

"During his first term, Clinton was completely uninterested in foreign affairs and intelligence. At first [CIA's] Woolsey tried to see the president and focus his attention on important matters, but Clinton was like the Cheshire cat, ever disappearing when Woolsey appeared. Woolsey had such limited access to the president that be became the butt of Washington jokes. He was viewed as the ultimate lightweight, but a desperate one at that. When a small plane crash–landed on the lawn of the White House, Washington insiders quipped that it was Woolsey trying to get in to see the president."

--- Excerpt from Denial and Deception by Melissa Boyle Mahle.

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REGISTER, BUS, OR WORD NA	ME	CONTROLLER (BITS)	TERMINAL (BITS)
Instruction Storage Register	(ISR)	24	-
Data Register	(DR)	24	23
Control Register	(CR)	12	20
Terminal Reply Register	(RR)	24	_
Error Source Register	(ESR)	10	21
False Terminal ASW Register	(FASWR)	16	_
Signal Present Register	(SPR)	16	_
Logic Register	(LR)	-	23
Address Register	(AR)	_	9
Instruction Address Register	(IAR)	_	11
Mode Register	(MR)	_	23
Scanner Answer Bus	(SCAB)	16	-
Peripheral Unit Address Bus	(PUAB)	24	-
Terminal Data Bus †	(TD)	24	24
Terminal Opcode Bus †	(TOP)	7	7
Data Address Bus		_	23*
Input/Output Bus		_	24*
Address Bus			9
Read/Write Bus		_	-
Α			12*
В			12*
С			10*
Transfer Bus			12
Instruction Word		24	24
Program Memory Words (256 Max)		12	
Data Memory Words (512 Max)		24	

TABLE E

* Internal communication only.

† One bus for each CONT

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UNIT MTG Plate Pos 06		4		PO	P			F21		FB300		FA796	FA783	FA783	FAGAGB	(see note)		FAG408	FA791	FA919	FA781	FA782	FA783	FA788	FA780	FAGAGB	FAGAGB	FABAGB	(SEE NOTE)					201 D MODEM(S)
UNIT MTG Plate Pos 02		-		PC	IP IWEI			F21	FB152	FB306		FA914	FA783	FA788	FA6468	(See Note)		FA795	FA798	FA792	FA788	FA788	FA784	FA786	FA017	FA787		FAGAB	FAGAGE	FA640B	F/646B			
CONN Pos	5	8	8	8	8	8	6	8	8	₽	÷	12	₽	4	ŧ	â	17	8	19	ສ	21	ฆ	ន	ĸ	ю	8	12	8	8	8	31	8	8	

NOTE: THREE POSITIONS ARE WIRED TO ACCEPT FAG46B MEMORY PACKS For Future Expansion, but are unequipped initially.

IRCUIT PACK NUMBERS	(QUANTITIES)		NAMES AND FS LOCATIONS						
FA 646 B	(10)	:	PROGRAM MEMORY, DATA MEMORY	FS6, FS					
FA 780	(1)	:	ROTATE CIRCUIT	FS3					
FA 781	(1)	:	LOGIC A	FS3					
FA 782	(1)	:	LOGIC B	FS3					
FA 783	(2)	:	LOGIC C	FS3					
FA 784	(1)	:	INSTRUCTION CONTROLLER	FS2					
FA 785	(1)	:	INSTRUCTION DECODER	FS2					
FA 787	(1)	:	INSTRUCTION ADDRESS FAN OUT	FS2					
FA 788	(1)	:	DATA MEMORY TIMING CIRCUIT	FS4					
FA 789	(1)	:	MEMORY OPERATION SEQUENCER	FS4					
FA 791	(1)	:	LINKED LIST REGISTER	FS4					
FA 792	(1)	:	ERROR SOURCE REGISTER	FS4					
FA 793	(4)	:	INTERFACE CIRCUIT	FS5					
FA 795	(1)	:	CONTROL REGISTER AND MODEM INTERFACE	FS1					
FA 796	(1)	:	MAINTENANCE CONTROL AND MONITOR	FS1					
FA 798	(1)	:	DATA ADDRESS BUS	FS4					
FA 914	(1)	:	INPUT/OUTPUT CONTROLLER	FS1					
FA 917	(1)	:	INSTRUCTION ADDRESS REGISTER	FS2					
FA 919	(1)	:	DUAL MODEM INTERFACE	FS1					
FB 152	(1)	:	12 VOLT REFERENCE SUPPLY	FS8					
FB 300	(1)	:	OSCILLATOR BOARD	FS4					
FB 306	(1)	:	FERROD DRIVER	FS1					
FC 21	(2)	:	+3 VOLT FILTER AND REFERENCE	FS8					

Fig. 10—Terminal Unit Circuit Pack Layout

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time cycle. The complete set of exercises will be executed at least once during the time required to transmit or receive a single SU (28 x 1/2400 =11.67 milliseconds). Faults discovered by these test routines result in the transfer of traffic to a different link, and this link is removed from service for performance of diagnostic routines to determine the cause of the failure. Each modem clock cycle provides a signal which alerts the terminal unit program to execute the portion of program memory required to process this bit of the signaling traffic. Each clock cycle (1/2400 = 416.7 microseconds) of the modem requires the terminal unit to handle one receive and one transmit bit over the VFL interface. The terminal only requires 560 nanoseconds to complete any single operation execution sequence. Therefore, roughly 740 such instructions may be executed during the time one bit is being processed for the VFL interface. Only 10 percent of this capacity is required to process VFL traffic, and the remainder of the real time that the signaling bit is present in the VFL is dedicated to the self-check routines of the terminal, CONT, modem and VFL. Each 28th bit requires additional processing associated with a complete SU and every 12th word requires processing associated with each block of signaling traffic. Detailed description of the software processing for the receive and transmit tasks may be found in Section 231-045-405.

The terminal unit receives SUs for transmis-5.05 sion in parallel bit form from the processor via the CONT. These SUs, which may be single-unit messages or multiunit messages, are stored according to priority level in the transmit buffer portion of data memory. Each SU, in priority order, has eight check bits added and is passed serially to the data modem for transmission. Both transmit and receive tasks are based on the processing of each bit and each 28-bit SU, and each consecutive block of 12 SUs. An acknowledgment control unit is always generated to occupy the 12th position of an outgoing block and relates to a block previously received. Synchronizing SUs are transmitted in lieu of SUs when less than the 11 SUs required for a block are available in the transmit buffer. Transmitted SU blocks are stored in the transmit record table until an acknowledgment control unit, acknowledging error-free reception, is received. The transmit tasks also include transmission of faulty-link information when instructed by the processor.

5.06 The incoming serial data from the data modem is accepted by the terminal unit where

each SU is examined for errors, based on its eight check bits. Error-free SUs, minus check bits, are delivered in parallel bit form to the processor from the CONT. Included in the receive task are the following functions performed by the terminal unit:

- (a) Group bits of the data stream into SUs.
- (b) Generate and transmit an acknowledgment control unit in the 12th position of each block.
- (c) Filter erroneous SUs and all other SUs related to the operation of the signaling link from the received data to be presented to the processor.
- (d) Analyze received acknowledgment control unit to:
- Determine whether or not the acknowledgment control unit is received in the proper SU position
- (2) Determine if an acknowledgment control unit has been skipped, repeated, or is the one expected
- (3) Determine whether or not an acknowledgment control unit requests retransmission of any previously transmitted SUs.
- (e) Process any required retransmission.
- (f) Separate incoming data according to priority and indicate reception to the processor.
- (g) Collect multiunit messages.

5.07 Correction of errors contributed by the data link is via retransmission. To accomplish this, all SUs are transmitted in blocks of 12, the first 11 of which contain signaling information or sychronizing SUs which are transmitted only in the absence of other signaling traffic. The 12th SU of each block is an acknowledgment control unit, coded to indicate the number of the block in which it is included, the number of the block being acknowledged. and bits indicating whether or not each of the 11 SUs of the acknowledged block were received without error. Primary error detection on the signaling links is achieved through the use of the eight signal unit check bits. In addition, a data carrier failure detector is provided for detection of longer error bursts. Error-free messages are used without delay while a retransmission is requested of those found in error.

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5.08 Continuity of service is maintained by transfer from a faulty link to an alternate link in event of a failure condition. The terminal unit continuously monitors the data carrier and the SU error rate. Either a total failure or excessive SU errors will initiate transmission of messages over the alternate signaling link. This transfer is effected without loss of signaling information due to the retransmission method of error correction. Signaling traffic is restored to the regular route after the trouble clears. The processor is altered to an impending overload of terminal unit signaling capacity (overflow) by means of a single scan point associated with each terminal unit.

5.09 Each terminal unit is equipped with a DS 201D which provides the transmission interface with the 4-wire VFL.

5.10 Figure 11 is a simplified block diagram of the terminal showing the controller hierarchy. There are three separate control entities within the terminal. These are the instruction controller, the data memory controller, and the I/O controller. The instruction controller provides access to the program memory and executes the internally stored program. The data memory for both the internal stored program and the I/O controller. It also contains a wired logic linked-list sequencer which administers the SU buffers. The I/O controller handles all communications with the CONT which include:

(a) Maintenance access to the terminal

- (b) Access to the mode register which controls the operating mode to the terminal
- (c) Relaying commands to the instructor controller or data memory controller for accessing the program memory or data memory respectively.

The instructor controller and data memory controller are driven by a common 12.5 Hz oscillator. No internal timing is required in the I/O controller.

5.11 The three controllers operate asynchronously with respect to each other. Interaction among

the controllers is in the form of commands of bids. The solid arrows in Fig. 11 identify the various commands and indicate controller hierarchy. When one controller bids for service from another, it waits until an acknowledgment (broken line) is received from the serving controller. This indicates that the operation is in progress and that data is being transferred. For example, if the instruction controller decodes a READ instruction, it bids for the data memory controller and then waits. The data memory controller recognizes the bid and starts a memory access cycle. When the memory output is available, the continue signal is returned. The instructor controller then resumes its cycle, gating the data into a register and removing the bit. The data memory controller completes its cycle and is ready to serve another bid.

5.12 The data memory controller can receive bids

from both the instruction controller and the I/O controller. If bids arrive simultaneously, the I/O bid is served first. The GET and PUT sequences are operations which require a sequence of memory reads and writes. Due to the length of these sequences and because of the need for fast response to commands from the CONT, the data memory controller will interrupt a local GET or PUT sequence to serve an I/O memory access bid. The local bid is restarted after the I/O operation has been completed. An interrupt will not occur if the local sequence has passed the point where "continue" is returned to the instruction controller.

5.13 Figure 31 is a block diagram of the terminal

showing principal functional blocks of the terminal. The terminal contains 11 hardware registers. The logic register, data register, and address register are used by the internal program for logic operations and for access to the data memory. The instruction address register contains program memory addresses. Its contents can be incremented or loaded in the case of program transfers. The mode register and error source register are accessible only by the stored program control. The state of the mode register determines the operating mode of the terminal.

5.14 The error source register records the occur-

rence of errors detected by the various check circuits throughout the terminal. The empty list pointer register, pointer registers A and B, and the list number register are used by the data memory controller for administration of the SU buffers. The control register is a special register used for passing software control information between the stored program control and the terminal. Because it must be accessed by both the stored program control and the terminal, it appears like a pseudo data memory location.

5.15 The memory used in the terminal is a random access integrated field effect transistor

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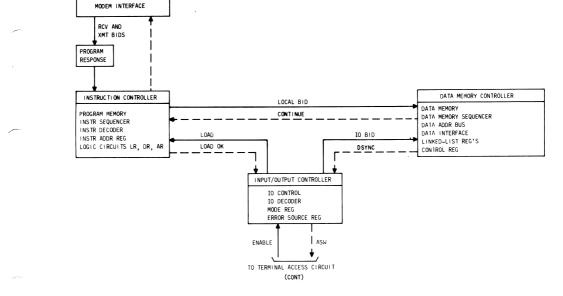


Fig. 11—Terminal Unit Controlled Hierarchy

(IGFET) memory. It is packaged in modules of 128 words by 12 bits per word. All inputs and outputs interface directly with the 1A logic used in the terminal. Timing signals required for the memories are generated in the respective controllers.

5.16 A modem interface circuit provides the I/O port for the serial bit stream to and from the modem. The interface also operates asynchronously with respect to the rest of the terminal. Bids for receive and transmit are generated in response to clock signals from the modem at the bit rate of the data link. These bids appear in the control register where they can be inspected periodically by the internal program. Special receive and transmit instructions are used to transfer data, one bit at a time, between the modem interface and the logic register. The execution of the receive or transmit instruction is used as the acknowledgment signal for the respective bid.

5.17 Bit numbering for data registers and buses starts with one for the leftmost bit. This cor-

responds to the numbering of CCIS SUs. Addresses for data and program memories are numbered from the right starting with zero.

5.18 The theory of operation of the CCIS signaling terminal group is discussed in Section 231-045-405 (Toll CCIS Software Processing). Part 3 of this document includes a description of the functions of the terminal unit itself, which is common to all present systems using CCIS. The principal differences in operation are in the different CONT units required to interface the terminal with the main processor. Details of terminal unit operation may be obtained from this document and CD-1A441-01, the terminal unit circuit description for No. 1 or No. 1A ESS CCIS.

5.19 The administration of the linked list portion of data memory has been referred to several times in this section. Figure 32 shows a layout of the linked list operation in data memory. It is beyond the

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scope of this section to present a detailed description of its operation.

5.20 The linked list operation is common to all systems using toll CCIS. Refer to either CD-1A444-01 or CD-94833-01 for a complete detailed description of its operation.

MESSAGE FORMAT AND CODING

5.21 The format and coding associated with the various CCIS SUs are defined in Part 6 of this document and Section 781-030-100.

6. TERMINAL INPUT/OUTPUT CIRCUIT

- 6.01 The terminal I/O circuit is comprised of connectors and transformers and its basic functions are to:
 - Handle all I/O communications between the CCIS terminal and the ESS processor via the CONT.
 - Provide a digital-to-analog and an analog-todigital interface between the near-end and far-end CCIS terminals, respectively.

6.02 The circuits located on the data terminal basic frame are interconnected with the No. 1 or No. 1A ESS processor as illustrated in Fig. 4. The processor allustrated in Fig. 4. The processor allustrated frame that communication is required by means of enable pulses transmitted from the CPD. When the processor transmits data to the data terminal basic frame, the data is sent to the peripheral function translator . From the translator information is passed to the data terminal basic frame over the binary PUAB. Information requested from the circuits of the frame is returned to the No. 1 or No. 1A ESS processor over SCAB.

6.03 The terminal I/O circuits provide the entrance and exit ports to the data terminal basic frame for the PUAB and the SCAB plus the enables from the CPD. The I/O circuits are comprised of connectors, for interfacing the cable drivers of the frame to the SCAB, and transformers for interfacing the logic circuits of the frame to the PUAB. Each I/O circuit interfaces both the 0 and 1 PUAB and 0 and 1 SCAB to the circuits located in that bay.

6.04 The PUAB is 38 bits; however, only 24 of the 38 bits are used by the CONT of the data ter-

minal basic frame. Each terminal I/O circuit contains the transformers to receive from both PUAB 0 and 1; therefore, each circuit contains 48 transformers. For the implementation of this circuit, the 2650A transformer unit is used. This unit consists of twelve 2645A transformer units assembled in a KS-2024, L1 mounting. The 2645A unit consists of two identical ferrite core transformers assembled into a plastic frame and connected to terminals as shown in Fig. 12A. When a 100-milliampere pulse of 0.5 microsecond duration is applied across terminals OAF and 1AF or 2AF and 3AF, with terminals 0BF and 1BF or 2BF and 3BF connected together, the voltage across terminals 1A and 2A or 1B and 2B will be greater than 1.5 volts when connected to a 510-ohm load. If any signal should appear across terminals 0AF and 1AF or 2AF and 3AF so that the windings are series opposing, little or no output will be provided across terminals 1A and 2A or 1B and 2B. The 14 bits of the PUAB which are not used by the data terminal basic frame are wired through the frame.

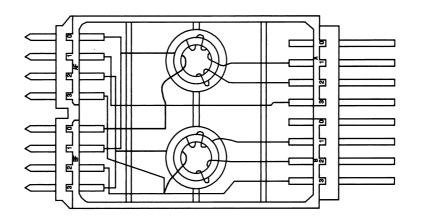
6.05 The scanner answer bus carries 17 bits of information from the data terminal basic frame to the processor. This information consists of 16 bits of data and an all-seems-well signal. The I/O circuit contains connectors to interface data from the cable drivers of the terminal access controllers of the frame to both SCAB 0 and 1.

Transformers are supplied in the I/O circuit 6.06 to receive the enables from the CPDs. These transformers are part of the 2650A units. The CPD requires that enable verify signals be returned from the peripheral unit for some of the enables. In paragraph 6.04, the description of the transformer operation indicates that little or no output occurs when a signal appears across terminals 0AF and 1AF or 2AF and 3AF so that the windings are series opposing. Therefore, the transformer is wired so that the enable verify signal is returned over the same wires that carried the enable from the CPD. This wiring connection is shown in Fig. 12B. Thus, the enable verify signal is applied to the transformer to prevent a pulse on the output terminals.

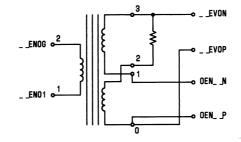
6.07 Six types of enables are received by the data terminal basic frame. Two of these enables, the data terminal frame enables, are the data enable and the opcode enable. These enables are designated as DENab and OENab, where a specifies the controller number 0 or 1, and b specifies the bus number 0 or 1. When these enables are received, an enable verify must be returned to the CPD.

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A. NO. 2645A TRANSFORMER



B. INTERCONNECTION OF ENABLE TRANSFORMER



6.08 The remaining four enables, the frame isolation enables, are the lock babble protect, the unlock babble protect, the set quarantine, and the reset quarantine enables. These enables are designated as LBPa, UBPa, SQa, and RQa, where a specifies the CPD and the controller. When these enables are received, an enable verify is not required to be sent to the CPD. The enables SQa and RQa control the quarantine functions of the terminal access controllers. When in the quarantine mode, the terminal access controller is isolated from the terminals. This mode is entered when problems are detected in the terminal access controllers. The enables LBPa and

UBPa control the lockout circuitry that isolates the controllers from the SCAB.

7. SUPPORT EQUIPMENT

POWER CONTROL

A. Purpose

- 7.01 The purpose of the power control circuit is to:
 - Provide a means of controlling power to terminals and CONTs on the data terminal frame

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- Provide indications via the scanner to the processor indicating the power status of the various units on the frame
- Furnish visual indication of the power status of the terminals and CONTs
- Furnish a means of testing the power converter.
- **7.02** The power control circuit of the basic frame consists of:
 - Five ED-1A370-30 power control units per bay
 - One ED-1A370-31 timer unit per bay
 - One ED-1A370-32 audible alarm unit (bay 0)
 - One ED-1A370-33 minor alarm (MN) and converter test unit (bay 1)
 - Four or eight ED-1A371-30 data set power control units.

These units are arranged in bays 0 and 1 of the basic frame as shown in Fig. 13.

7.03 Four ED-1A370-30 power control units are used to perform the power control functions in a supplementary terminal frame. These units are arranged in the first and second supplementary frames as shown in Fig. 13. Figures 14 and 15 are block diagrams of power control bay 0 and bay 1 of the basic frame and Fig. 16 is a block diagram of the supplementary frame. These figures show the functional arrangement of the power control circuitry within each frame, as well as the frames interaction. Refer to CD- and SD-1A445-01 for a detailed description of the power controller circuits.

B. General Description

7.04 This circuit is designed to be used for each bay of the data terminal basic frame as well as each of the two supplementary frames. The common

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denominator in all applications is a power control circuit pack for each data terminal and each data set. These CPs are used to turn on the converters which power their respective units and to monitor fuse alarm conditions.

7.05 Three additional circuit packs are provided on each bay of the basic frame. The first two (PC and TIMER) are used for power control and sequencing of the controller. The AUD ALM circuit pack on bay 0 is used to collect all major alarms both from the basic and supplementary frames. The MN ALM circuit pack on bay 1 is used to collect minor alarms and test the power converters on the frame. The entire circuit operates from +24 volts.

7.06 Each terminal and controller power control circuit pack consists of one KS-19223, L3 key,

two relays, three lamps, and associated solid state logic. The KS key consists of three sets of contacts. Each position is mechanically held after that position is depressed. The key also has mechanical sequencing so that the outer positions can only be reached by first depressing the center position.

7.07 Each data set power control circuit pack consists of a toggle switch, one light-emitting diode, and associated solid state logic.

7.08 The TIMER circuit pack consists of two relays, one lamp, and associated solid state logic to control the turnon and turnoff time of the controller unit.

