMULTIPLEXING CARD
82SES4	TIMER DELAY UNIT (10 SECONDS)
82SES5	RELAY TESTER
83SES1	BERTH STEPPING CARD (BSC)
83SES2	MASTER ROUTEING CARD (MRC)
83SES2 M1	MASTER ROUTEING CARD MOD 1 (MRC)
83SES4	FOUR CHARACTER DISPLAY MKII - CIRCUIT
83SES5	FOUR CHARACTER DISPLAY MATRIX
83SES6	INTERFACE CARD TX/RX
83SES8	O.C.U. LOGIC CARD
83SES9	AUXILLIARY I/O CARD
83SES10	50V INTERFACE CARD
83SES11	INVERTER - 12/50V DC TO 110V AC 250/500VA
84SES1	INDICATION LAMP INTERFACE CARD
84SES2	ROUTE & TRACK K.E. I/F CARD
84SES3	POINTS K.E. I/F CARD
84SES4	TRACK INDICATION CARD
84SES5	POWER SUPPLIES K.E. I/F CARD
85SES1	KEYBOARD MATRIX
85SES2	ASAD CARD

85SES2 M1	ASAD CARD MOD1
85SES3	DISPLAY MODULE TEST UNIT
85SES4	905/Z80 BUFFER CARD
85SES5A	A.H.B./A.O.C.R. FAILURE INDICATION UNIT
85SES5B	A.H.B./A.O.C.R. FAILURE INDICATION UNIT LEDS
86SES1	CATHCART DISPLAY MATRIX
88SES2	LINE PROTECTION UNIT
89SES1	ELECTRONIC EMERGENCY BLOCK BELL
89SES1 M1	EBB - VF Tx 1 / TO 6 TONES to GS/STDG 024
89SES2	SINGLE EUROCARD MODEM
90SES1	SSI/905 TD INTERFACE CARD
90SES2	BUSBENDER
90SES3	LINE ROUTEING CARD
90SES4*	PSEUDO SPT - PULSE CODE GENERATOR
90SES5	MODEM MONITOR
90SES6	DUAL RS232C/RS422 CONVERTER
91SES1	VIDEO RELAY DELAY TIMER (CCTV)
92SES1	ELECTRONIC CLOCK I/P MODULE
93SES1	DISPLAY MODULE - DISPLAY MATRIX (CLOCK)
93SES2*	CLAUDS BOX - POINT MACHINE TEST UNIT
93SES3	TD DISPLAY TO CLOCK CONVERTION MODULE
94SES1	EXPANDABLE INTELLIGENT I/O WITH MODEM & RS232

* The original idea and funding for these cards came from our customers but the hardware & software design was entirely ours.

Below is a list of the software written by G. Wallace/A. Paterson. The software constitutes more than 16 years of hard labour, and is used in the products specified.

PROGRAM TITLE	CARD	PRODUCT
CLAUD	93SES2	CLAUDS BOX - POINT MACHINE TEST UNIT
SPT	90SES4	PSEUDO S.P.T. - PULSE CODE GENERATOR
SMASTHIL	90SES3	PROTOCOL CONVERTER (SIGHTHILL)
DISPLAYO	81SES3	MOTHERWELL HABD DISPLAY
SMAZ80	Z80	MOTHERWELL/GLW CENTRAL DOO/TRUST
ASAD905	85SES2	MOTHERWELL/GLW CENTRAL DOO/TRUST
CLOCK	83SES4/93SES1	MOTHERWELL
TECH	PC386	MWL/CENTRAL PAPER TAPE EMULATOR
MENU	PC386	DATA GENERATION
SSITYPED	82SES1	SSI/TDM TYPE D INTERFACE

ScR TRAIN DESCRIBERS

DISPLAY1	83SES4	DUNDEE/HIGH ST. TRAIN DESCRIBERS
DISPLAY2	83SES4	CATHCART TRAIN DESCRIBER
COMMS1	82SES1	DUNDEE/CATHCART/GREENHILL TRAIN DESCRIBERS
COMMS	82SES2	CATHCART LLPA BERTH MONITOR & DOO
DUNKASAD	85SES2	DUNDEE TRAIN DESCRIBER
DUNPASAD	85SES2	DUNDEE TRAIN DESCRIBER
FBOX	85SES2	DUNDEE/GREENHILL TRAIN DESCRIBERS

GHLKASAD	85SES2	GREENHILL TRAIN DESCRIBER
CATKASAD	85SES2	CATHCART TRAIN DESCRIBER
CATPASAD	85SES2	CATHCART TRAIN DESCRIBER
ETASAD	85SES2	GREENHILL TRAIN DESCRIBER EARLY TRANSMISSION
AVIEMORE	8080	AVIEMORE TRAIN DESCRIBER
CATHCRT	Z80	CATHCART TRAIN DESCRIBER
CATHFE	Z80	CATHCART TRAIN DESCRIBER
GRILL	Z80	GREENHILL TRAIN DESCRIBER
DUNDEE	Z80	DUNDEE TRAIN DESCRIBER
DUNDEFE	Z80	DUNDEE TRAIN DESCRIBER FRONT END PROCESSOR (ATR)
	8080	HIGH ST TRAIN DESCRIBER

ScR REMOTE CONTROLS

REMOTE1	82SES1	CARTHCART/KIRKHILL/NEILSTON
		GLASOW CENTRAL/SHIELDS
		GLASGOW CENTRAL/CARDONALD
		CRAIGENDORAN (CRAIGENDORAN/YOKER)
		MOTHERWELL/CARSTAIRS
REMOTE2	82SES1	YET TO BE INSTALLED
SHLDSRT	90SES3	CENTRAL/SHIELDS
CRAIGRUT	90SES3	CRAIGENDORAN (CRAIGENDORAN/YOKER)
EDSGASAD	85SES2	EDINBURGH/ST GERMAINS

MANUALS

ScR TD FIRST LINE MANUALS VOL. 1 & 2 issued for: Dundee
                                                         Cathcart
                                                         Greenhill

ScR REMOTE CONTROL (DAM) FIRST LINE MANUAL issued for: Cathcart/Neilston/Kirkhill
                                                         Craigendoran/Yoker
                                                         Central/Shields
                                                         Central/Cardonald
                                                         Motherwell/Carstairs

ScR PROTOCOL CONVERTER TECHNICAL MANUAL issued for: Sighthill

ELECTRONIC EMERGENCY BLOCK BELL MANUAL issued fo:r   Yoker/Motherwell/
                                                         Central/Sighthill/ Cowlairs

ScR V21/V23 MODEM MANUAL written but not issued in its entirety.