7.09 The AUD ALM circuit pack consists of one relay, two lamps, one KS-19223,L3 key, and associated solid state logic.

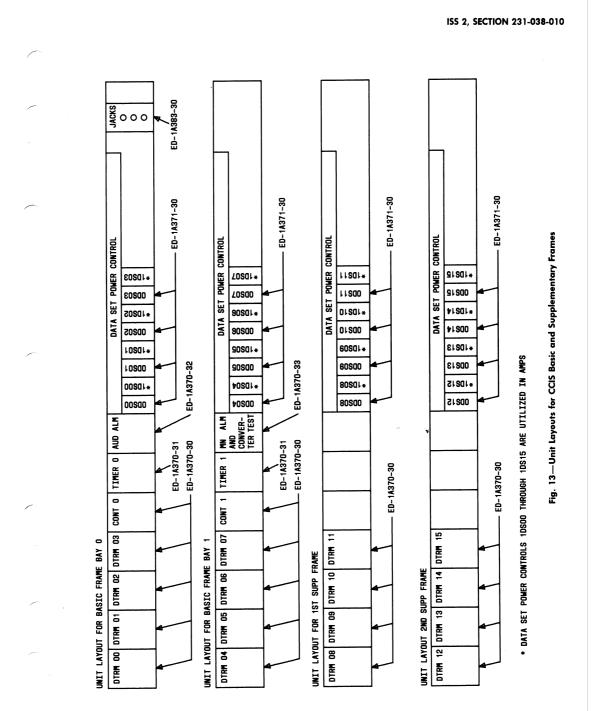
7.10 The MN ALM circuit pack consists of one relay, three lamps, one KS-19223,L7 key, and associated solid state logic.

C. Power Application—Data Terminal and Controller

7.11 The primary purpose of the terminal and controller power control circuit pack is to provide +24 volts to the power converters (start signal) which turn the converters on. This is accomplished through the break contact of the power relay.

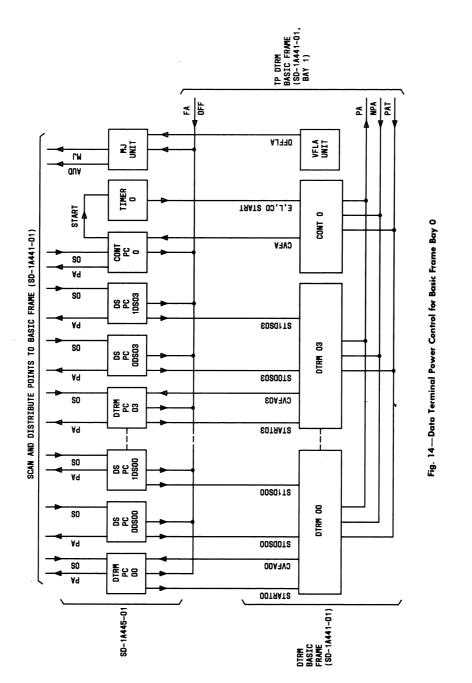
7.12 When the circuit is in the off state, the power relay is energized, and the OFF NOR, OS, and PWR OFF lamps are lighted. Depressing the REQ

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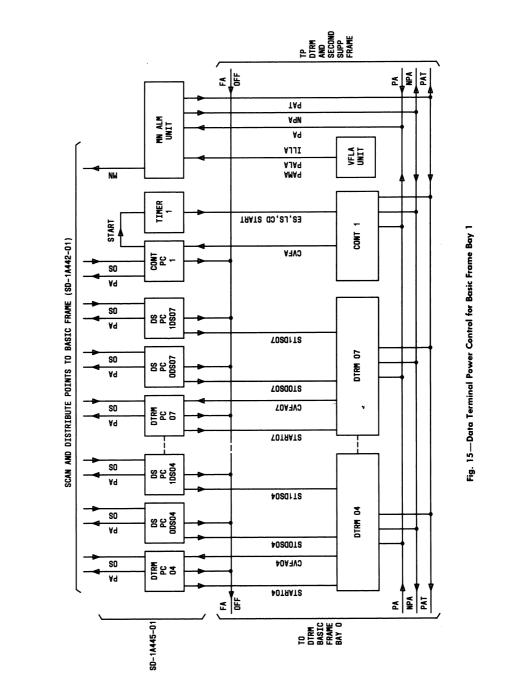


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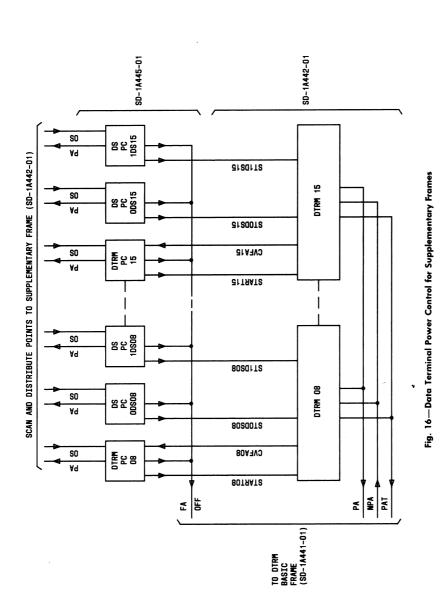
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INH key extinguishes the PWR OFF lamp and turns power on by dropping the power relay but does not return the unit to normal. Depressing the NOR key extinguishes the OFF NOR lamp and, via the scan point change, requests the processor to run diagnostics on the logic unit. Logic unit refers to any terminal or controller unit on the frame. If the diagnostic run is successful, the processor returns the logic unit to normal and extinguishes the out-of-service (OOS) lamp.

D. Power Removal—Data Terminal and Controller

7.13 In the normal state (ie, power on and NOR key depressed), the power and FA relays are deenergized and all lamps are off. To start the power removal sequence, the REQ INH key is depressed. This lights the OFF NOR lamp and requests the processor, via scan point changes, to take this logic unit out of service. The processor honors this request by grounding the OS lead via the signal distributor. This lights the OS lamp. Note that power has not been removed by this action. The OFF key is next depressed which removes power via the power relay. With power removed, the power relay is up and the OFF NOR, OS, and PWR OFF lamps are lighted. An OFF signal is also given to the AUD ALM circuit pack.

E. Timers

7.14 The application of 3 volts to the controller unit requires sequencing. In addition, the bus cable drivers must have 24 volts applied after the first part of the controller logic is powered. The start signal provided by the controller power control circuit pack starts charging two resistance-capacitance circuits in the timer circuit pack. The time constant of the first RC circuit is small and brings up the ES relay in about 5 milliseconds. The time constant of the second RC circuit is very large and the LS relay will operate in about 1 second.

7.15 When the start signal is removed, a diode becomes forward biased and discharges the second RC circuit. This quickly drops the LS relay. The first RC circuit slowly discharges and drops the ES relay. This time constant is set for about 1 second.

7.16 The relay will remain operated for about 1 second after the removal of the start signal. The above action provides signals which go to the controller A converter, B converter, and cable drivers. This is a first-on, last-off timer.

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F. Data Set Power Control

7.17 Power to each data set is provided by the associated data set power control circuit pack. The circuit pack contains a toggle switch to apply +24 volts to the data set. Power to the data set is monitored and a scan indication is provided to the processor when power is removed or lost. In addition, an OFF indication is provided to the AUD ALM CP.

G. Scan Points

7.18 The power state of the terminal and controller is sent to the processor via the A and B scan points. Table F indicates the four possible scan states. The scanner ferrods are saturated when the circuit is in the normal state.

TABLE F

TERMINAL AND CONTROLLER POWER STATES

CONDITION	CIRCUIT	I STATE	LOGIC STATE				
	A	В	A	В			
Normal	Closed	Closed	0	0			
FA	Open	Open	1	1			
Off	Open	Closed	1	0			
REQ INH	Closed	Open	0	1			

^{7.19} The data set power control circuit pack provides one scan point to the processor to indi-

cate the power state of the data set being controlled. In NORMAL condition, the circuit state is closed and the logic state is zero (0). In the fuse alarm condition, the circuit state is open and the logic state is one (1).

7.20 The AUD ALM CP provides one scan indication to the processor to indicate that the CP is not in the NORMAL state. Depressing the NORMAL key will reset this scan point.

7.21 The MN ALARM CP provides one scan point indication to the processor to indicate a minor alarm condition exists on the data terminal frame. This scan point can be reset by removing the primary cause of the minor alarm and depressing the ALM RLS key.

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H. Signal Distributor Points

7.22 The processor responds to the terminal or controller power control circuit pack by closing a signal distributor point when the REQ INH key is depressed. This lights the OOS lamp on this circuit pack as well as an OOS light emitting diode on the unit which has been taken out of service.

7.23 The send data point associated with the data set power control circuit pack is also controlled by the processor, but an OOS request for each data set must be entered via a TTY message. When this send data point is set, the lamp on the data set power control circuit pack is turned on indicating that power may now be removed. Also, this lamp will be turned on by manual data set power removal or when the data set fuse is blown.

I. Converter Alarms

7.24 The converters which power the terminal and controller units provide two types of alarms. A fuse alarm (FA) indicates that the particular converter has shut down because of an internal fault or an overvoltage or overcurrent condition. The result of this action is to drop the converter output voltage to zero, apply +24 volts on its FA lead, and light a light emitting diode on the converter. This condition can be cleared by clearing the fault and/or replacing the converter and power cycling.

7.25 One other condition can cause a 3-volt converter to shut down and give an FA alarm. This will occur if the loop resistance from converter to the 3-volt load exceeds 35 milliohms. This can be caused by cold solder joints or inadequate contact of the 3-volt distribution systems.

7.26 A power alarm condition indicates the converter output voltage is out of tolerance but not zero. Under this condition, the logic unit powered by this converter may be operational. The converter contains high- and low-voltage monitors to detect a power alarm condition and these monitors must be exercised to make sure they are operational. A power alarm condition results in lighting the light emitting diode on the converter and applying +24 volts to its power alarm lead. The complement of the power alarm lead is provided on the no-power alarm lead. The no-power alarm lead is normally high, (ie, +24 volts through a 2000-ohm resistor). The no-power alarm lead drops approximately 1 volt when a power

alarm occurs. Grounding the no-power alarm lead will reset the converter light emitting diode. A power alarm test lead is also provided to permit the exercising of the converter monitors. A power alarm condition can be cleared by replacing the faulty converter and/or depressing the ALM RLS key. The power alarm features are also provided on the FB152 CP found in each terminal and controller unit. This circuit pack can be considered like a converter for power alarms.

J. Fuse Alarms

7.27 There are two categories of fuses which are used to power the data terminal frames. The first cateogry is not service affecting. These include the fuses powering the VFLA units and the power control units. A failure of any of these fuses will result only in a minor alarm. All other fuses on the frame are service affecting. The loss of any one of these fuses will result in a fuse alarm condition and an office major alarm.

7.28 When a fuse alarm condition occurs, the FA relay in the power control circuit pack sets the A and B scan points (to 1,1), energizes the power relay which removes power from the logic unit, lights the fuse alarm lamp and sounds the office major alarm via the AUD ALM circuit pack. The office major alarm can be silenced by depressing the OFF key on the AUD ALM circuit pack. The fuse alarm relay on the power control circuit pack can be energized by any of the following conditions:

(a) Blowing an associated 48-volt fuse which feeds the converters. This results in 48 volts being applied to the 48-FA lead of the power control circuit pack.

(b) Blowing an associated 24-volt alarm fuse. This results in +24 volts being applied to the 24 FA lead of the power control unit.

(c) A fuse alarm condition given by any converter which has shut down as a result of an overvoltage or overcurrent condition. This results in +24 volts being applied to the CVFA lead of the power control circuit pack.

 7.29 When -48 volts is applied to the 48 FA lead, transistor Q1 cuts off. This action energizes
 transistor Q2 which energizes the FA relay. When +
 24 volts is applied to the 24 FA or CVFA lead, transis-

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tor Q2 energizes which in turn energizes the FA re-

7.30 Loss of a data set fuse will result in a major alarm by the application of +24 volts to the AUD ALM CP FA lead. The monitor on the data set power control circuit pack will sense the loss of power and set its scan point via the opto-isolator on this circuit pack.

K. Major Alarms

lay.

7.31 The AUD ALM circuit pack collects FA alarms and off indications from each logic unit. A fuse alarm condition will energize the major alarm relay which provides the office major alarm. The office major alarm can be silenced by depressing the OFF key on the AUD ALM circuit pack.

7.32 The OFF indications provided by the terminal, controller, and data set power control circuit packs (+24 volts) are used to convert the -48 volt OFF indication from the VFLA units to a +24-volt signal which in turn lights the above lamps.

L. Minor Alarms and Power Alarm Test

7.33 The MN ALM circuit pack collects all power alarm indications from all converters, FB152 circuit pack and minor fuses. In addition, this circuit pack provides a means of testing the power converters and FB152 circuit packs.

7.34 Blowing a power control fuse places +24 volts on the PAAF or PABF lead which turns on Q1, lights the PCF lamp, and sets the MN scan point. The scan point is normally closed. When Q1 turns on, the base of Q4 is pulled toward ground and turns off Q4. This action removes drive from the opto-isolator which in turn opens.

 7.35 A power alarm condition from any converter or FB152 CP places +24 volts on the PAA-PAF leads. This turns on Q5, lights the CV lamp, and sets the MN scan point.

7.36 The VFLA unit can provide up to three minor alarms. Normally, when the ILLA lead is grounded, the PACA and PAMA leads are opened. Removing any VFLA CP will break a daisy chain removing the ground from the ILLA lead. This causes Q2 to turn off and Q3 to turn on; which in turn lights the LA lamp and sets the MN scan point. Blowing a

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VFLA fuse places -48 volts on the PALA lead turning Q2 off and Q3 on. Blowing a maintenance amplifier fuse places +24 volts on the PAMA lead turning Q3 on.

7.37 Depressing the power alarm test key on the

MN ALM CP for 3 seconds tests the monitors on the FB152 CP and converters by grounding the power alarm test lead. This action does not affect the converter output voltage. All converters and all FB152 CPs on the basic frame and the two supplementary frames are tested simultaneously. A successful test will result in lighting the CV lamp, setting the MN scan point, and lighting the lightemitting diodes on all converters and all FB152 circuit packs. Any light-emitting diode which does not light indicates a faulty or marginal unit.

7.38 Depressing the ALM RLS key for 3 seconds grounds the no-power alarm lead. This action resets all light emitting diodes on the basic and two supplementary frames, extinguishes the CV lamp, and resets the MN scan point.

7.39 The no-power alarm relay is used as a slave to ground the no-power alarm leads. This relay has a larger current capacity than the ALM RLS key.

FUSE PANEL

7.40 The fuse panel in each bay of the data terminal basic frame provides dual +24 and -48 volt power buses and associated fuse holders for power distribution fuses.

FILTER UNIT

7.41 The filter units, one per 24-volt power bus and one per 48-volt power bus, contain capacitive filter circuits that filter each 24-volt and each 48-volt power feeder from the power distributing frame.

AC OUTLET

7.42 An ac outlet is located on each bay to provide 110-volt ac power.

POWER SUPPLIES

- **7.43** The power supplies required for the CONT and the DTRMs and their various voltages are described below.
- 7.44 The DTRMs require dc input power of 3VA plus or minus 1 percent, 3VB +12VA plus or

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minus percent, and 24 plus or minus 10 percent ALM are supplied to the CCIS terminal by the CCIS terminal basic frame circuit. The 3-volt power is connected to separate power backplanes and the return lines are all connected to a common ground plane. The power is then distributed to two FC21 circuit packs. The 24-volt alarm power is applied to the FB152 circuit pack directly from the input connecting circuit. The 12V, 3V REG, and 3V REF are supplied by the terminal unit to the power converters. The power converters are located within the data terminal. The terminal also requires 55 watts of 3-volt power for logic and memories.

7.45 The CONT requires two 3-volt converters to supply the power required by the 3-volt logic. Power supply J87409A is a dc-to-dc converter circuit that provides a regulated nominal +3-volt ,0-to-8-ampere output from a nominal 48-volt source. Control functions of the converter receive power from a 24-volt source. Each converter feeds a portion of the backplane of the CONT. The 3-volt output of the converter is filtered by a capacitor circuit located on the FC21 circuit pack.

- 7.46 The 3-volt output of the converter is regulated. The regulator requires a 3.030-volt reference which is generated on the FC21 circuit pack. Reference voltage 3REFA is achieved by a resistor network that divides the regulated 12-volt reference generated on the FB152 circuit pack. In addition to generating the 3-volt reference, the circuitry on the FC21 circuit pack monitors the voltage applied to the backplane and, through a resistor, transmits this voltage to the converter as 3REGA. The regulator compares 3REFA and 3REGA and adjusts the 3-volt output that is applied to the backplane.
- 7.47 The converter contains test circuitry for checking the regulation limits of the converter. This test is initiated by grounding the input power alarm test lead. If the circuitry is working, this action results in a power alarm indication; ie, the signal on the power alarm lead goes high and the signal on the no-power alarm lead goes low.

7.48 If the converter shuts down because of an overvoltage or an overcurrent condition, the converter fuse alarm lead comes up.

7.49 An interlock is provided between the two converters for the CONT. This interlock prevents the powering up of only one converter. If one of the

converters is not plugged in, the signal on the converter interlock lead prevents the other converter from being powered on. If one of the converters is not plugged in, the power control circuitry will bring up the fuse alarm.

8. MAINTENANCE CONSIDERATIONS

A. Link Security

- 8.01 Link security is a module within the CCIS program concerned with CCIS data link administration and recovery. A minimum of two CCIS data links (A links) are provided per switching office. Each A link connects the switching office with one of the two signal transfer points within its direct distance dialing region. (For example, A11 and A12 from SO1 in Fig. 17.) Through translation assignment, data link pairs are formed so a link pair provides access to the CCIS signaling network via both STPs. A pair of data links has signaling capacity for up to 2250 CCIS trunks. The components of a data link pair are shown in Fig. 18.
- 8.02 The primary functions of link security are:
 - Route outgoing messages from the switching office to the CCIS signaling network based on signaling network status tables.
 - (2) Control maintenance activity on the CCIS data links with emphasis on maintaining a viable signaling path for each CCIS trunk.

8.03 Under central control program control, a data terminal can be operated in several maintenance states, a modem can be switched between voice frequency links VFLA and VFLB, and a VFL access circuit can be used to provide maintenance access to a VFL. The A links of a pair are normally operated in a load sharing mode; that is, each link carries approximately 50 percent of the signaling load directed toward the link pair. The link pairs are engineered so a single link has enough capacity to carry all the assigned signaling load for the link pair should the other member link be removed from active service.

- 8.04 Five extended maintenance procedures are supported by link security:
 - (1) Office recovery
 - (2) Normal link recovery
 - (3) Emergency link recovery

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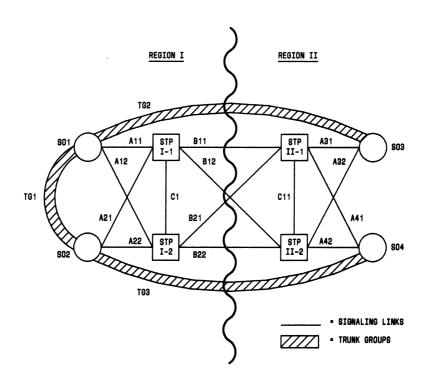


Fig. 17—PRedundant CCIS Network Structure

- (4) Manual link recovery
- (5) Manual VFL transfer.

8.05 The office recovery procedure is automatically initiated in a switching office Phase 6 or higher; the data terminals are initialized and the data links are placed into service as quickly as possible.

8.06 The normal link recovery procedure is automatically initiated when a single link failure occurs, or when a link is released from an unavailable condition and the mate link is currently active. Before being returned to active service, the recovering link is monitored for 18 seconds to ensure acceptable transmission signaling error rates, and a CCIS signaling network status update is completed.

8.07 The emergency link recovery procedure is automatically initiated when a double link failure occurs or when a link is released from an unavailable condition and the mate link is not currently active. Before being returned to active service, the recovering link is monitored for only 3 seconds and an abbreviated restoral sequence is followed.

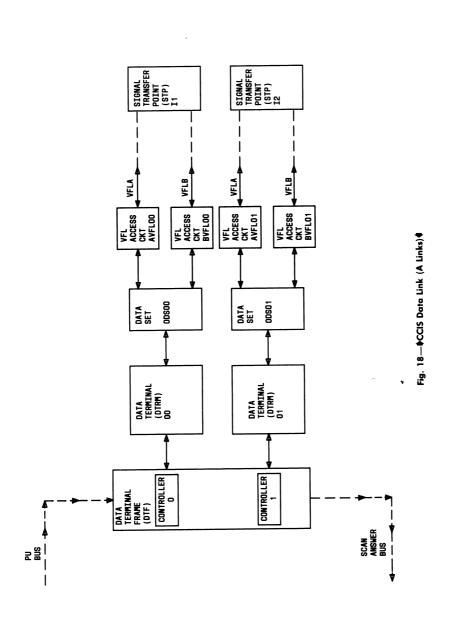
8.08 The manual link recovery procedure, manually initiated from either the switching office or STP, supports maintenance of the data link without normal signaling traffic.

8.09 The manual VFL transfer procedure is manually initiated from either the switching office or STP and supports changing the VFL in service between VFLA and VFLB when the link is active.

8.10 Input message DTRM-REQ- is used for manipulation of the DTRMs. Input message

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VFLK-REQ- is used for manipulation of the modems, VFLs, and VFL access circuits.

8.11 Output message LS01 informs maintenance personnel of automatically initiated link recovery procedures, the progress of manually initiated procedures, and DTRM status changes. Output message LS02 informs maintenance personnel of high transmission error rates on active links. Output message LS03 is used to print out the contents of the link security data link status tables when requested manually. Output message LS04 is used to print out the contents of link security status and input data when a data link is reinitialized.

B. Signaling Link Maintenance Facilities

8.12 The maintenance control and coordination of the CCIS signaling network and its parts generally follow the plan currently in use in the Bell System and is commonly referred to as the control office plan. Inherent in the plan is a hierarchy of maintenance control and assignment of responsibilities that ensure orderly administration of the network. For No. 1 ESS toll CCIS, as in all toll CCIS applications, the STP has some automatic signaling link testing capabilities; however, the maintenance control office for the signaling link is the No. 1 ESS switching office.

8.13 Automatic procedures are provided to assist in recovery from data link troubles. The objectives are to sectionalize a failure to the terminalmodem combination at either end or to the interconnecting VFL without manual intervention. This permits repair and return to normal service with a minimum of human interoffice communication.

8.14 A loop-around path is provided at the ESS to allow the STP to perform VFL testing. Also, the VFL access circuit provides switched access from the switching office test panels to the VFL via a shared maintenance bus. Network access circuits (SD-1A176-2-wire or SD-1A397-HILO) are required to interface with the VFL access circuits.

8.15 Periodic testing of the standby VFLs is accomplished on a routine basis from the STP. To initiate this test, the STP sends a test-standby-VFL signal to the switching office. In response to this signal, the switching office applies a loop to the standby VFL and transmits a test-standby VFL signal to the STP. The STP then performs the test and sends the

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results to the switching office via a VFL test-passed signal or a VFL test-failed signal. This test can also be initiated from the switching office via TTY input. The link security routine first applies the loop and then sends a test-standby VFL signal to the STP. The STP then performs the test and returns the result.

9. DATA TERMINAL AND VOICE-FREQUENCY LINK STATE DESCRIPTIONS

9.01 •The following paragraphs describe the various maintenance states which can be established within the DTRM and/or VFL either under system control (automatically) or via TTY messages (manually).

DATA TERMINAL STATES

9.02 The DTRM may exist in one of five automatically initiated states (including the ACTIVE state) or one of four manually initiated states, as shown in Fig. 19. A summary of these states is given in Table G. These states may be determined via the maintenance TTY by using the DTRM-REQ-STS input message (see paragraph 12.09) to obtain an LS01 STATUS output message which gives the current DTRM maintenance state. A detailed explanation of each of these states is as follows. See Fig. 20 through 23 for state diagrams.

A. Automatic (AUTO) States

- **9.03** Active: The, DTRM carries normal traffic. The mate DTRM may be either ACTIVE or in one of the other maintenance states.
- **9.04 AUTO OOS Fault:** The DTRM failed an automatic (system requested) diagnostic. This state occurs when the system automatically removes a DTRM from the ACTIVE state and attempts a diagnostic which either fails or aborts. Once the system is in this state, if a manually requested diagnostic occurs and passes, the DTRM will be placed into the AUTO OOS REMOVE state from which normal link recovery will be initiated. If the diagnostic fails or aborts, the DTRM will return to the AUTO OOS FAULT state.

9.05 AUTO OOS Remove: This state occurs when the system automatically removes a DTRM from the ACTIVE state, as when a single or double link failure occurs. Also, if the DTRM has been manually removed from the ACTIVE state and

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SECTION 231-038-010 ACTIVE 32 AUTO AUTO AUTO AUTO 00S POWER 00S TROUBLE 00S 00S FAULT REMOVE ALARM ANALYSIS 33 34 35 36 AUTOMATIC MANUAL MAN MAN 005 005 REMOVE FAULT 38 37 UNAV UNAV POWER FORCED 40 39

Fig. 19—DTRM States

a subsequent restoral is requested, it must first go through the AUTO OOS REMOVE state to allow restoral to the ACTIVE state via normal link recovery.

9.06 AUTO OOS Power Alarm: This state is reported submatically via the LS01 output

message when a fuse alarm occurs on the DTRM. This state can be initiated from any automatic DTRM maintenance state.

9.07 AUTO OOS Trouble Analysis: The DTRM is placed in this state when an automatic diagnostic request is initiated. If the diagnostic passes, the DTRM is returned to the AUTO OOS REMOVE state; if the diagnostic fails, the DTRM is placed into the AUTO OOS FAULT state.

B. Manual (MAN) States

9.08 MAN OOS Fault: In this state, the DTRM has been manually removed from the ACTIVE state and is not operating but is available if the mate DTRM fails. To reach this state from ACTIVE, the DTRM must first be placed in the MAN OOS RE-MOVE state (explained in paragraph 9.09). To be restored to ACTIVE from this state, the DTRM must go through the AUTO OOS REMOVE state. From this point, the DTRM is restored to ACTIVE via normal link recovery.

9.09 MAN OOS Remove: In this state, the DTRM has been manually removed from the ACTIVE state and is operating for maintenance only, but is available if the mate DTRM fails. This state

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\$TABLE G

T/M STATE NUMBER	NAME	DESCRIPTION
32	Active	Carrying normal traffic
33	AUTO OOS FAULT	Failed diagnostic (automatic request)
34	AUTO OOS REMOVE	Performing automatic link recovery
35	AUTO OOS POWER ALARM	Fuse alarm
36	AUTO OOS TROUBLE ANALYSIS	Diagnostic request (automatic)
37	MANUAL OOS FAULT	Not operating; but available if mate DTRM fails
38	MANUAL OOS REMOVE	Operating for maintenance only, but available if mate DTRM fails
39	UNAVAILABLE POWER OFF	Power off
40	UNAVAILABLE FORCED	Not operating; not available if mate DTRM fails

DATA TERMINAL STATES

can be reached directly from the ACTIVE mode; however, to return to the ACTIVE mode from this state, the DTRM must go through the AUTO OOS RE-MOVE state and be restored via normal link recovery.

9.10 Unavailable Power Off: In this state, the power has been removed from the DTRM for major maintenance or other purposes. The DTRM is not available if the mate DTRM fails. From this state, the DTRM may be placed in any of the other manual states, and, as before, the DTRM must go through the AUTO OOS REMOVE state before being restored to the ACTIVE state.

9.11 Unavailable Forced: In this state, the DTRM is not operating and is not available if the mate DTRM fails. This state is useful for maintenance functions which require power and also the assurance that the system will not attempt to place the DTRM into ACTIVE service. As for all previous manual states, it must go through the AUTO OOS REMOVE state before it can be placed in ACTIVE service via normal link recovery.

VOICE FREQUENCY LINK STATES

9.12 There are two VFLs (designated VFLA and VFLB) associated with each DTRM of a

DTRM pair. Only one of these VFLs is in service at any time. Interface from the DTRM to both VFLs is accomplished through a data set to which two VFL access circuits are connected. Each VFL access circuit corresponds to a VFL (a or b). To assure a viable signaling path and to provide some automatic maintenance functions, there are several automatic maintenance states and modem/VFL access, circuit/VFL configurations that can be initiated by the system. For maintenance purposes, there are several manually initiated states which can be initiated via the VFLK-REQ-input message. The current status of the VFL, VFL access circuit, and modem may be determined by using the VFLK-REQ-STS input message to obtain an LS01 STATUS output message which gives status information. An explanation of each of the states is as follows (see Fig. 24 and 25 for VFL state diagrams). A summary of the VFL states is given in Table H.

A. Automatic States

- **9.13 ACTIVE:** In this state, the VFL marked ACTIVE is carrying normal signaling traffic. The mate VFL is in one of the other possible states.
- **9.14 STBY/RDY** (**STANDBY/READY**): The VFL identified as being in this state is not carrying call traffic but is connected to the DTRM. This

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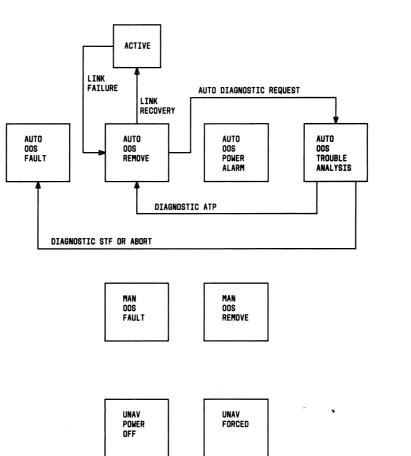


Fig. 20—♦Automatic DTRM State Transitions, Normal Link Recovery♥

is the state which a normal nonactive VFL would occupy. The nonactive VFL may be put directly into the ACTIVE state from this state via normal link restoral. Also, to be placed in the ACTIVE state from any other state, a VFL must pass through the STBY/ RDY state.

9.15 STBY/DLY (STANDBY/DELAYED):

The VFL identified as being in this state is not carrying call traffic and not connected to the DTRM.

B. Manual States

9.16 UNV/REL BELEASED): The

(UNAVAILABLE/

RELEASED): The VFL identified as being in this state is not available for service and has its VFL access circuit released. This state is used during the manual test panel transmission test to take down the connection from the VFL to a trunk link network appearance and is initiated by the VFLK-REQ-REL input message.

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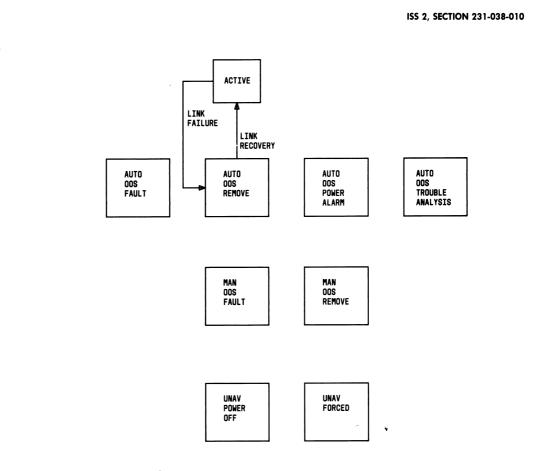


Fig. 21—♦Automatic DTRM State Transitions, Double Link Failure (Emergency Restart)♦

9.17 UNV/OPR (UNAVAILABLE/ OPERATED): The VFL identified as being in this state is not available for service and has its VFL access circuit operated. This state is used during the manual test panel transmission test to set up a connection from the VFL to a trunk link network appearance and is initiated by the VFLK-REQ-OPR input message.€

10. DATA LINK FAILURE REPORTING AND ANALYSIS

10.01 The primary method for reporting failures of the CCIS data link is via TTY output mes-

sages. The LS01, 2, 3, and 4 messages are used to report the status of both automatic and manually initiated procedures and configuration changes. These messages are described in the following paragraphs.

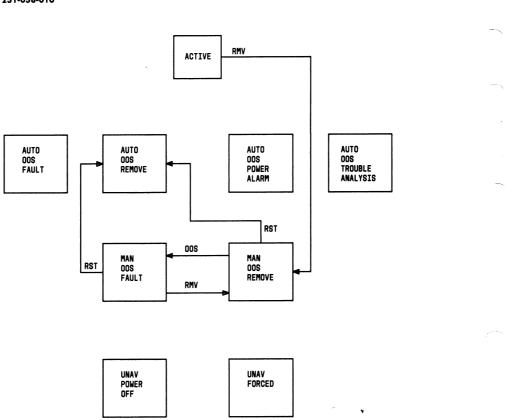
Note: For a detailed explanation of the following message formats and associated data fields, see IM-1A001.

LS01 OUTPUT MESSAGE

10.02 The LS01 output message prints the current status and configuration of a CCIS DTRM

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and its associated voice frequency links (VFLA and VFLB). It is printed in response to a significant manual or automatic status and/or configuration change. It is also printed in response to the DTRM-REQ-STS input message.

- **10.03** The following information is provided in the LS01 printout:
 - Terminal pair to which the DTRM is assigned
 - Member of terminal pair to which DTRM is assigned

- DTRM type indicator
- Member number of DTRM
- Which VFL (a or b) is connected through to the DTRM
- Data link maintenance procedure currently being performed or last procedure performed
- Which end of the data link is in control of the maintenance procedure being performed

Nortel Spectrum Peripheral Module Quick Reference Guide

Spectrum Peripheral Module Overview

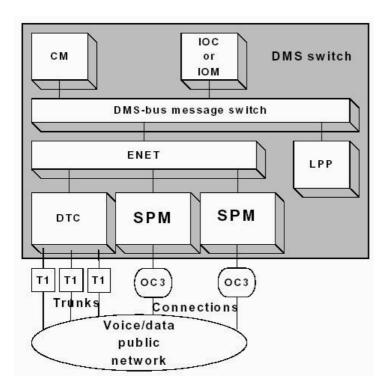
The DMS–Spectrum Peripheral Module (SPM) is functionally equivalent to a Digital Trunk Controller (DTC) for interswitch trunks. It provides Common Channel Signaling #7 (CCS7) and Per–Trunk Signaling (PTS) speech and data trunks on TR–782 compliant OC–3 carriers. Internally, all trunks are treated as DS–0s or as sets of DS–0s.

The SPM is a set of information–processing modules that provide telecommunications switches with direct access to Optical Carrier (OC) networks. The basic mechanical element of the SPM consists of a dual–shelf assembly that is mounted to a common backplane. A shelf assembly contains two identical shelves. Each shelf can contain up to 15 information–processing modules that plug into the backplane. The backplane provides the electrical interconnection between the modules. The modules contain circuit packs that perform a variety of functions from supplying electrical power to providing optical connections to a high–speed transport network. SPM modules also provide some call–processing and high–speed carrier capabilities. In addition to the SPM used for call processing on the DMS switch, which is the focus of this *Quick Reference Guide*, there are two additional types of SPMs classes.

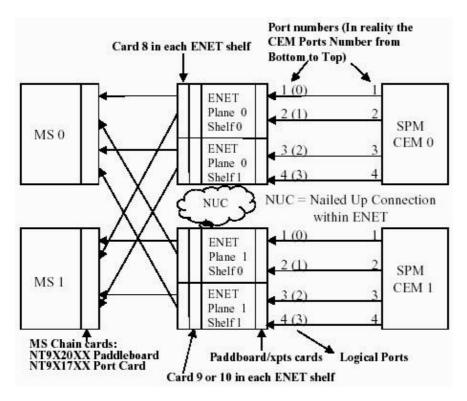
- Interworking (IW) SPM Class This type of SPM hosts off the DMS Enhanced Network (ENET) and bridges the ATM traffic into and out of the DMS Time Division Multiplexing (TDM) network. The SPM of this class does not perform call processing. It essentially works as a speech path connection server.
- Succession Multi-Service Gateway 4000 (SMG4000) SPM Class This type of SPM communicates with the DMS Computing Module (CM) through the ATM network, serving as a distributed access point to DMS call processing capability.

Spectrum Peripheral Module Architecture

The DMS Call Processing Class SPM and the DTC within the DMS Switching Architecture



Spectrum Peripheral Module to Enhanced Network Connectivity

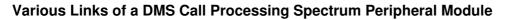


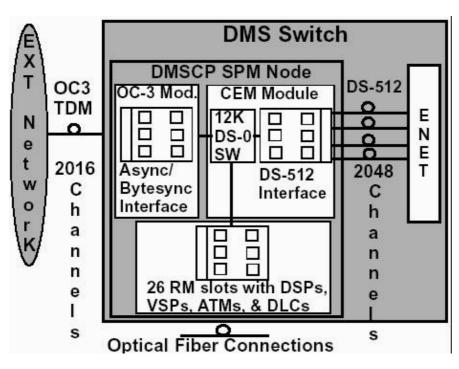
Note: Each SPM Common Equipment Module (CEM) card has four DS–512 ports which are cabled via fiber straight from the front of the CEM cards to ENET planes using NT9X40DA Paddleboards. Then from the ENET via existing DS–512 fibers to the Message Switch (MS).

Connectivity Notes for Enhanced Network and Message Switch

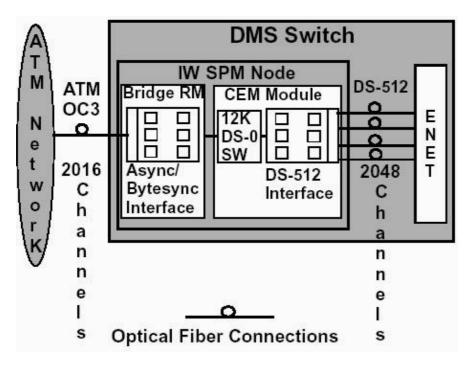
- Note 1: If you suspect the Nailed–Up Connection (NUC) within the ENET is a problem, Busy (BSY) and Return–to–Service (RTS) the crosspoint card the SPM is tied to. An unstable NUC is usually indicated by a bouncing or System Busy (SYSB) message switch port.
- Note 2: Understand what cards 8, 9, and 10 within the ENET are used for. Card 8 is the interface to the Message Switch Chain Cards. Card 9 buffers messages for peripherals coming from odd crosspoint slots and Card 10 buffers messages for peripherals coming from even crosspoint cards. (In some instances Card 10 on shelves other than shelf 0 may not be installed. That is O.K. if you do not have any even crosspoint cards on that particular shelf).
- Note 3: Translating Card 8 of the ENET will give you the appropriate MS Chain Card. You can then post the chain card at the MS level and translate on the card to see what actual MS port the message channel is tied to.
- Note 4: An SPM will have eight message ports, four per plane. An example of an ENET two-shelf per plane office connectivity to an MS would be:

MS 0 slot 6	ENET PL 0 Sh 0	MS 1 slot 6	ENET PL 0 Sh 0
MS 0 slot 7	ENET PL 0 Sh 1	MS 1 slot 7	ENET PL 0 Sh 1
MS 0 slot 8	ENET PL 1 Sh 0	MS 1 slot 8	ENET PL 1 Sh 0
MS 0 slot 9	ENET PL 1 Sh 1	MS 1 slot 9	ENET PL 1 Sh 1





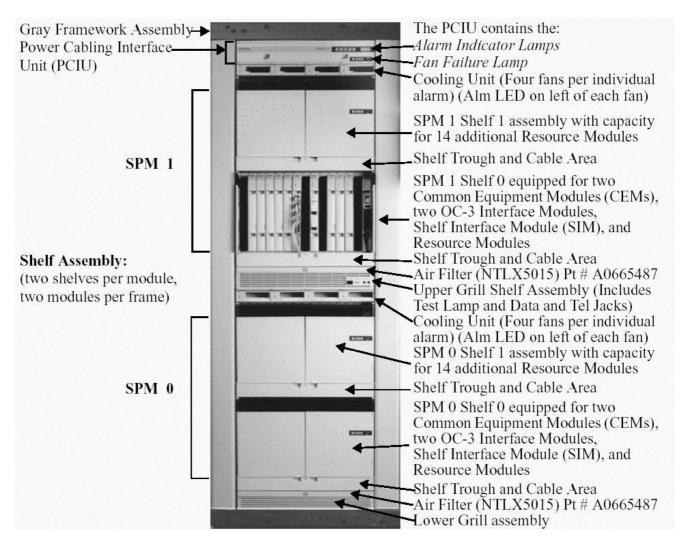
Various Links of an Interworking Spectrum Peripheral Module



SPM Hardware

NTLX91BA Frame Layout for a 4–Slot High–Speed Backplane

Note: The NTLX91BA frame allows for ATM when it is available.



Note: For a description of the alarm indicators for the frame and Resource Modules (RM), see the "LED Alarm Indicators" section, or see NTP 297–1771–550, *SPM Hardware Maintenance Reference Manual*.

Spectrum Peripheral Module Frame Components

SPM Frame Components	
Frame Hardware Item	Product Engineering Code
SPM Shelf Assembly 2 per SPM frame AA = 2 high-speed slots BA = 4 high-speed slots	NTLX51XX
SPM Backplane Assembly XX = 01 for 2 high-speed slots XX = 11 for 4 high-speed slots	NTLX52XX
SPM Mechanical Assembly 1 per shelf	NTLX5101
Cooling Unit Assembly 2 per frame	NTLX55XX
Fan Assembly Unit 4 per cooling unit	NTLX56XX
Air Filter Assembly 2 per frame	NTLX5015
Air Filter Tray Assembly 1 per shelf	NTLX5016
Power Cabling Interface Unit 1 PCIU per SPM frame	NTLX57XX
Contains the following: Alarm Card Assembly 1 per PCIU	NTLX58XX
Fan Management Unit Assembly 2 per PCIU	NTLX59XX
Upper Grill Assembly 1 per frame	NTLX5010
Lower Grill Assembly 1 per frame	NTLX5011

-End-

Spectrum Peripheral Module Diagram

Alarm	ı Indic		/ ۸۸ Ρ			g Unit				ated a: nits)	bove	SPINI)	
		FA	N 1	Δ	FA	N 2		FA	N 3		FA	N 4		
RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	SIM
1-S	1-S	3-S	3-S	3-S	3-S	1-S	1-S	3-S	3-S	3-S	3-S	3-S	3-S	в
DLC	DLC	VSP	VSP	VSP	VSP	DLC	DLC	VSP	VSP	VSP	VSP	VSP	VSP	LX61
LX72 for	LX72 for	LX66 or	LX66 or	or	LX66 or	for	LX72 for	LX66 or	LX66 or	or	LX66 or	or	or	PWR
PRI	PRI	DSP LX65	DSP LX65	DSP LX65	DSP LX65	PRI	PRI	DSP LX65	DSP LX65	DSP LX65	DSP LX65	DSP LX65	DSP LX65	
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
15	16	17	18	RM 19	D Slo 20	t Numi 21	bers fo 22	or this	shelf 24	are: 25	26	27	28	-
15	10		10	19					. : : : : : : : : : : : : : : : : : : :	25	20	21	20	n/a
	-		4		эп	ELF 1		nt vi	ew)		4			
						Ca	ble Ar	ea						
RM	RM	RM	RM	RM	RM	CEM	CEM	RM	RM	RM	RM	RM	RM	SIM
9-S	9-S	3-S	3-S	3-S	3-S	#0	#1	9-S	9-S	3-S	3-S	3-S	3-S	Α
ATM	ATM	VSP	VSP	VSP	VSP	LX63	LX63	OC3	OC3	VSP	VSP	VSP	VSP	LX61
LX73 if	LX73 if	LX66 or	or	or	or	or	or	LX71 or	LX71	LX66 or	LX66 or	or	LX66 or	PWR
MG 4000	MG 4000	DSP LX65	DSP	DSP	DSP	LX82	LX82	ATM		DSP LX65	DSP LX65	DSP LX65	DSP LX65	
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0.000		Note:	Physi	cal an	d RMI	D Slot	Numb	ers ar	e the s	same c	n this	shelf	a 2048 99	-) 70°6
Note: Physical and RMID Slot Numbers are the same on this shelf SHELF 0 (Front View)														
	G					6	ble Ar							
						Ca	idie Ar	ea						

Note: Configuration shown is for a NTLX51BA four high-speed slot SPM.

Note: SPM module with two shelves can provide up to 26 Resource Modules (RM) in addition to the required Common Equipment Module (CEM) and Shelf Interface Module (SIM) circuit packs.

Note: Each Serial Link (SL) has 256 timeslots. Where three SLs are assigned, there are 768 timeslots that can service the bandwidth equivalent to one STS–1 or DS–3 Resource Module. **Note:** Serial links in diagram above are shown as 1–S, 3–S, and 9–S.

Note: Slots 1 & 2 and 9 & 10 of shelf 0 have nine S–links or 2,304 timeslots that supports OC–3 or ATM RMs to provide 2,016 circuits.

Note: Prior to SP14, if you plan on implementing ISDN User Part (ISUP) trunking, you must have Link Interface Units SS7 (LIU7) datafilled and configured for external routing. See NTP 297–8991–030, *LIU7 External Routing Activation User Guide*.

SPM Module Diagram Description

Card	Description
LX57	PCIU Card
LX58	Alarm Card
LX59	Fan Card
LX60	Filler Pack
LX5015	Air Filter
LX61	
LX63	CEM is located in slots 7 & 8 of bottom shelf. Note: The LX63 CEM is discontinued but is still supported. The LX82 CEMs are required for Crossover Messaging functionality and Succession Evolution of SPMs.
LX82	Enhanced CEM with Ethernet is located in slots 7 & 8 of the bottom shelf.
9X40DA	ENET Paddle Board connected to front of CEMs.

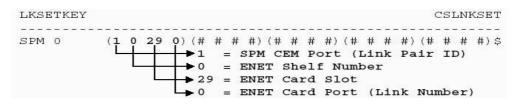
Resource Module & Provisioning Information

LX65	Digital Signal Processor (DSP) Resources: MF, COT, ABBIT, TONESYN. A DSP has 9 islands.
LX66	Voice Signal Processor (VSP) Echo Cancelling (ECAN) A VSP has 10 islands and up to 26 ECANs per island. Note: LX65 DSP and LX66 VSP packs go in slots 3 thru 6 and 11 thru 14 of the bottom shelf and/or slots 3 thru 6 and 9 thru 14 of the top shelf. (Need three S-links per shelf). Note: You can mix DSPs, DLCs, and VSPs within the same SPM; however, make sure the datafill is correct in table MNCKTPAK.
LX71	OC-3 Interface Module (OC-3 Transmit & Receive) for TDM (traditional trunking) packs go in slots 9 & 10 of bottom shelf.
LX72	DLC packs for supporting ISDN PRI D-Channel should go in slots 1, 2, 7, & 8 of the top shelf since they only need one S-link per slot. Note: DLCs can go in other than slots with one S-link, but that would be wasting S-links.
LX73	ATM Interface Module packs go in bottom shelf slots 1 & 2 for the MG4K (MG4000) SPM configuration, and 9 & 10 of the bottom shelf for the IW SPM. The ATM pack needs nine S-links per slot.
LX74	Synchronous Transport Signal-1 (STS-1) Interface Module
LX84AA	PCM-30 Low-Speed Access (LSA)
LX84DA	DS-1 LSA
LX85/86	Voice Signal Processor (VSP) (i.e. echo cancellation)
LX99	Synchronous Transport Mode-1 (STM-1) Interface Module
 -End-	

Spectrum Peripheral Module Tables

Several new tables have been added for configuring SPMs. Except for the need to datafill table TRKMEM (Trunk Member) after SPM table MNHSCARR, and table TRKSGRP (Trunk Sub–Group) after SPM table MNRIIID for Primary Rate Interface (PRI), datafill the existing tables CLLI (Common Language Location Indentifier), PECINV (PEC Inventory), CLLIMTCE (CLLI Maintenance), and TRKGRP (Trunk Group) for trunking, and table ENCDINV (Enhanced Network Card Inventory) for hooking it up to the ENET, the following new SPM tables must be datafilled in the following order:

- **PMLOADS** This table stores the device location of every Peripheral Module (PM) load file. **Note:** Datafill it only once. There is no need to datafill it for each SPM added to the system unless a new load file entry has to be added to table PMPOADS.
- MNPRTGRP Defines what protection groups modules are in, and NOSPARE alarm datafill.
- **MNNODE** Defines internal or loop clocking, SPM class, DSP card resource alarm limits, resource low-water mark alarm thresholds, node status alarms, and execs.
- **MNSHELF** Defines physical PEC codes and location of the SPM frame. **Note:** The Shelf PEC (SHPEC) must match what the physical shelf PEC is or the CEMs will be In–Service Trouble (ISTB). The Frame PEC (FRPEC) is not service affecting.
- MNCKTPAK Defines each individual pack in the SPM, resources, and datafill for PROTFAIL alarm, CLKOOS alarm on CEMs, node status alarms (Manual Busy [MANB], System Busy [SYSB], etc.), default software load, and WORKING or SPARE datafill.
- MNLINK Defines the SPM to ENET links. Example of MNLINK datafill follows:



Note: Use >MAPCI; MTC; PM; POST SPM (spm #); TRNSL (trn #) to get the same information.

• MNHSCARR Defines all OC-3 carriers, subcarriers, and contains all carrier line encoding and status alarms such as UAS, RFI, LOF, ES, and LOS. Note: As of CSP12 release, the DS1ZCS parameter was added for DS-1P carrier types to enable DS1ZCS on or off. The following is a quick reference for setting DS-1P's Zero Code Suppression with SF and ESF line encoding:

DS-1P Line Encoding Parameters in Table MNHSCARR

FRAMEFMT	DS1ZCS	Equivalent To
ESF ESF	OFF ON	B8ZS / 64 kbs Does Not Exist
SF	OFF	B8ZS / 56 kbs
SF 	ON 	AMI / 56 kbs

- MNATMCON Used to provision ATM connections against the carrier in table MNHSCARR.
- MNPRIIID Used to provision a PRI interface ID against the carrier in table MNHSCARR.
- SPMECAN Table SPMECAN is used to provision the SPM Echo Canceller (ECAN) control parameters.
- FEATCNTL This table controls feature digit collection and digit detection times on the SPM ISUP trunks.

Spectrum Peripheral Module MAP Level Commands

The CARRIER level has been modified to permit posting of new class carriers which include OC–3S and STS–3L physical carriers and the STS–1P, DS–3P, VT–15P, and DS–1P logical carriers.

See the SPMTKCNV level off the TTP level for the commands relating to moving existing trunks from DTCs to SPMs. Reference NTP 297–1771–819, *SPM Commands Reference Manual* for command details.

Spectrum Peripheral Module "PM" MAP Level

CM MSN	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL		
SPM				Sys	Man	в	OffL	CBsy	ISTb	InSv
0 Quit		PM		#	#		#	#	#	#
2 Post_		SPM		#	#		#	#	#	#
3 ListSet 4 ListRes 5 Trnsl 6 7	Note:	See DM	IS-SPM	Commai	Γ to get d	irectorie r <i>ence N</i>	<i>lanual</i> , N	PRINT <dir> NTP 297-177</dir>	to get hidde 71-819 for me	
8 9 10 11 Disp_ 12 Next 13 Select_ 14 QueryPM 15 ListAlm 16 17 SPERFORM 18	 The MF The The can mod At S infor The (SPI in a 	ListRes — datafi Trnsl co Select c execute lules (cir P11 and rmation f SPERF USAGE) given pe	comma illed and ommand comman the Sel rcuit pac higher for each ORM le or These eriphera	nd displa l actual c provides d selects ect comm ks such the "Que RM in th vel has tw tools pro l, call-pro	ount) pro s the C-si a ALL or a nand fror as CEM, ryPM FIL e SPM. wo subto ovide stat ccessing o	of all the ovided b de link a specifi n the SI DSP, V LES" co ols, SPI delays,	e resour by all the informat ied modu PM screa SP, OC3 mmand M ACTiv analysis call-proc	ces (COT, D DSPs and \ ion for the S ule (circuit pa en as well as 3, ATM). See can be used ity (SPMAC such as occu- cessing data	TMF, TONE /SPs in the S PM. ack) in the S s from one of the SELEC to get acces T) and SPM upancy of ea block usage ORM level als	SPM. PM. The us f the select T MAP leve ss to the los USAGE uch process , and inforr

Spectrum Peripheral Module "SELECT" MAP Level

CM	MSN	IOD	Net	PM	CCS	Lns	Trks	Ext	APPL			
SPM					Sys	Man	в	OffL	CBsy	ISTb	InSv	
0 Quit		PM			#	#		#	#	#	#	
2		SPM			#	#		#	#	#	#	
3 ListSet		-										
4		Command Descriptions										
5		Note: At MAP level use LISTST to get directories, then PRINT <dir> to get hidden commands</dir>										
6 Tst		Note: See DMS-SPM Commands Reference Manual, NTP 297-1771-819 for more details and										
7 Bsy other MAP level commands not described below.												
8 RT:		 The ListSet command lists the contents of the Post set. 										
9 OffL 10 LoadMod 11 12 Next 13 Select_ 14 QueryMod		 The LoadMod command loads the selected module with the specified load. 										
		• The Select command ALL or selects a specified module (circuit pack such CEM, DSP, VSP										
		OC3, and ATM) in the SPM.										
		The QueryMod command queries a specified module (circuit pack) in the SPM.										
		The Prot command brings up the protection screen for the module from whose										
		screen the Prot command is issued. Once at the Prot Level, the Force, ListAlm, Manual,										
	5 ListAlmQuit, and Select commands are available.6 ProtNote: The Force command switches the specified working circuit pack to the spare circuit											
17		pack. It is different from the command "Manual" in that service may be impacted										
18		"Force" command is used to switch activity. The Force command initiates an uncon-										
		trolled spare. However, before dropping all current activities, it attempts a warm										
		spare. If a warm spare fails, a cold spare takes place. For an autonomous spare, the Force command tries a warm spare, but if it fails, a cold spare takes place.										
			Force	comma	nd tries a	a warm s	nare hi	it if it fail	s a cold so:	are takes nla	Ce	

Spectrum Peripheral Module Tools & Command Interpreter Level Commands

Note: See *SPM Tools Reference Manual*, NTP 297–1771–120 and *SPM Commands Reference Manual*, NTP 297–1771–819 for more details on commands and tools.

REMLOGIN to the Spectrum Peripheral Module

The SPM can be accessed through Remote Login (REMLOGIN). Most REMLOGIN commands and some directories are currently password protected. The Debug Shell (dSH) provides access to the commands and directories on the SPM. The following example is for a remote login into SPM module 0, shelf 0 debug shell, and then within the debug shell, into the OC–3 in logical slot 9:

At the Command Interpreter (CI) level enter:

>REMLOGIN SPM 0 0	ogs into SPM debug shell (/DSHELL directory) and the PM CEM in slot 7 (dSH:7).
dSH:7>REMLOGIN -S 9	ccesses the OC-3 in logical slot 9 (-S 9) from the PM CEM in slot 7 (dSH:7).

Other helpful commands after remotely logging into an SPM:

>SWNODE or dSH:7>SWNODE	# Use this command to switch between CI and REMLOGIN session.
dSH:7>CD / <dir></dir>	# Use CD command to change directories.
dSH:7>LS	# Use LS command to get a list of directory commands.
dSH:7>CD /CARM	
dSH:7>CALS	<pre># Use the CALS command (SP15) in the CARM directory to list the status of all carriers.</pre>
	<pre># Note: Password protection is removed after SP15 for access to the CALS command.</pre>

The following are some examples of directory levels that can be accessed by using the CD /<dir> command. Once in the directory level, use the LS command to see directory level commands. Use HELP <command> and HELP <dir> for descriptions.

- /DSHELL The /DSHELL directory provides the shell commands that are available in all directories.
- **/AER** The /AER directory provides access to application event records (logs) of the resource module.
- /FOOTPRINT Log buffers in /FOOTPRINT directory collect data for severe problems. Note: This directory survives restarts.
- /LOADINFO The /LOADINFO directory provides information about software loads on a resource module.
- **/MEMORY** The /MEMORY directory contains commands related to memory addresses, usage, and displaying values in memory.
- **/PATCHES** The /PATCHES directory contains information about software patches.
- /RESMAN The /RESMAN directory provides information about resource management and Operational Measurements (OM) on the resource module.
- /SPMDBG The /SPMDBG directory contains commands that debug software.
- /ILMTEST Displays Integrated Link Maintenance (ILM) data. Note: Available in SP15.

PERFMON (Performance Monitoring) Level

The Performance Monitoring (PERFMON) level of the MAP terminal provides access to Synchronous Optical Network (SONET) GR–253 compliant performance monitoring. To access the PERFMON level, use one of the following commands:

```
>MAPCI;MTC;TRKS;CARRIER;POST SPM (spm #);PERFMON (carrier #)
>MAPCI;MTC;TRKS;CARRIER;POST SPM (spm #) (circuit #);PERFMON 0
```

The METERPP command off the PERFMON level is used to set the benchmark reading for Optical Power Receiver (OPR) and stores it in memory. This benchmark reading is then used by the SPM to calculate the optical receive levels. The METERPP does not do any signal attenuation measurements. *If the OC-3S facilities are not setup during installation, the operating company may have to perform this.*

The PPQUERY command off the PERFMON level displays the current 24-hour performance parameter counts, the 15-minute performance parameter, and the 24-hour performance parameter thresholds.

SPM Software Verification Notes

Note 1. For offices with NA010, the only way to find out what load is in a specific SPM resource module is to REMLOGIN to it and use the Query Load (QLOAD) command.

Note 2. For NA011 and above, the QUERYPM FILES command is available and will provide SPM resource module load information (i.e. >MAPCI NODISP;MTC;PM;POST SPM (spm #);QUERYPM FILES).

Note 3. Table PMLOADS will provide the software name (ACTFILE) and volume name (ACTVOL). Table MNCKTPAK provides the software load version for each resource module in a SPM (i.e. DSP0014 is software load version SP14).

Note 4. SPM loadname convention can have up to three values. *Example:* SP14.1.2 is software version SP14, maintenance release version 1, and emergency release version 2. The latest SPM loads on disk can be queried to get release and version information. This can be obtained by entering DISKUT, listing the SPM loads to get them in the user directory (i.e. >LF S00DIMAGE), and then use command >SPMLFINFO (loadname) (i.e. >SPMLFINFO DSP0013_010056).

SPM and Related Log Messages

Local SPM logs can be obtained by remote logging into the CEM and then by dumping error buffers using the /AER directory. Resource module log buffers can be dumped by remotely logging into them.

SPM Log Messages

Log	Description
SPM300	Generated when a device fault occurs. Note: Provides an ordered card list.
SPM301	Generated when the clock oscillator tuning range reaches 70% and again when it reaches 90%.
SPM310	This log is generated by SPMECMON in automatic performance monitoring mode and if SOS message reporting is enabled when an echo cancellation performance issue is suspected. Note: Data contained in this log can be compiled to detect potential echo cancellation or network problems.
SPM311	Software Exception Report (SWER) occurs on a SPM.
SPM312	Generated when a trap occurs on a SPM.
SPM313	A fault is recorded in the Module Information Memory (MIM) on a SPM.
SPM330	Generated when the two CEMs of a SPM come in to datasync or go out of datasync.
SPM331	Generated when a device has a protection switch failure.
SPM332	Generated when the sync reference source is switched by system or manual action, or if the last sync reference source in an OC-3 protection group is lost.
SPM334	An alternate sync reference source is not available & timing source no longer meets SONET spec.
SPM335	Generated when a device has a protection switch failure.
SPM340	Generated when the CM SWACTs and the CEM EXEC updates fail.
SPM350	Generated as a warning that specific SPM node resources are near exhaust.
SPM500	Generated when a device changes state.
SPM501	Generated when the clock mode changes from sync, freerun, holdover, or acquire sync, freerun, holdover, or acquire. Alarm severity is provisioned. Note: This log is not generated when the clock mode changes from synchronization to holdover. See log SPM332 for more information.
SPM502	ATM Connection State Change Log
SPM503	ATM Connections OOS State Change Log

SPM504	ATM Connections RM Device OOS State Change Log
SPM600	Generated when the MS changes modes and is not able to notify the in-service SPM of the mode change.
SPM630	Generated when a successful sparing event occurs.
SPM650	Successful loading operation.
SPM651	Generated when an in-service CEM loading or RM loading operation fails on a circuit pack.
SPM650	Generated when in-service CEM loading or RM loading operation passes on a circuit pack.
SPM660	Generated each time a SPMECMON continuous monitored trunk is involved in an echo canceller enabled answered call. Echo cancellation performance information such as ERL, ERLE, etc. is provided.
SPM661	Indicates successful completion of a SPMECMON ON or OFF command.
SPM700	Generated when a Distributed Data Manager (DDM) audit failure occurs on a SPM subgroup.
SPM701	Generated when a DDM audit succeeds a SPM subgroup.
SPM702	Generated when a DDM dynamic update fails on a SPM subgroup.
SPM703	DDM audit successfully updates a SPM subgroup following a DDM dynamic update failure.
SPM704	Generated when a DDM dynamic update fails for a SPM trunk member.
SPM705	Generated when a SPM trunk is set to LO or SYSB.
SPM706	Generated when a trunk is automatically returned to service after being in LO.
SPM707	Generated when the dynamic update fails for the ISDNPARM table.
SPM708	Generated when the DDM audit updates the ISDNPARM table.
SPM709	Generated when the dynamic update fails for the ISDNPROT table.
SPM710	Generated when the audit updates the ISDNPROT table.
	Provides data from the past 15 samples of the SPM Activity (SPMACT) subtool of SPERFORM.
SPRF671	Provides data from the past 15 samples of the SPM Usage (SPUSAGE) subtool of SPERFORM.
CARR300	Generated when an OC-3 carrier failure event is cleared.
	Generated when an OC-3 carrier failure event occurs.
	Generated when an OC-3 carrier changes to an in-service date from MANB or SYSB.
CARR501	Generated when an OC-3 carrier changes from SYSB or MANB to CBSY.
CARR510	Generated when an OC-3 carrier changes from CBSY, MANB or SYSB to in-service.
CARR511	Generated when an OC-3 carrier changes from in-service or CBSY to SYSB.

CARR512	Generated when an OC-3 carrier changes to CBSY from SYSB, in-service or MANB.
CARR800	Generated when Threshold Crossing Alert (TCA) for a metered performance parameter is cleared. Metered performance parameters include Laser Bias Count (LBC), Optical Power Transmitted (OPT), and Optical Power Received (OPR).
CARR810	Generated when a TCA occurs, i.e. when the metered performance parameter exceeds its provisioned level of severity.
CARR811	Generated when a TCA occurs for a non-metered parameter, e.g. Coding Violations (CV), Errored Seconds (ES), and Unavailable Seconds (UAS).
ENET211	This log is enhanced to provide DMS-SPM information.
ENET311	Generated when a critical fault is detected on the P-side link.
ENET308	Modified to include In-Service Trouble (ISTB) reasons for Integrated Link Maintenance (ILM).
PRSM400	Generated when a SPM load file (containing SPM PRSU fixes) is datafilled in table PMLOADS.

-End-

SPM OM Groups and Registers

In addition to the OM groups and registers provided in the table below that are directly related to the SPM, it is recommended that the following OM groups and their registers be used for performance monitoring:

- NMTCNODE The Node Maintenance Node Measurements (NMTCNODE) group measures the performance of a SPM node. It provides an indication of the number of system troubles and out–of–service occurrences.
- NMTCTYPE Same as the NMTCNODE OM group except it is on a node "Type" basis.
- NMTCUNIT Same as the NMTCNODE OM group except it is on a node "Unit" basis.
- NMTCLINK The OM group Node Maintenance Link Measurements (NMTCLINK) measures the performance of transport media to the node that directly affects the maintenance reliability of this node. The data indicates the number of system troubles and out-of-service occurrences.

To view the real-time data for the active registers directly on the SPM, use the CI level REMLOGIN command to remotely login to the SPM. Then, at the SPM, change to the directory RESMAN (>CD /RESMAN) and use the PRINTOMS command to see the active data.

OM Registers	OM Groups	Description
COTLOW	DSPRMAN	Continuity Tone Transceiver (COT) Low-Water Threshold Violations on SPM node from COT resource pool.
COTLOST	DSPRMAN	Count of COT resources lost or taken away from resource management users such as CallP.
COTDENY	DSPRMAN	Number of COT requests denied.
COTUTIL	DSPRMAN	Average percent usage of COT resources.

SPM OM Groups and Registers Table

COTHI	DSPRMAN	High-water mark for COT resources from COT resource pool.
COTFAIL	DSPRMAN	Number of COT failures for SPM based SS7 trunks.
DTMFLOW	DSPRMAN	DTMF Low-Water Threshold Violations on SPM node from DTMF resource pool.
DTMFLOST	DSPRMAN	Count of DTMF resources lost or taken away from resource management users such as CallP.
DTMFDENY	DSPRMAN	Number of DTMF requests denied.
DTMFUTIL	DSPRMAN	Average percent utilization of DTMF resources.
DTMFHI	DSPRMAN	High-water mark for DTMF allocations from DTMF resource pool
		TONESYN Low-Water Threshold Violations on SPM node from TONESYN resource pool.
TONELOST	DSPRMAN	Count of TONESYN resources lost or taken away from resource management users such as CallP.
TONEDENY	DSPRMAN	Number of TONESYN resource requests denied.
TONEUTIL	DSPRMAN	Average percent utilization of TONESYN resources.
TONEHI	DSPRMAN	High-water mark for TONESYN allocations from TONESYN resourc pool.
MFLOW	DSPRMAN	MF Low-Water Threshold Violations on SPM node from MF resource pool.
MFLOST	DSPRMAN	Count of MF resources lost or taken away from resource management users such as CallP.
MFDENY	DSPRMAN	Number of MF requests denied.
MFUTIL	DSPRMAN	Average percent utilization of MF resources.
MFHI	DSPRMAN	High-water mark for MF allocations from MF resource pool.
ECANLOW	ECANRMAN	ECAN Low-Water Threshold Violations on SPM node from ECAN resource pool.
		Count of ECAN resources lost or taken away from resource management users such as CallP.
ECANDENY	ECANRMAN	Number of ECAN requests denied.
ECANFAIL	ECANRMAN	Number of ECAN fail to converge reported via SOS message events.
ECANUTIL	ECANRMAN	Average percent utilization of ECAN resources.
	ECANRMAN	High-water mark for ECAN allocations from ECAN resource pool

SPM Alarms

If your office is pre-NA011 and you have a non-node visible alarm, (such as a PROTFAIL), you must use LOGUTIL and/or DLOG/SCANLOG to locate a SPM331 log indicating the source of the alarm.

In NA011 and above offices, with core GA patch BUZ59 applied, you can list all SPMs with alarms, including the ones caused by protection switching alarms by entering:

>MAPCI NODISP; MTC; MTC; POST SPM ALL

and then entering:

>QUERYPM FLT ALL

Tables MNPRTGRP, MNCKTPAK, MNNODE, and MNHSCARR all contain alarm datafill.

SPM Alarm Quick Reference Table

The following table provides a quick reference for alarms and their associated logs and tables.

SPM Alarm Quick Reference Table

Alarm Name	Туре	Alarm Description and Associated Logs & Tables	

SPM Alarms Under the PM Banner (1SPM)

CLKOOS	Major	Clock out-of-synchronization. See Log SPM334 and table MNCKTPAK.
COTLOW	Minor	The demand for CCS7 COT resources exceeded the low-water mark threshold setting. See log SPM350 and table MNNODE.
DTMFLOW	Minor	The demand for DTMF resources exceeded the low-water mark threshold setting. See log SPM350 and table MNNODE.
ECANLOW	Minor	The demand for Echo Canceller (ECAN) resources exceeded the low-water mark threshold setting. See log SPM350 and table MNNODE.
HLDOVR	Major	The CEM clocks have lost network synchronization and are running in Holdover (HLDOVR) mode. See log SPM501 and table MNCKTPAK.
HLDOVR24	Major	The CEM clocks are running in the holdover mode and have not been synchronized with the network for 24-hours or more. See log SPM501 and table MNCKTPAK.
ISTB	Minor	SPM node or one or more of its devices are in an In-Service Trouble (ISTB) state. See logs SPM300, 331, 500, 630, and ENET308. For datafill, see tables MNCKTPAK and MNNODE.
MANB	Major	The SPM node or one or more of its devices is in a Manual Busy (MANB) state that could be affecting service. See logs SPM300, SPM331, SPM500, SPM650, and CARR500, CARR501, CARR510, and CARR512. For datafill related to the MANB alarm, see tables NMCKTPAK and MNNODE.

MANBNA	Major	The SPM is in MANB state and is Not Accessible (NA), and a network error caused it to be isolated from the ENET links or the MS ports A serious disruption of service exists. See log SPM600 and tables MNCKTPAK and MNNODE.
MFLOW	Minor	The demand for Multifrequency (MF) resources exceeded the low-wate mark threshold setting. See log SPM350 and tables MNCKTPAK and MNNODE.
NOSPARE	Major	The last spare module providing redundancy for an OC-3, DSP, VSP, DLC, or ATM is not available. See logs SPM330 or SPM331 and table MNPRTGRP.
PROTFAIL	Critical	Protection (PROT) switching failed to occur on protected modules OC-3, DSP, VSP, DLC, or ATM. See SPM300, SPM331, SPM500, or SPM630 and table MNCKTPAK.
SYSB	Critical	The SPM node or one or more of its devices is in a SYSB state that could be affecting service. See logs NODE500, SPM300, SPM331, SPM500, SPM650, and CARR500, CARR501, CARR510, and CARR512. For datafill related to the SYSB alarm, see tables NMCKTPAK and MNNODE.
SYSBNA	Critical	The SPM is in SYSB state and is Not Accessible (NA), and a network error caused it to be isolated from the ENET links or the MS ports A serious disruption of service exists. See log ENET311 and table MNCKTPAK and MNNODE.
TONESLOW	Minor	The demand for Tone Synthesizer (TONESYN) resources exceeded the low-water mark threshold setting. See log SPM350 and tables MNCKTPAK and MNNODE.
VCX070	Minor	The Voltage Controlled Crystal Oscillator (VCXO) has exceeded the 70% threshold of its dynamically adjustable range in order to keep the CEM synchronized to a timing reference. See log SPM301 and table MNCKTPAK.
VCXO90	Minor	VCXO has exceeded the 90% threshold of its dynamically adjustable range in order to keep the CEM synchronized to a timing reference. Synchronization failure can occur. See log SPM301 and table MNCKTPAK.
		SPM Alarms Under the IOD Banner (2MPCOS)
CSS-N	Minor	A Threshold Crossing Alert (TCA) is generated because the Controlled Slip Seconds Near-End (CCS-N) performance parameter has exceeded a count greater than 4. The alarm clears when the count returns to less than 1. See log CARR811 and table MNHSCARR.
CV-F	Minor	A TCA is generated because the Coding Violation Near-End (CV-N) and Coding Violation Far-End (CV-F) has exceeded a count greater than 4,430. The alarm clears when the count returns to 1,732 or less. See log CARR811 and table MNHSCARR.
ES-N ES-F	Minor	A TCA is generated because the Errored Seconds Near-End (ESN) and Errored Seconds Far-End (ES-F) has exceeded daily limit of 864. The alarm clears when the count returns to 346 or less. See log CARR811 and table MNHSCARR.

SEFS-N	Minor	A TCA is generated because the Severely Errored Framing Seconds Near-End (SEFS-N) has exceeded daily limit of 17. The alarm clears when the count returns to 7 or less. See log CARR811 and table MNHSCARR.
SES-N SES-F	Minor	A TCA is generated because the Severely Errored Seconds Near-End (SES-N) and Severely Errored Seconds Far-End (SES-F) has exceeded daily limit datafilled in table MNHSCARR. The alarm clears when the count returns to the low-level limit as datafilled in MNHSCARR. See log CARR811 and table MNHSCARR.
UAS-N UAS-F	Minor	A TCA is generated because the Unavailable Seconds Near-End (UAS-N) and Unavailable Seconds Far-End (UAS-F) has exceeded daily limit datafilled in table MNHSCARR. The alarm clears when the count returns to the low-level limit as datafilled in MNHSCARR. See log CARR811 and table MNHSCARR.
		SPM Alarms Under the TRKS Banner (62CG, 62GC, 62G, or 62TG)
AIS	Minor	AIS alarm generated when an unbroken sequence of Alarm Indication Signal (AIS) frames is detected for a duration of 2.5-seconds. Alarm clears when an AIS is not detected for 10-seconds. See logs CARR300, CARR310, and table MNHSCARR.
BERSF	Minor	Bit Error Rate Signal Failure (BERSF) generated when BER exceeds datafilled value for a duration of 2.5-seconds. Alarm clears when BERSF value is not detected for 10-seconds. See logs CARR300, CARR310 and the SFBERLIM field in table MNHSCARR.
LOS	Critical	Loss-of-Signal (LOS) alarm is generated when pulses are not detected for a duration of 2.5-seconds. Clears when pulses are detected for 10-seconds. See logs CARR300, CARR310 table MNHSCARR.
BERSD	Minor	Bit Error Rate Signal Degradation (BERSD) generated when BER exceeds datafilled value for a duration of 2.5-seconds. Alarm clears when BERSF value is not detected for 10-seconds. See logs CARR300, CARR310 and the SDBERLIM field in table MNHSCARR.
LOP	Minor	Loss-of-Pointer (LOP) alarm is generated when an unbroken sequence of frames and invalid pointers is detected for a duration of 2.5-seconds. Alarm clears when valid pointers are detected for 10-seconds. See logs CARR300, CARR310, and table MNHSCARR.
RA1	Minor	sequence of frames with RAI signals is detected for a duration of 2.5-seconds. Alarm clears when a RAI is not detected for 10-seconds. See logs CARR300, CARR310, and table MNHSCARR.
RFI	Minor	Remote Failure Indication (RFI) alarm generated when an unbroken sequence of frames with RAI signals is detected for a duration of 2.5-seconds. Alarm clears when a RFI is not detected for 10-seconds. See logs CARR300, CARR310, and table MNHSCARR.
SIMPLEX	Critical	SIMPLEX alarm is generated when protection switching is unavailable. Alarm clears when the spare RM returns to service. See logs CARR300 and CARR310 and table MNPRTGRP.

SPM Alarms Under the CCS Banner (2RS)

LBC-N	Critical	A TCA is generated because the Laser Bias Current Near-End (LBC-N) performance parameter in the OC-3 has exceeded 150. Alarm clears when count is less than 125. See logs CARR800, CARR810, and table MNHSCARR.
OPR-N		A TCA is generated because the Optical Power Received Near-End (OPR-N) performance parameter in the OC-3 has dropped below 85. Alarm clears when the parameter rises above 95. See logs CARR800, CARR810, and table MNHSCARR.
 OPT-N		A TCA is generated because the Optical Power Transmitted Near-End (OPT-N) performance parameter in the OC-3 has dropped below 85. Alarm clears when the parameter rises above 95. See logs CARR800, CARR810, and table MNHSCARR.

Carrier Performance Parameters Cross Reference Table

Carrier Performance Parameters Cross Reference Table Table MNHSCARR Performance Parameters OC-3S STS-3L STS-1P DS-3P VT-15P DS-1 _____ CV-N Coding Violations Near-End х х х х х Х CV-F Coding Violations Far-End Х Х Х ES-N Errored Seconds Near-End Х х х Х ES-F Errored Seconds Far-End Х SES-N Severely Errored Seconds Near-End X X Х Х Х Х SES-F Severely Errored Seconds Far-End Х UAS-N Unavailable Seconds Near-End Х Х Х Х Х UAS-F Unavailable Seconds Far-End Х CCS-N Controlled Slip Seconds Near-End Х SEFS-N Severely Errored Frame Seconds Near-End Х AISS-N Alarm Indication Signal Seconds Near-End Х PSC-N Protection Switch Count Near-End Х Х LBC-N Laser Bias Current Near-End OPR-N Optical Power Received Near-End Х OPT-N Optical Power Transmitted Near-End Х _____ ____

-End-

SPM Other Miscellaneous

SPM DS-512 Message Channel Reconfiguration Commands

To upgrade an existing SPM to have messaging channel crossover connections for each CEM connected either to a single-shelf ENET assembly or a dual-shelf ENET assembly, the following non-menu commands are available. The commands are listed in the order in which a user will execute them.

- SPMXMSG The SPMXMSG command sets and checks the SPM message channel crossover.
- **DISPLAY** The DISPLAY command shows the status of the SPM messaging channels and the CEM Product Engineering Codes (PEC).

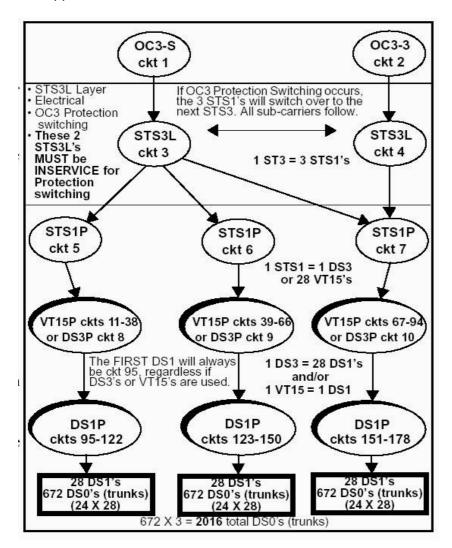
- XOVER The XOVER command upgrades an existing SPM with the messaging channels crossover. Warning: Only use for the SPM cross-over link upgrade procedure.
- **STRAIGHTEN** The STRAIGHTEN command is used to straighten the SPM messaging channels. Warning: Only use for the SPM cross-over link upgrade procedure.
- **XFOLLOWUP** The XFOLLOWUP command resolves the message switch ports relocation after the user successfully executes the XOVER and STRAIGHTEN commands. **Warning:** Only use *after* performing the SPM cross–over link upgrade procedure and adding the newly upgraded SPM into different ports.

Table MNHSCARR Diagram

Use the below diagram to get a picture of how this table is used to identify the carriers or subcarriers terminating on the SPM. Information provided in the MNHSCARR table includes:

- The name of the carrier.
- A carrier identifier/number within a SPM node.
- Carrier type (i.e. OC-3S, STS-3L, STS-3cP, STS-1P, DS-3P, VT-15P, DS-1P, DS-1L, and ATM).

The P-side of the OC-3 circuit pack carries a high-speed optical carrier. With the first SPM application being OC-3, the different termination points of the SONET carrier (OC-3 section, STS-3 line, STSL path, DS-3 path, VT-15 path) and the low-speed sub-carrier (DS-1 path) will be supported.



Determining Spectrum Peripheral Module Trunk Terminal & Node Numbers

Unless you know the SPM and the and circuit numbers, locate it in table TRKMEM. Example of TRKMEM:

SRMPODNWDS0 255 0 SPM 1 98 5

In this example for trunk 255 in the SRMPODNWDS0 trunk group, 98 is the circuit number (span number) and 5 is the circuit channel number in SPM 1.

Terminal Number (TN) = (SPAN * 24) + CHANNEL (Where CHANNEL is 1 to 24)

SPM circuit numbers start at 95 which is span 0; therefore, circuit 98 in this example would be span 3. Since we now know the span is 3 and the channel is 5, we can figure the terminal number. Terminal Number is: (3 * 24 + 5) = 77

To get Node Number (NODENO), you can use the XPMIST command. Example:

>XPMIST; NODENO SPM 1

Another way to get a SPM trunk TN and NODENO is to go into TOOLSUP and turn PMIST on. Once in PMIST, use the command >CONVERT TRK SRMPODNWS0 255. The output will be in hexadecimal, so convert to decimal if needed.

DSP Island Resource Provisioning

Each DSP resource module provides a total of 9 DSP Islands (DSPIs). The resources should be allocated across the resource modules so that the DSP messaging load is evenly distributed. Only one type of resource can be provisioned per DSPI. The following table defines the capacity number for each resource:

DSP Island Resource Provisioning

Capacity*	Notes and Descriptions
80	Continuity Tone Transceiver (COT)
255	It is not recommended to have more than 14 AB Bit (ABBIT) resources (one ABBIT DSPI) on a RM that also has 255 ToneS (Tone Synthesizers) resources allocated on it, since both of these resources are messaging intensive.
64	DTMF receiver with dial tone generation.
14	It is not recommended to have more than 28 ABBIT resources (two ABBIT DSPIs) on the same RM.
40	Multifrequency (MF) Receiver
0	No Service Test Application (STA) resources should be datafilled. If STA resources are currently datafilled, they should be deleted from table MNCKTPAK based upon what the NTP states for DSP resource allocation.
	80 255 64 14 40

LED Alarm Indicators

For a detailed description of the alarm LED indicators for the frame and resource modules, see NTP 297–1771–550, *SPM Hardware Maintenance Reference Manual*.

The following table provides a quick reference for resource module LED status and what their indication means:

LED Alarm Indicators

LED Status	Indication and Action
GREEN OFF RED OFF	Green LEDs are in sleep-mode (module can also be not powered or not seated). When all LEDs are off, there are no critical faults and an indicator test is not underway. Use an indicator test to check LED function. Also, see note below on prolonging LED life.
GREEN ON RED ON	A Power On Self Test (POST) or an LED indicator test is underway. During a POST, the LEDs are controlled by the Initial Boot Loader (IBL) software. If both LEDs remain on for an extended period after a POST, the module is defective. For detailed instructions for replacement, see the appropriate NTP for card replacement procedures. Also, see note below on prolonging LED life.
GREEN ON RED OFF	Normal operation there are no critical faults and no action is required. Do not remove a module displaying this alarm indication or combination.
GREEN OFF RED ON	Critical fault - replace the module. For detailed instructions for replacement, see the appropriate NTP for card replacement procedures.
AMBER OFF	Normal operation all external signal inputs to the module faceplate are valid.
AMBER ON	At least one external signal source entering the module faceplate is not carrying a valid signal.
-End-	

Note: To prolong LED life, program the green LEDs so it can enter the sleep-mode. LED sleep-mode timing is controlled by the entry in field LEDTIMER in data schema table MNNODE. Sleep-mode does not apply to red LEDs.

Nortel DMS-100 Tones Table (TONES)

Table Name

Tones Table

Functional Description of Table TONES

Table TONES defines tones that are generated by line or trunk peripheral modules.

The special tones listed below are generated on cards located on a Trunk Module (TM) or Maintenance Trunk Module (MTM), and defined in table STN (Special Tones) instead of table TONES:

- BVTONE (IBN Busy Verification Tone)
- CWT (Call Waiting Tone)
- DISTCWT (Distinctive Call Waiting Tone)
- EBOT (Executive Busy Override Tone)
- ERWT (Expensive Route Warning Tone)
- OHQT (Offhook Queuing Tone)
- ROH (Receiver Offhook Tone)

The special tones listed below are generated on cards located on a TM or MTM, and are defined in table SVRCKT (Service Circuit) instead of table TONES:

- SVDTMF (DIGITONE Outpulsing Circuit)
- SVOBSV (Service Observing Circuit)

Where field KIKEY in table KEY_ITEM table is datafilled with an entry of TONEKEY, the maximum number of tones that can be allocated is determined by the value of field SIZE in table KEY_ITEM.

Where field DATSKEY field in table DATASIZE is datafilled with an entry of TONES, memory for table TONES is allocated in accordance with the value of field SIZE in table DATASIZE.

To extend the length of the table, the size in the DATASIZE table must be increased and a cold restart performed.

Datafill Sequence

There is no requirement to datafill other tables prior to table TONES.

The following tables must be datafilled after table TONES.

- CLLIMTCE (CLLI Maintenance)
- OFRT (Office Route)
- OFR2 (Office Route-2)
- OFR3 (Office Route–3)
- OFR4 (Office Route-4)

Table Size

0 to 20 tuples.

United Kingdom

If the switching unit is a DMS-100 switch in the United Kingdom and office parameter MARKET_OF_OFFICE in table OFCENG (Office Engineering) is set to U.K. PABX, the recommended values for the entry in table CUSTPROT (Customer Protection) with field TABNAME equal to TONES are shown in the following table.

U.K. PABX Datafill for Table CUSTPROT

Field Name	Entry	
TABNAME	TONES	
READPROT	15	
UPDTPROT	30	
ALLPROT	30	

Datafill

The following table describes datafill for table TONES:

Table TONES Field Descriptions

Field	Subfield	Entry	Explanation and Action
CLLI		Alphanumeric (1 to 16	Common Language Location Identifier Enter the code assigned to the tone in table CLLI.
TRAFSNO		0 to 127	Traffic Separation Number LOCAL, TOLL, LOCAL/TOLL, GATEWAY, or INTERNATIONAL only:
			If switching unit has the optional Traffic Separation software feature, enter the outgoing traffic separation number 0 to 127 assigned to the tone. If traffic separation not required, enter 0 (zero).
			The range of values for the outgoing traffic separation number is dependent upon office parameter TFAN_OUT_MAX_NUMBER in table OFCENG.
			It is recommended that outgoing traffic separation numbers 1 to 9 be reserved for generic separation numbers.
			See table TFANINT for the assignment of incoming to outgoing traffic separation numbers.
			With the traffic separation feature, a peg count of all calls, by type of call, can be accumulated between an incoming source (incoming trunk or an originating line attribute) and an outgoing source (outgoing trunk, terminating line attribute, tone or announcement). Direct Dial (DD), Operator Assisted (OA), and No Prefix (NP) are the call types supported.

OFFTIME 10 to 250 Off Time Enter the duration of the no-tone period specified in multiples of 10 ms. (for example: 20 = 200 ms). TONEPATT Numeric (16 digits) Tone Pattern Enter a 16-digit string of 0s and 1s. Each digit corresponds to one segment of ton pattern and represents the binary state on t tone, where: 0 = tone off, 1 = tone on. TONETYP Alphanumeric Tone Type Enter the type of tone generator required. New tones are added as necessary, and the th list below is not fully comprehensive. Sin some of the tone generators listed below are mutually exclusive, only a subset of these t generators can be found in a given software This is a general purpose high-frequency ton generator. HI High Tone This is for use in an international DMS when entry in field CLLI is IROM. LO Low Tone This is a general purpose low-frequency tone generator. LO Low Tone This is for use in an international DMS when entry in field CLLI is IROM. LO Low Tone This is a general purpose low-frequency tone generator. LO Low Tone This is not active until you have s FEATURE_TONE_SET to NMGLDTC in table OCFENG. SILENT_TONE Silent Tone Silence	_
(16 digits) Enter a 16-digit string of 0s and 1s. Each digit corresponds to one segment of ton pattern and represents the binary state on tone, where: 0 = tone off, 1 = tone on. TONETYP Alphanumeric TONETYP Alphanumeric TONETYP Alphanumeric Tone Type Enter the type of tone generator required. New tones are added as necessary, and the thist below is not fully comprehensive. Since some of the tone generators listed below are mutually exclusive, only a subset of these time generators can be found in a given software HI High Tone This is a general purpose high-frequency ton generator. HZ400_5DB 400 Hz Tone, Five Decibels This is for use in an international DMS when entry in field CLLI is IROH. LO Low Tone This is a general purpose low-frequency tone generator. 1024HZ_TONE Datafill this field for any CLLI when settin up the Bangladesh feature tones. This datafill is not active until you have s FEATURE_TONE_SET to BNGLDTC in table OCFENG. SILENT_TONE Silent Tone	
Enter the type of tone generator required. New tones are added as necessary, and the th list below is not fully comprehensive. Sind some of the tone generators listed below are mutually exclusive, only a subset of these t generators can be found in a given softwareHIHigh Tone This is a general purpose high-frequency ton generator.HZ400_5DB400 Hz Tone, Five Decibels This is the tone generator for 400 Hz at -5INTL_ROH_TONEInternational ROH Tone This is for use in an international DMS when entry in field CLLI is IROH.LOLow Tone This is a general purpose low-frequency tone generator.1024HZ_TONEDatafill this field for any CLLI when settin up the Bangladesh feature tones.This datafill is not active until you have s FEATURE_TONESilent Tone	
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This is a general purpose low-frequency tone generator.1024HZ_TONEDatafill this field for any CLLI when settin up the Bangladesh feature tones.This datafill is not active until you have s FEATURE_TONE_SET to BNGLDTC in table OCFENG.SILENT_TONESilent Tone	the
up the Bangladesh feature tones. This datafill is not active until you have s FEATURE_TONE_SET to BNGLDTC in table OCFENG. SILENT_TONE Silent Tone	<u>}</u>
FEATURE_TONE_SET to BNGLDTC in table OCFENG. SILENT_TONE Silent Tone	g
_	
5116UC6	
OFFTONE Alphanumeric Off Tone Tone types are as for TONETYP	
MAXDURN 1 to 255 Maximum Duration Enter the maximum time in seconds that a cal condense block can be attached.	.1
For information on office parameter NCCBS (Number of Call Condense Blocks), see table OFCENG.	
The maximum time duration for silent tone is 10s.	

	Enter 127 to satisfy the table editor. Entry values other than 127 are not valid.
	Note: This field is operative in tables ANNS and STN because members of such trunk groups represent real physical resources, but is not operative in table TONES because LM-generated tones do not represent real physical resources.
	The DMS maintains a count of tone usage but does not prohibit the number of users from exceeding MAXCONN.
Alphanumeric	Functional Tone Identity This field is used for Succession Networks operation only. Enter a tone identity from the Unified Tone ID range. For Succession Networks operation, CLLI and FNTONID are the only fields in this table that require datafill. This field has no impact on TDM operation
	Note: After an ONP in a Succession load, the FNTONID value defaults to TONE_NULL. This must be changed to a useful value, or a software error will occur in the GWC.
Y or N	Table TONESGRP This field indicates whether there are additional tone definitions in table TONESGRP.

Datafill Example

General Example for Succession Networks and DMS (TDM) Loads

The example below shows datafill for DMS (TDM) and Succession Networks loads. The datafill in *italics* is for Succession Networks, as indicated by the fact that FNTONID is not TONE_NULL.

Note: Any provisioned tone that can be played to both TDM and Succession Networks agents must have complete datafill.

Note: Tone types are not specific to TDM or Succession Networks operation. For Succession Networks operation, equivalent FNTONIDs can be defined for all tones.

The following example MAP display shows sample datafill for table TONES.

CLLI	TRAFSNO	SEGTIME	OFFTIME	TONEPATT	TONETYP	OFFTONE	MAXDURN	MAXCONN	FNTONID	TONESGRP
120T0	0	25	25	101010	HI	SILENT_TONE	30	30	TONE_NULL	N
FRA0	0	25	25	101010	LO	SILENT_TONE	30	30	TONE_NULL	N
TSTONE	0	25	25	111100	HI	SILENT_TONE	30	30	TONE_NULL	N
BUSY	0	50	50	101010	LO	SILENT_TONE	40	30	TONE_BSY	N
OFLO	0	25	25	101010	LO	SILENT_TONE	30	30	TONE_NULL	N
TSECDT	0	65	65	000111	LO	SILENT_TONE	10	10	TONE_NULL	N

Nortel DMS-100 LINE115 Calling Line Identification Log

LINE115

Explanation

The Line Maintenance (LINE) subsystem generates a LINE115 log report when a call that originates from another *line* connected to the DMS–100 switch terminates to a line with the Calling Line Identification (CLI) Service Order (SERVORD) option.

Format

The log report format for LINE115 is as follows:

```
LINE115 mmmdd hh:mm:ss ssdd INFO CALLING LINE IDENT
<len> DN <dn>
CALLING LINE = <len> DN <dn>
CALLID = <callid>
```

Example

An example of log report LINE115 follows:

```
LINE115 APRO1 12:00:00 2112 INFO CALLING LINE IDENT
HOST 00 0 19 20 DN 2557811999
CALLING LINE = LEN HOST 05 1 15 16 DN 2557812001
CALLID = 12345
```

Field Descriptions

The following table describes each field in the log report:

Field	Value	Description
INFO CALLING LINE IDENT	Constant	
<len></len>		Identifies Line Equipment Number (LEN) for lines connected to Line Module (LM) or Line Concentrating Module (LCM):
		SITE FF B/M DD CC
		<pre>* SITE: Frame location if remote LM or LCM (RLM or RLCM) are present. Otherwise, SITE = HOST.</pre>
		* FF: LM or LCM frame (00-99)
		* B/M: LM bay or LCM module (0 or 1)
		* DD: LM drawer or LCM subgroup (00-31)
		* CC: Line card (00-31)
		LM and LCM test packs are located at site: FF B/M 00 00 $$

DN <dn></dn>	Symbolic Text	Provides the terminating line directory number.
CALLING LINE	Symbolic Text	Provides the originating line equipment identification (line equipment number) and directory number.
CALLID	0-FFFFF	Provides number uniquely identifying the call. When a demand COT test fails on a SS7 trunk, the system displays the NIL value -32768.
-End-		

-End-

Action: Save LINE115 for the department that requests the CLI option to be set for the line.

Associated OM Registers: There are no associated Operational Measurement (OM) registers.

Nortel DMS-100 LINE117 Calling Line Identification Log

LINE117

Explanation

The Line Maintenance (LINE) subsystem generates a LINE117 log report when a call that originates from a *trunk* connected to the DMS–100 switch terminates to a line with the Calling Line Identification (CLI) Service Order (SERVORD) option.

A Software Optionality Control (SOC) option controls the availability of LINE117 CALLING NUMBER and SOURCE information. CALLING NUMBER and SOURCE information is available on a state-by-state basis. CALLING NUMBER and SOURCE information is only provided when the SOC state is set to ON. The calling party information must be available.

Format

The log report format for LINE117 is as follows:

```
LINE117 mmmdd hh:mm:ss ssdd INFO CALLING LINE IDENT
<len> DN <dn>
INCOMING TRUNK = CKT <trkid>
CALLID = <callid>
CALLING NUMBER = <dn>
SOURCE = <source>
```

Example

An example of log report LINE117 follows:

```
LINE117 APRO1 12:00:00 2112 INFO CALLING LINE IDENT
HOST 00 0 19 20 DN 2557811999
INCOMING TRUNK = CKT ICTRUNK 1
CALLID = 12345
CALLING NUMBER = 2149975015
SOURCE = CHARGE NUMBER
```

Field Descriptions

The following table describes each field in the log report:

Field	Value	Description
INFO CALLING LINE IDENT	Constant	Indicates CLI SERVORD option is active on the terminating line.
<len></len>	Symbolic Text	Identifies Line Equipment Number (LEN) for lines connected to Line Module (LM) or Line Concentrating Module (LCM): SITE FF B/M DD CC

* SITE: Frame location if remote LM or LCM (RLM or RLCM) are present. Otherwise, SITE = HOST.

		* FF: LM or LCM frame (00-99)
		* B/M: LM bay or LCM module (0 or 1)
		* DD: LM drawer or LCM subgroup (00-31)
		* CC: Line card (00-31)
		LM and LCM test packs are located at site: FF B/M 00 00
DN <dn></dn>	Symbolic Text	Provides the terminating line directory number.
<trkid></trkid>	Symbolic Text	Provides the originating trunk equipment identification.
CALLID	0-FFFFF	Provides number uniquely identifying the call. When a demand COT test fails on a SS7 trunk, the system displays the NIL value -32768.
CALLING NUMBER	Symbolic Text	comprise the calling number or the charge number. If neither of these numbers is available, this field is empty.
SOURCE	Alphanumeric	This field identifies the source of the entry in the CALLING NUMBER field. Values for this field are CALLING NUMBER, CHARGE NUMBER, and UNAVAILABLE. When neither the calling number nor charge number is available, this field displays UNAVAILABLE.

Action: Save LINE117 for the department that requests the CLI option to be set for the line.

Associated OM Registers: There are no associated Operational Measurement (OM) registers.

GBPPR Carrier Current Transmitter Detector

Overview

This is a device which can be used during a TSCM sweep to check a standard, single-phase 120 VAC power line for a hidden carrier current transmitter. It works by isolating, attenuating, and then high-pass filtering the incoming AC voltage to "detect" any signals in the frequency range between 10 kHz and 500 kHz. This is the most common operating frequency range for consumer-level (i.e. baby monitors) carrier current surveillance transmitters. There are some high-quality carrier current transmitter models out there which transmit above 500 kHz. For example, some "anywhere" telephone extensions operate in the 2 MHz range. To check a 120 VAC power line for transmitters operating above 500 kHz, you'd be better off using a spectrum analyzer. Connect the spectrum analyzer to the line's "hot" side using a simple resistor/capacitor combination attenuator and high-pass filter.

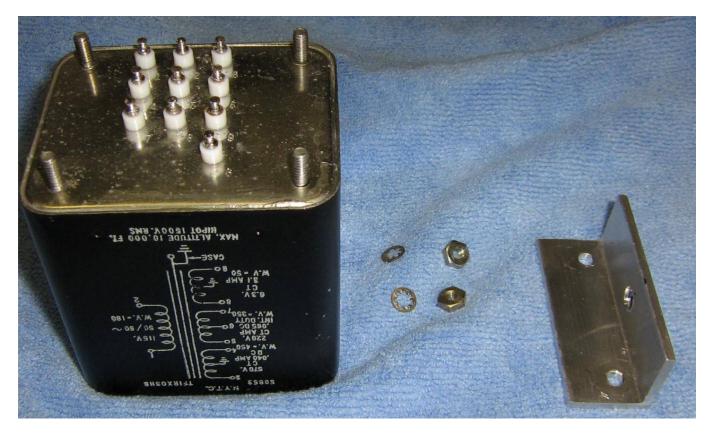
This particular detector can also be used to check phone lines, alarm wires, intercoms, or other additional wiring for carrier current transmitters. Another useful idea is to add an audio amplifier and speaker to the detector's output. You can then directly "listen" to power lines.

For this project, the output will be sent to an oscilloscope. Any high–frequency signals will then be displayed on the oscilloscope's screen. **Important Note:** If you power the oscilloscope from the *same* AC wiring which you are checking, you *must* use an isolation transformer to protect your oscilloscope. An example isolation transformer will be shown during the construction information portion of this article. You can overcome the need for an isolation transformer by using a battery powered oscilloscope.

The device is fairly easy to construct and operate. First, the incoming 120 VAC power line is sent through a DPDT switch and on to some common neon lamps, which are available at Radio Shack. This helps to determine if the outlet under test is wired properly. If the red neon lamp lights, it indicates that the "hot" and "neutral" wires on the outlet are not connected properly. You can flip the "reverse" switch (marked **REV**) to correct this. When everything appears to be safe, you can finally flip the "apply" switch (marked **APP**), which applies the 120 VAC power line to a simple resistor/capacitor attenuator and high–pass filter. This attenuates the 120 VAC signal down to only a few millivolts and helps to remove any 60 Hz interference. Both the incoming "hot" and "neutral" lines are protected with fast–acting circuit breakers to protect anything from shorting out.

After the attenuating and filtering, any signals above 10 kHz are sent to a low-noise OP27 operational amplifier whose gain value is adjustable via a panel-mount 100k potentiometer. The output of the OP27 is then sent to the oscilloscope via a chassis-isolated BNC jack. These can be salvaged from old coaxial Ethernet cards. The oscilloscope wlll then display the time-domain of any detected signals above 10 kHz. Be warned, there can be alot of interference, making the detection of carrier current transmitters difficult. You may need to do a "before-and-after" picture comparison, or install a temporary isolation transformer on the incoming 120 VAC power line (right after the meter or distribution box). This should clean up the line from any outside interference while still allowing you to check the AC power lines for carrier current transmitters.

Pictures & Construction



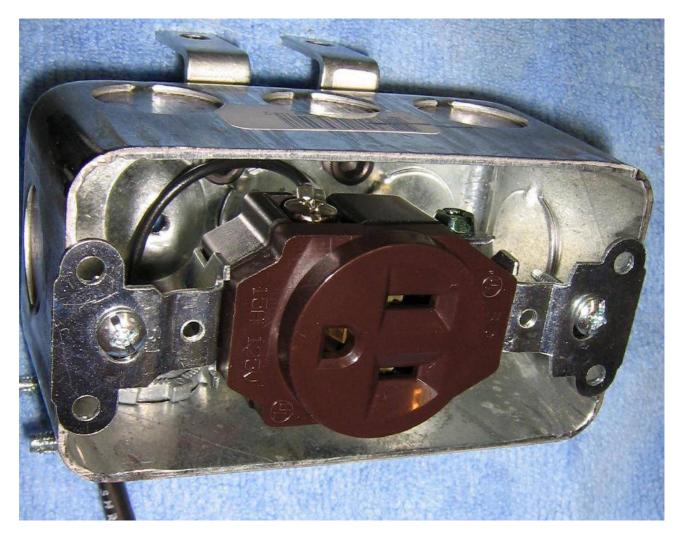
Isolation transformer which will be used for the dedicated AC outlet for the oscilloscope. It is from an old Korean War–era teletype machine. High–quality, sealed voltage transformers often show up at swap fests for only pennies, or even for free. The transformer will be mounted to the side of the case with a little aluminum bracket.

N.Y.T.C. 50853 TFIRXOSHE 30~ - - 180 CASE ALTITUDE 10 MAK.

Close up picture of the transformer's label. We'll be using it as an isolation transformer. Standard 120 VAC input is on the right (pins 1 & 2), while the 240 VAC output is via pins 5 & 7. Note that the output winding has a 120 VAC center tap (pin 6). If your oscilloscope doesn't draw too much current you can use this instead. If your oscilloscope does draw alot of current (more than 0.5 A), adjust its internal power supply to accept 240 VAC input and use the 240 VAC output winding.



The aluminum L–bracket is attached to the transformer as shown. The back of the transformer has a piece of art foam for protection.



The output of the isolation transformer is sent to a single–ganged outlet. It is mounted inside a metal box and is connected to the case via two 1/2-inch L–brackets.



Ammo case used to house this project. The long, retangle cut is for the oscilloscope outlet box. The rest of the holes on the front panel are for switches, LEDs, neon lights, circuit breakers, etc.



The isolation outlet mounts like this. Cut the retangle hole using a Dremel tool with a cut–off wheel. Be sure there is room for the cover.



Internal view of the isolation outlet box.



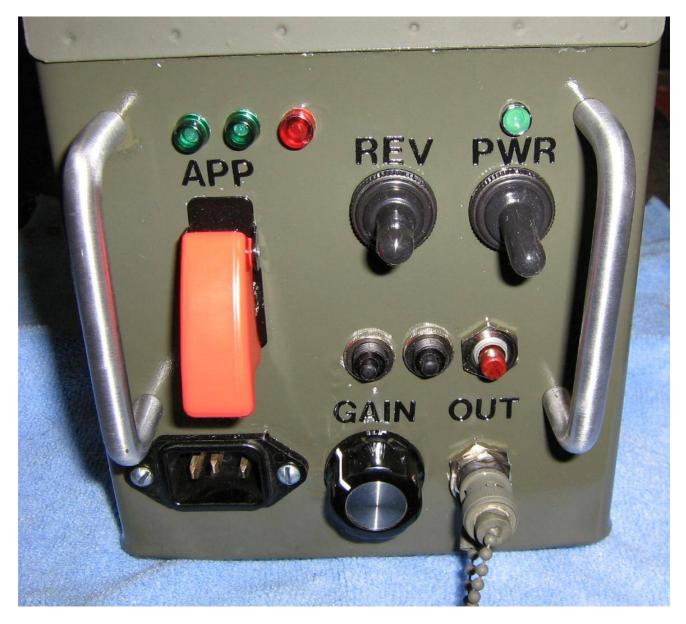
The signal output to the oscilloscope needs to be isolated from the case. A good way to do this is to salvage an isolated BNC connector from an old 10base2 (coaxial) Ethernet card. A 3Com EtherLink III is shown above.



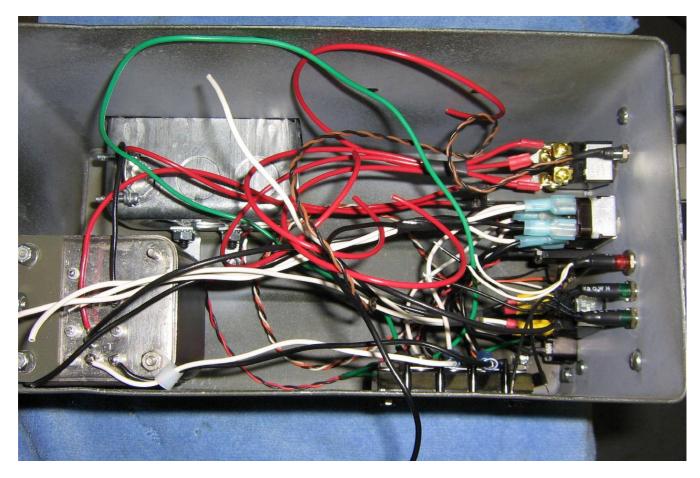
Close up picture of the isolated BNC connector. The two pins on the rear are for the BNC's center pin and shell.



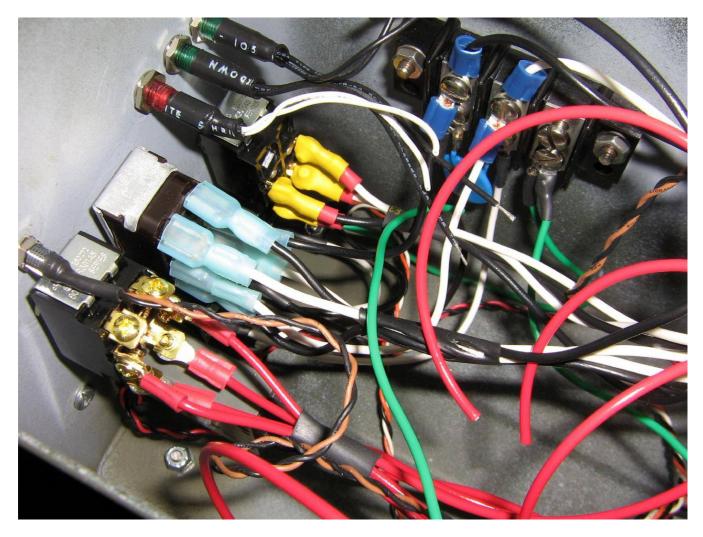
Isolated 240 VAC outlet for the oscilloscope.



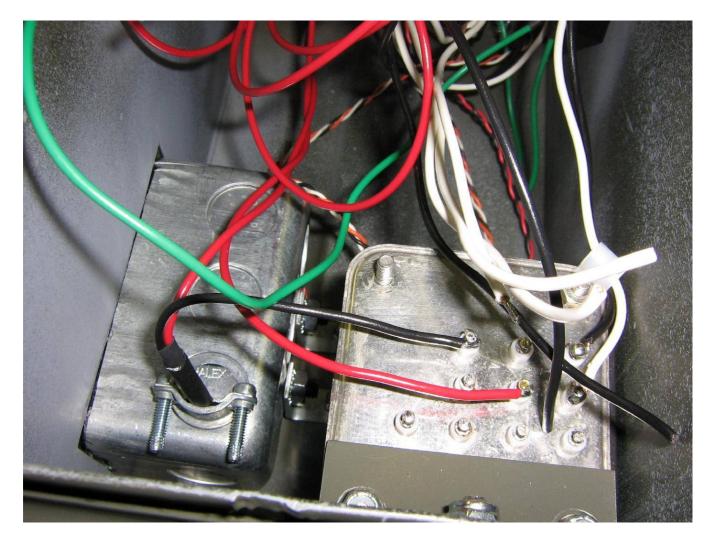
Front panel overview. On the top left are three neon lamps. If the "hot" and "neutral" lines are reversed, the **RED** neon lamp will light. If the hot, neutral, and ground lines are applied correctly, the two **GREEN** neon lamps will light. To the lower–right of the neon lamps are two switches. The one on the far–right controls the main power (**PWR**) to the Carrier Current Detector and lights the LED above it. The one to the left, (**REV**) reverses the "hot" and "neutral" lines, in case they happen to be applied incorrectly. Below the neon lamps, with the red switch cover, is the **APP** switch, which is the final control switch that applies the power line to the main detector circuitry. To the right of that, are three 1 Amp circuit breakers. Two are in series with the "hot" and "neutral" lines, and one is for the isolated 240 VAC outlet. Below that, is the isolated BNC output (**OUT**) connector and the detector's manual gain (**GAIN**) control. The AC power line to be checked comes in via the socket on the lower–left. This is also tapped by the isolation transformer to power the oscilloscope.



Oh Lordy! The start of the wiring behind the front panel. It'll be a mess.



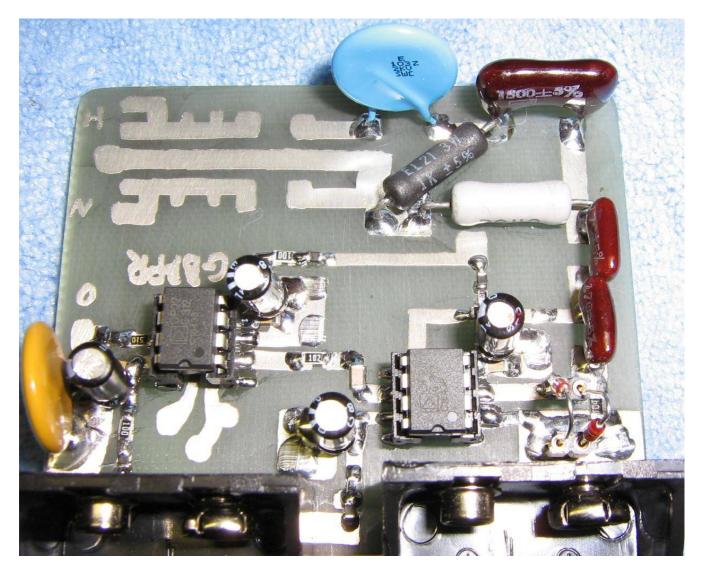
Close up, alternate view. The 120 VAC input (top) is on a little connector board.



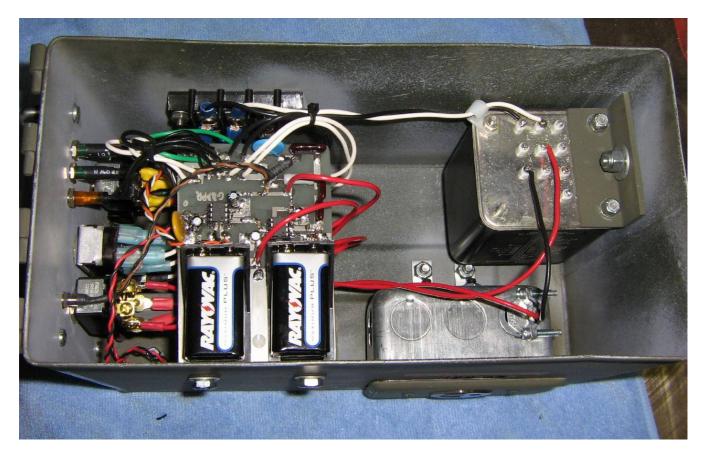
Wiring connections for the isolation transformer and the AC outlet.



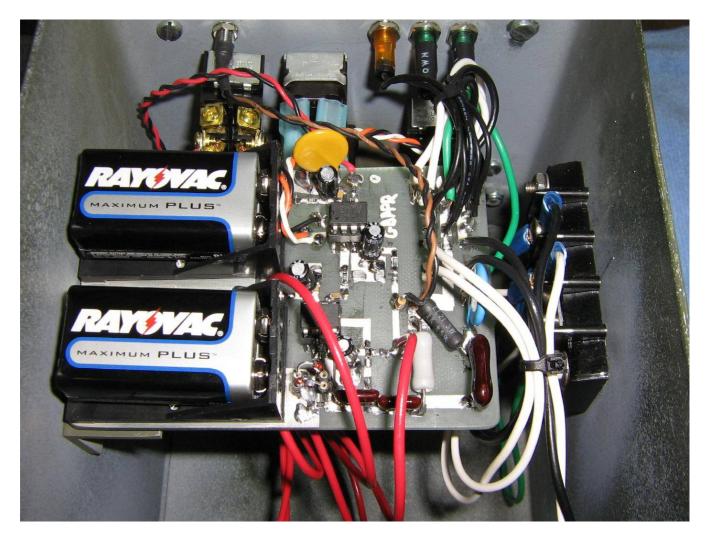
The main carrier current detector board. It consists of a simple resistor/capacitor voltage divider, and low-pass filter feeding two OP27 low-noise operational amplifiers. Two back-to-back 5.1 V zener diodes protect the incoming op-amps. The detector circuit *needs* to be powered via two 9 volt batteries to generate the "plus" and "minus" power supplies.



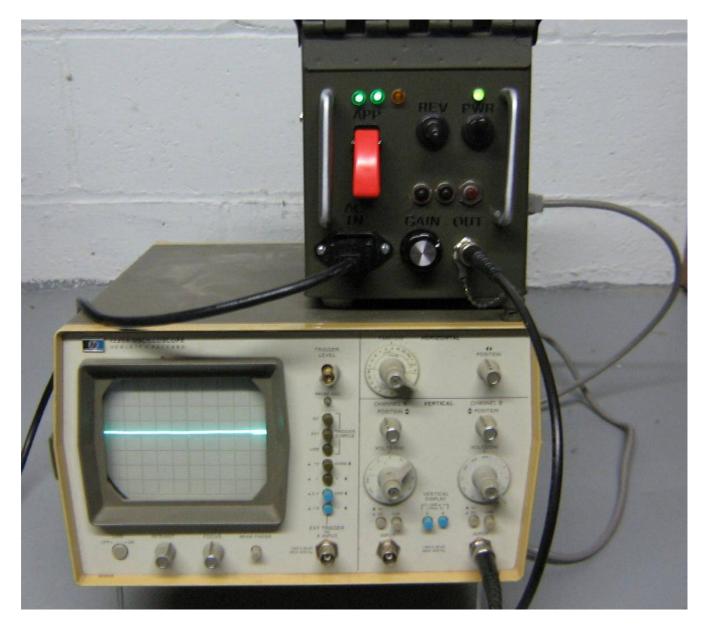
Alternate view. The resistors and capacitors in the voltage divider / filter section should be of the high–voltage type. Silver mica or 1000V ceramic capacitors are recommended. Metal oxide resistors should also be used.



Zoomed out a little bit.

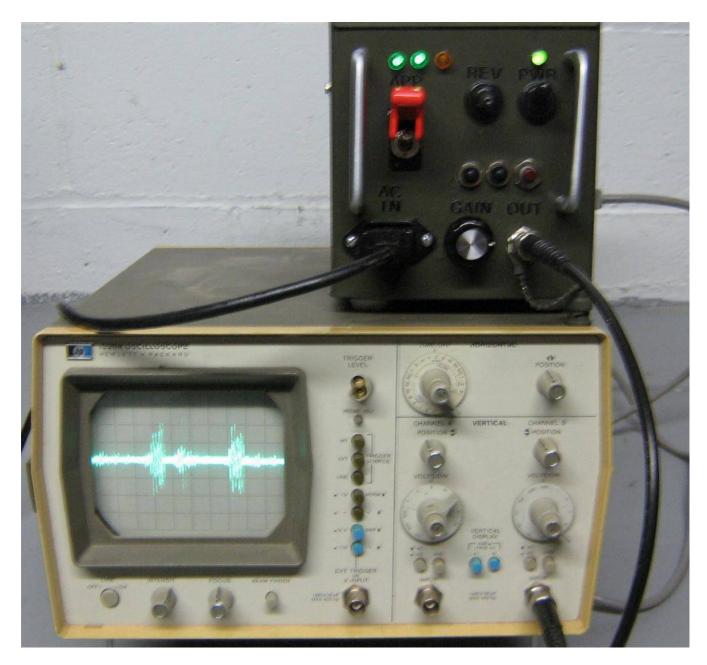


Overall view with the detector board mounted inside the case with the wiring complete.



In operation. Connected to a 120 VAC power line, but with the **APP** switch in the "off" position.

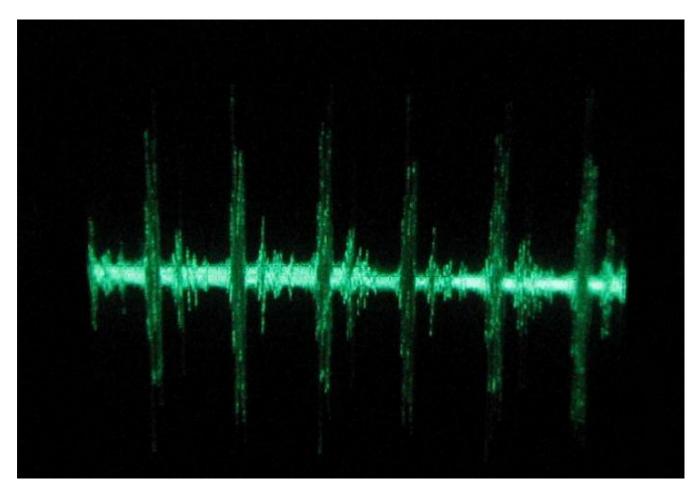
Note the oscilloscope's power cord connected to the isolated 240 VAC output (right side).



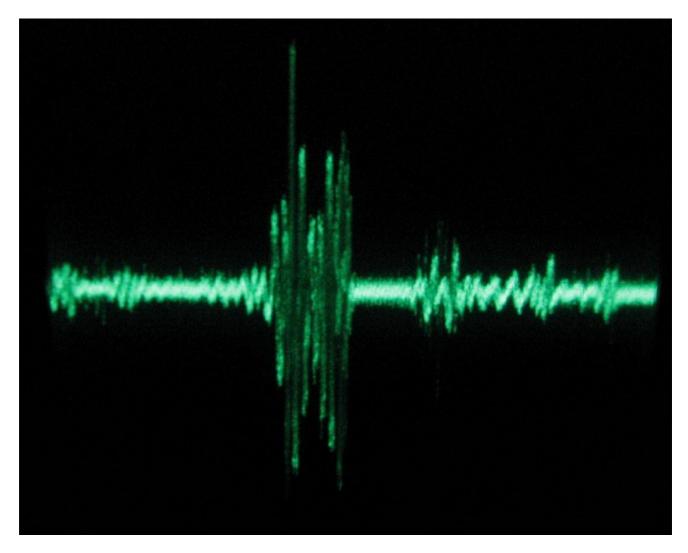
In operation, with the **APP** switch now "on." The oscilloscope's time-base setting is 1 mS per division. The volts settings is 500 mV per division.

The oscilloscope's display shows noise and switching transients on the power line I was checking. You'll need to compare these signals as a before–and–after picture against a "clean" line if you wish to determine if a carrier current transmitter is on the line.

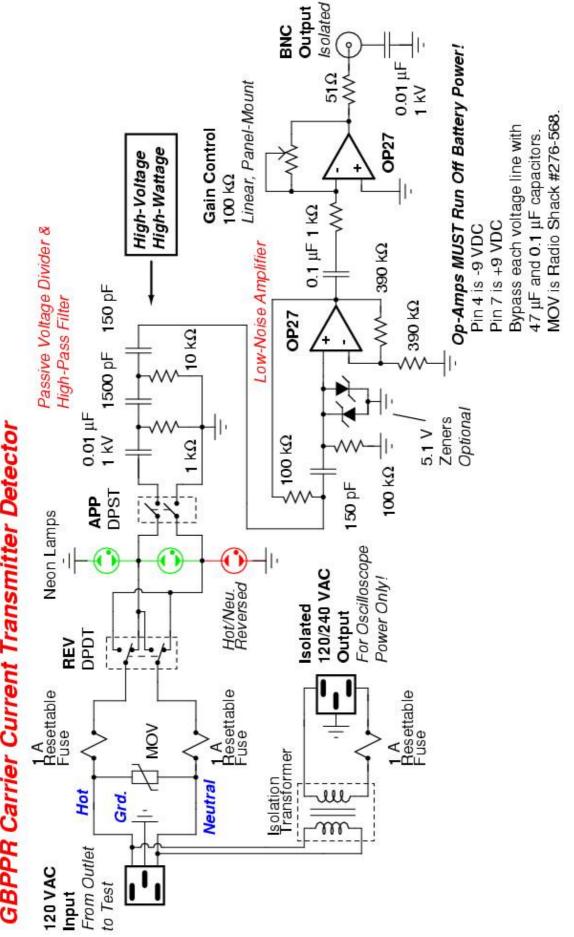
Also note that this "noise" is what degrades the use of carrier current surveillance transmitters.



Close up photo. 2 mS per division time-base setting.



Close up photo. 0.5 mS per division time-base setting.



GBPPR Carrier Current Transmitter Detector





"We shall not flag nor fail. We shall go on to the end. We shall fight in France and on the seas and oceans; we shall fight with growing confidence and growing strength in the air. We shall defend our island whatever the cost may be; we shall fight on beaches, landing grounds, in fields, in streets and on the hills. We shall never surrender and even if, which I do not for the moment believe, this island or a large part of it were subjugated and starving, then our empire beyond the seas, armed and guarded by the British Fleet, will carry on the struggle until in God's good time the New World with all its power and might, sets forth to the liberation and rescue of the Old.

---- Winston Churchill in a speech before the House of Commons, June 4, 1940.

End of Issue #31



Any Questions?

Editorial and Rants



An Israeli F–16 warplane fires missiles during an air strike on Nabatiyeh in southern Lebanon, August 2, 2006. (LEBANON) 02 Aug 2006 REUTERS/Adnan Hajj

Ahh... Mr. Goatfucker. Those are flares.



A Lebanese woman wails after looking at the wreckage of her apartment, in a building, that was demolished by the Israeli attacks in southern Beirut July 22, 2006. REUTERS/Issam Kobeisi (from Yahoo News)



A Lebanese woman reacts at the destruction after she came to inspect her house in the suburbs of Beirut, Lebanon, Saturday, Aug. 5, 2006, after Israeli warplanes repeatedly bombed the area overnight. (AP Photo/Hussein Malla) (from Yahoo News)

Notice <u>anything</u> wrong here?

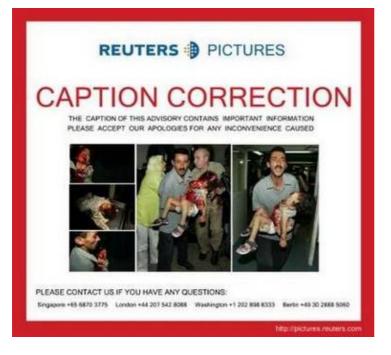


A Palestinian militant fires toward Israeli troops during an arrest raid in the West Bank village of Qabatiyeh near Jenin, Tuesday, Aug. 8, 2006. Four Palestinians were wounded when the army arrested an Al–Aqsa Martyrs' Brigades militant, Palestinians sources said. The army said two Islamic Jihad militants were arrested during the operation. (AP Photo/Mohammed Ballas)



RETRANSMITTING ORIGINAL FULL FRAME FOR CONTEXT TO SHOW THAT PEOPLE IN BACKGROUND ARE NOT DIRECTLY IN THE LINE OF FIRE – A Palestinian militant fires toward Israeli troops during an arrest raid in the West Bank village of Qabatiyeh near Jenin, Tuesday, Aug. 8, 2006. Four Palestinians were wounded when the army arrested an Al–Aqsa Martyrs' Brigades militant, Palestinians sources said. The army said two Islamic Jihad militants were arrested during the operation. (AP Photo/Mohammed Ballas)

Note how they cropped out the kids (human shields) in the first photo.



ATTENTION EDITORS – CAPTION CORRECTION FOR SJS01 – 05 WHICH WERE TRANSMITTED AT APPROXIMATELY 1725 GMT ON AUGUST 9, 2006. THE CAPTION INCORRECTLY STATES THE CAUSE OF DEATH. CORRECTED VERSIONS IMMEDIATELY FOLLOW THIS ADVISORY. WE ARE SORRY FOR ANY INCONVENIENCE CAUSED. REUTERS. A Palestinian man carries the body of three year–old Raja Abu Shaban, in Gaza August 9, 2006. The three–year–old girl who had been reported killed by an Israeli air strike in Gaza on Wednesday actually died of an accident, Palestinian medical workers said on Thursday. Workers at Gaza's Shifa hospital said on August 10, 2006 that the initial mistake over the cause of death appeared to have arisen because the girl's corpse was brought in at the same time as the bodies of the gunmen. REUTERS/Mohammed Salem (PALESTINIAN TERRITORIES)

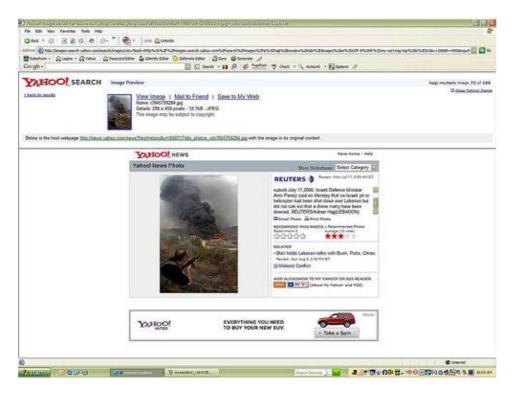
Caught using dead children for propaganda! Who do they think they are? Kevin Mitnick?



Secure our borders now!

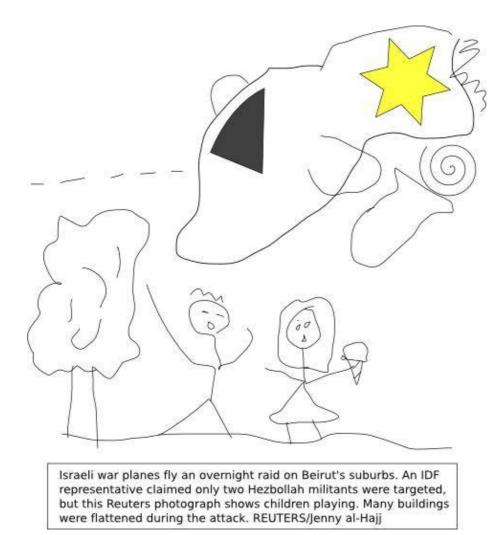


Good thing we didn't have liberals during World War 2!



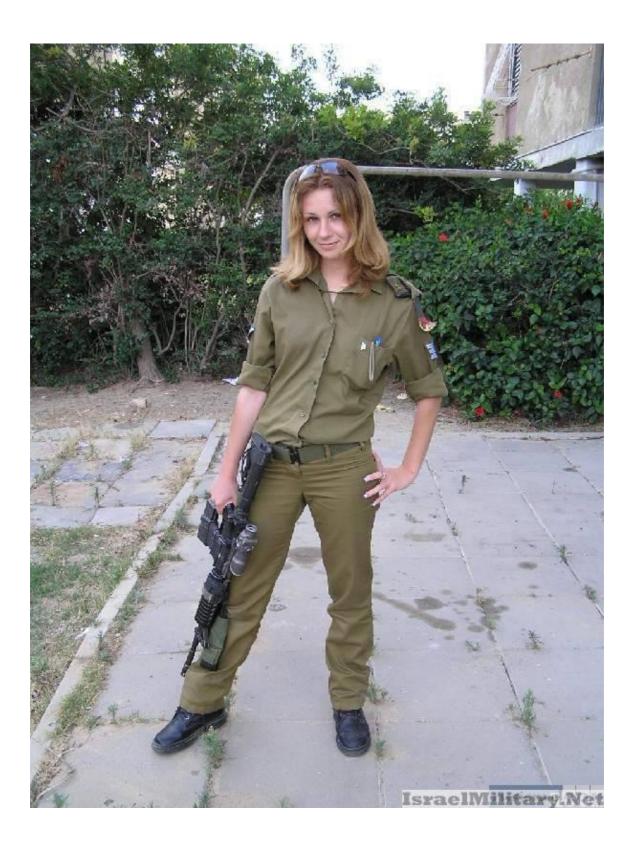
Close up photo of that fire shows it to be a bunch of burning tires in a garbage dump. Hmm...





	B B C NEWS	WATCH BBC NEWS IN VIDEO
	•UK version International versionAbout the version graphics Help Contact us	ons Low
News Front Page	Last Updated: Monday, 21 August 2006, 10:30 GMT E-mail this to a friend Printable version	11:30 UK
World	Dangers await Lebanon returnees	
、美文	By Martin Asser BBC News, Bint Jbeil	MIDDLE EAST CRISIS In Depth
Africa Americas Asia-Pacific Europe Middle East South Asia	When Um Ali Mihdi returned to her home in the southern Lebanese city of Bint Jbeil two days ago, she found a 1,000lb (450kg) Israeli	LATEST NEWS ' Italy steps in with Lebanon offer ' US pledges \$230m in Lebanon aid ' Lebanon warning on ceasefire
UK England	bomb lying unexploded in her living room. Bint theil is one of the worst hit areas in the	'Israeli commando raid alarms UN
Northern Ireland Scotland Wates Business	The shell is huge, bigger south than the young boy pushed forward to stand reluctantly next to it while we get our cameras out and record the scene for posterity.	DESPATCHES Dangers await Unexploded bombs are among dangers
Politics Health	The bonds came through the roof of the single-storey house and half-embedded itself into	facing those returning to southern Lebanon. 'Israeli city counts cost of
Education Science/Nature Technology Entertainment	the floor, just missing the TV. There is a hole in the roof with exactly the same profile as the shell itself, like when a cartoon character runs through a wall. The tailfin - complete	war Devastation sightseers Surveying the damaged south
Have Your	with skull-and-crossbones marking - still lies on the roof next to the hole where it broke off	ANALYSIS Challenges facing

The BBC admits to staging photos!



Oh.. the irony!



Croatian Fans Form Human Swastika in Italy

August 17, 2006 - From: www.farenet.org

Croatia's victory over World Cup winners Italy has been marred by the racist behaviour of their travelling fans last night. During the warm up match ahead of the EURO 2008 qualification in Livorno, a group of Croatian fans created a human swastika in the stands while making nazi salutes.

Photographic and video evidence sent to the Football Against Racism in Europe (FARE) network shows a group of more than 60 fans in the Croatian section of the Armano Picci stadium positioning themselves to form a swastika.

The FARE network has sent a report to the FIFA and UEFA disciplinary committees to ask for immediate action.

Kurt Wachter, from Austrian FARE partner, FairPlay-VIDC said:

"The photos and video footage that have been sent to us clearly show the Croatian fans forming a human swastika. These kind of actions are highly organised and illustrate that football must continue to intensify it's work against racism.

"FIFA have recently toughened up their sanction to deal with incidents like this. We hope they are ready to use them."

Last season Lok Leipzig supporters in Germany shaped their crowd into the form of a human swastika. An identical act has also been observed by the FARE organisation Never Again in a league match in Poland.

Previously, matches of the Serie A club AS Livorno have been the target of far-right away fans, since the fan culture of Livorno is known to be communist and captain Cristiano Lucarelli has become a symbol of the left.

Lucarelli was one of three Livorno players called up by team manager Roberto Donadoni, who coached the Tuscan club for part of last season.

Fucking ragheads... Get off my airplane!

Mutiny on Flight 613

August 19, 2006 - From: www.dailymail.co.uk

By Christopher Leake & Andrew Chapman

British holidaymakers staged an unprecedented mutiny – refusing to allow their flight to take off until two men they feared were terrorists were forcibly removed.

The extraordinary scenes happened after some of the 150 passengers on a Malaga–Manchester flight overheard two men of Asian appearance apparently talking Arabic.

Passengers told cabin crew they feared for their safety and demanded police action. Some stormed off the Monarch Airlines Airbus A320 minutes before it was due to leave the Costa del Sol at 3am. Others waiting for Flight ZB 613 in the departure lounge refused to board it.

The incident fuels the row over airport security following the arrest of more than 20 people allegedly planning the suicide–bombing of transatlantic jets from the UK to America. It comes amid growing demands for passenger–profiling and selective security checks.

It also raised fears that more travellers will take the law into their own hands – effectively conducting their own 'passenger profiles'.

The passenger revolt came as Ryanair boss Michael O'Leary was accused of using the terror crisis to make money. Government sources say he boasted to an official at the Transport Department: "Every time I appear on TV, I get a spike in sales."

The Tories said the Government's failure to reassure travellers had led the Malaga passengers to 'behave irrationally' and 'hand a victory to terrorists'.

Websites used by pilots and cabin crew were yesterday reporting further incidents. In one, two British women with young children on another flight from Spain complained about flying with a bearded Muslim even though he had been security-checked twice before boarding.

The trouble in Malaga flared last Wednesday as two British citizens in their 20s waited in the departure lounge to board the pre-dawn flight and were heard talking what passengers took to be Arabic. Worries spread after a female passenger said she had heard something that alarmed her.

Passengers noticed that, despite the heat, the pair were wearing leather jackets and thick jumpers and were regularly checking their watches.

Initially, six passengers refused to board the flight. On board the aircraft, word reached one family. To the astonishment of cabin crew, they stood up and walked off, followed quickly by others.

The Monarch pilot – a highly experienced captain – accompanied by armed Civil Guard police and airport security staff, approached the two men and took their passports.

Half an hour later, police returned and escorted the two Asian passengers off the jet.

'There was no fuss or panic'

Soon afterwards, the aircraft was cleared while police did a thorough security sweep. Nothing was found and the plane took off – three hours late and without the two men on board.

Monarch arranged for them to spend the rest of the night in an airport hotel and flew them back to Manchester later on Wednesday.

College lecturer Jo Schofield, her husband Heath and daughters Emily, 15, and Isabel, 12, were caught up in the passenger mutiny.

Mrs Schofield, 38, said: "The plane was not yet full and it became apparent that people were refusing to board. In the gate waiting area, people had been talking about these two, who looked really suspicious with their heavy clothing, scruffy, rough, appearance and long hair.

"Some of the older children, who had seen the terror alert on television, were starting to mutter things like, 'Those two look like they're bombers.'

"Then a family stood up and walked off the aircraft. They were joined by others, about eight in all. We learned later that six or seven people had refused to get on the plane.

"There was no fuss or panic. People just calmly and quietly got off the plane. There were no racist taunts or any remarks directed at the men.

"It was an eerie scene, very quiet. The children were starting to ask what was going on. We tried to play it down."

Mr Schofield, 40, an area sales manager, said: "When the men were taken off they didn't argue or say a word. They just picked up their coats and obeyed the police. They seemed resigned to the fact they were under suspicion.

"The captain and crew were very apologetic when we were asked to evacuate the plane for the security search. But there was no dissent.

"While we were waiting, everyone agreed the men looked dodgy. Some passengers were very panicky and in tears. There was a lot of talking about terrorists."

Patrick Mercer, the Tory Homeland Security spokesman, said last night: "This is a victory for terrorists. These people on the flight have been terrorised into behaving irrationally.

"For those unfortunate two men to be victimised because of the colour of their skin is just nonsense."

Monarch said last night: "The captain was concerned about the security surrounding the two gentlemen on the aircraft and the decision was taken to remove them from the flight for further security checks.

"The two passengers offloaded from the flight were later cleared by airport security and rebooked to travel back to Manchester on a later flight."

A spokesman for the Civil Guard in Malaga said: "These men had aroused suspicion because of their appearance and the fact that they were speaking in a foreign language thought to be an Arabic language, and the pilot was refusing to take off until they were escorted off the plane."

More evidence that Europeans reached North America first. Not looking good for third–world spic shitbags!

Haplogroup X and the New World

July 12, 2006 – From: capitolhillcoffeehouse.com

By David Tatosian

I'm sure this has happened to all of us at one time or another: you're in a convenience store or deli somewhere, grabbing yourself a bite to eat and a little something to wash it down with. You pay the nice man behind the counter the appropriate amount, exit the establishment and stop so quickly the man walking behind slams right into you, unleashing a torrent of Spanish at your back.

You've walked right into one of those anti-illegal alien rallies that are cropping up all over America.

On the sidewalk to your right are a number of well behaved–but angry American citizens carrying signs and waving the national ensign.

On the sidewalk to your left is a diverse group of students and liberals, masked desperados waving Mexican, anarchist and Palestinian flags and a couple of Hispanic activists shrieking incoherently into bullhorns.

As you walk through the buffer zone, provided by a polite but no nonsense police force, you happen to glance at the raucous, obscenity shouting, finger flipping crowd to your left and notice The Sign.

The illegal alien crowd always displays The Sign, and its message is always the same: We (meaning the Indian/Mestizo/Mexican illegal alien) were here first Gringo, youre (meaning us European types) the illegal aliens. Go back to Europe.

As you pull away, happily gnawing at your mystery meat burrito, you wonder just how much truth there is in that We were here first Gringo business.

In that, you're not alone.

There have been a number of archaeologists who have wondered the same thing since the discovery of the Clovis People (Paleo–Indians) in Clovis, New Mexico 70 years ago.

Among them is University of South Carolina archaeologist Dr. Albert Goodyear. Dr Goodyears activities at the Topper Site in South Carolina have yielded startling results: Radiocarbon tests of carbonized plant remains where artifacts were unearthed last May along the Savannah River in Allendale County indicate that the sediments containing these artifacts are at least 50,000 years old, meaning that humans inhabited North America long before the last ice age.

And long before Clovis.

Nor is the Topper site alone in yielding evidence of much older settlements; sites in Meadowcroft, Pennsylvania, Cactus Hill Virginia, and Monte Verde, Chile all indicate settlements thousands of years older than Clovis.

This is not just unwelcome news for Indians or Hispanic illegal aliens. It also throws a little bit of a kink into the Africa as cradle to the world theory too. If, as the theory goes, mankind left Africa

60,000 to 80,000 years ago, how does evidence of mankind show up in the western hemisphere 50,000 years ago?

And if Americas first inhabitants scampered across a temporary land bridge and eventually spread over the hemisphere from the west, why are the sites along the eastern seaboard so much older?

Smithsonian Institution archaeologist Dennis Stanford states, the old idea on New world origins are based on informed speculation and not supported by evidence through time and repetition – and in the absence of clear alternatives – the theory became dogma and ultimate ideology

With that in mind, Mr. Stanford and lithics (stone tools/crafts) expert Bruce Bradley set out to discover the predecessors to Clovis.

Their conclusion, based on biface technology, flintknapping techniques and other processes? There is very little in Clovis – in fact nothing – that is not found in Solutrean technology stated Mr. Stanford.

Archaeologist Kenneth Tankersley of Kent State University goes further, stating, there are only two places in the world and two times that this technology appears – Solutrean and Clovis.

Apparently the Solutreans, hunters and craftsmen from France and Spain arrived before the Clovis People.

Europeans.

How did they get here?

Stanford points out that boats made of hides and other materials have been with us for tens of thousands of years, and further states, that Solutreans were at least in part shore dwellers. At the time of maximum glaciation the sea level was down approximately 425 ft. lower than what it is today. (In 1992, Le Cosquer cave was discovered near Marseilles. Today the cave mouth lies 100 ft below the surface of the water. In Solutrean times, it would have been on a hillside 300 ft high and several miles inland from the Mediterranean.)

Stanford claims, the permanent ice that bridged the Atlantic, and the sea ice that extended further south in the winter, would have provided limitless opportunities to haul out their boats and hunt ice-age game.

Mr. Stanford suggests it would be only a matter of time before the Solutreans would have traversed the 1,200 to 1,500 miles to the Grand Banks, the northeastern most extension of North America which, because of the low sea levels, would have afforded them safe harbor, and fish and game beyond their wildest imaginings.

And there is the work of geneticists from Emory University and the Universities of Rome and Hamburg: Mitrochondrial DNA (mtDNA), which is inherited exclusively from the mother, normally contains four markers, called haplogroups, labeled A, B, C and D. These four are shared by 95% of Native Americans. Recently however, the genetics team identified a fifth haplogroup, called X, which is present in about 20,000 Native Americans and has also been found in several pre–Columbian populations. A most interesting fact is that haplogroup X is also present in European populations, but absent from Asians. The geneticists research suggests the marker may have existed in the Americas 12,000 to 34,000 years ago, which means it must have been introduced before Clovis. By whom? Stanford and Bradleys prime candidates are Salutreans

This is good stuff.

Certainly there is no reason to believe the Indians will give any credence to these discoveries and theories. As Russell Means stated at the Millions More March last year, and I paraphrase here, the White mans archaeologists are grave robbers.

As for the illegals and their friends, beyond dressing up in feathers and beating some drums in honor of imagined Mayan or Aztec gods, history begins and ends with Guadalupe Hidalgo.

The Solutrean–Clovis connection opens up a whole new world of possibilities for Americans though.

Particularly those who find themselves in the same position as the individual at the beginning of this piece.

Maybe we can make up some signs like The Sign ourselves.

Maybe this new information will bring the American citizens and the millions of illegal aliens together. Sort of like long lost brothers.

Maybe not.

In the meantime, I'd like to submit my application for part ownership in that casino down the road apiece.

Why not? We were here first.

More Blacks + More Hispanics = More Nobel Prize Winners

No! You get lower standards.

Illinois Makes It Easier For Teachers To Pass Test

August 11, 2006 - From: www.ksdk.com

CHICAGO (AP) -- The Illinois State Board of Education is making it easier for teachers to pass the social science-history test needed to get their licenses.

The board voted unanimously yesterday to lower the score needed to pass the test. Board member Ed Geppert says too many teachers were failing the exam because it covers such a broad range of subjects.

The board decided to drop the passing score from 64 to 57.

Under the old rule, only 56 percent of prospective teachers would have passed the most recent test, given in June. The new lower standard means 82 percent will now pass.

The head of a teaching–reform group called the Illinois Business Round–Table says the board's decision is a step backward. Group President Jeff Mays says Illinois should be increasing the standards, not making them lower.

ADL Letter to MSNBC

July 28, 2006 – From: www.adl.org

Keith Olbermann Countdown with Keith Olbermann MSNBC

Dear Mr. Olbermann,

We are deeply dismayed by your ongoing use of the Nazi "Sieg Heil" salute, both on your program and in public appearances -- including the recent Television Critics Association press tour -- while holding up a mask of Fox News commentator Bill O'Reilly.

While we understand that your aim is to entertain your audience by taking pot shots at Mr. O'Reilly, your repeated use of the Nazi salute has resulted in many complaints from our constituents, including Holocaust survivors and their families who find the use of this gesture offensive and repugnant in any context.

The Nazi salute is more than just a remnant of history, but serves as a calling card for modern-day neo-Nazis and white supremacists. We believe that the use of gestures and imagery associated with the Nazis even in jest only serves to trivialize the Holocaust and denigrate the memory of the six million Jews and others who died as a result of Hitler's Final Solution.

As a respected and well-known media personality, your actions have consequences and can set a standard for others to emulate. We are especially concerned that young people viewing your program might take their cues from your free use of the "Sieg Heil" salute.

In light of these concerns, we hope that you will reconsider your use of the Nazi salute in the future.

Sincerely,

The Anti-Defamation League

Dat thinkn' be rassist!

Racial Achievement Controversy

August 17, 2006 - From: www.wcjb.com

By Anne Imanuel

The goal of the legislation is to leave no child behind, but some parents say the No Child Left Behind legislation is singling certain children out.

Many Florida schools did not meet the Annual Yearly Progress guidelines.

Williston Middle School is one of those schools. They sent out a letter to parents stating why they fell short. A portion of the letter states:

"The following sub-groups did not meet the criteria for making AYP.

- 1. Reading: African American students
- 2. Mathematics: African American students and students with disabilities.
- 3. Writing: African American students"

That language has some parents concerned.

"It's unfortunate that they find someone to put the blame on. I'm very much concerned about that I can't say that enough. 'African American, African American.' it's got to be more to it," says Jeff Bryant.

Bryant is a father and former school teacher. He says the letter sounds racist.

But Levy County school officials say it's not meant to sound that way. They add, they also have no choice in how it sounds because the state lays out very specific guidelines for how to notify parents of the schools' progress.

Levy County Superintendent Cliff Norris says, "We are required by Florida law and the No Child Left Behind law to send that notification out and it's sent out in a format that is prescribed to us by the Florida Department Of Education in a sample letter."

They say parents in all counties across Florida whose child's school does not meet the Annual Yearly Progress goals should expect similar letters by the end of September.

