
GBPPR 'Zine – Issue #9 – December 2004



Welcome to **Green Bay Professional Packet Radio's** (www.gbppr.org) crappy magazine!

Eurinals refuse to help excavate a mass grave found in Iraq due to the possibility that Saddam and his officials might be executed. Just like you'd expect from those fucking Nazis...

"... Mr Kehoe said that work to uncover graves around Iraq, where about 300,000 people are thought to have been killed during Saddam Hussein's regime, was slow as experienced European investigators were not taking part. The Europeans, he said, were staying away as the evidence might be used eventually to put Saddam Hussein to death."
(http://news.bbc.co.uk/2/hi/middle_east/3738368.stm)

Even **more proof** that Euro-savages support terrorists, genocide, rape, murder, etc.

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IRC Channel : #gbppr on irc.freenode.net No, I'm never around.

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Interface Description & Maintenance Considerations

BELL SYSTEM PRACTICES
AT&TCo Standard

SECTION 231-037-023
Issue 2, August 1982

ELECTRONIC TANDEM SWITCHING INTERFACE DESCRIPTION AND MAINTENANCE CONSIDERATIONS 2-WIRE NO. 1 AND NO. 1A ELECTRONIC SWITCHING SYSTEMS

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1. GENERAL

INTRODUCTION

1.01 Electronic tandem switching (ETS) is a group of features that permit No. 1/1A Electronic Switching System (ESS) large-business customers to more efficiently and effectively use and administer large numbers of wide area telephone service (WATS), foreign exchange (FX), and private line facilities. There are several ETS features that require a data link (DL) for an interface between the ESS and the customer equipment required by the feature. This section provides a description of the interface plus maintenance considerations.

1.02 The reasons for reissuing this section are listed below. Revision arrows are used to emphasize the more significant changes. Equipment Test Lists are not affected.

- (1) Adds information on total DL outage
- (2) Adds information on DL state oscillation
- (3) Adds information on routine diagnostics
- (4) Adds information to Table A—ETS DL states
- (5) Adds information on dial-up DL diagnostics
- (6) Adds information on dedicated DL diagnostics
- (7) Adds information on trouble analysis
- (8) Adds Fig. 5—Dial-up DL Loop-backs
- (9) Adds Fig. 6—Dedicated DL Loop-backs.

1.03 The ETS features are available in 1E6 and subsequent generic programs for No. 1 ESS and 1AE6 and subsequent generic programs for No. 1A ESS. ETS is an optionally loadable feature group.

1.04 The flexibility of the ETS features make them applicable to a variety of different customer

configurations such as the stand-alone configuration, the intercity facilities concentrator configuration, and the electronic tandem network (ETN) configuration.

1.05 The stand-alone configuration consists of a customer with a single location using the ETS features to enhance feature capabilities.

1.06 The intercity facilities concentrator configuration consists of a single tandem or star ETS network configuration in which all ETS capabilities, with the exception of traveling class marks, uniform numbering, and automatic alternate routing, can be used. A single ETS switch is used to concentrate traffic from a number of subtending locations onto various facilities [FX, WATS, and direct distance dialing (DDD)].

1.07 The ETN configuration (the most complicated of the ETS applications) consists of two or more ETS switches and a number of subtending locations connected via tie trunks with ETS switches providing tandem switching and other functions. The ETS tandems can be No. 1/1A ESS central offices (COs) or DIMENSION® private branch exchanges (PBXs) with the ETS feature package.

1.08 Abbreviations used in this section are listed in Part 9.

2. ELECTRONIC TANDEM SWITCHING FEATURES REQUIRING A DATA LINK

2.01 There are two DL configurations used for ETS features (Fig. 1). A dial-up DL is used for the facilities administration and control feature and the traffic data to the customer (pollable) feature. A dedicated DL is used for the station message detail recording (SMDR) feature.

FACILITY ADMINISTRATION AND CONTROL

2.02 The facility administration and control feature provides the ETS customer access to selected data elements in the No. 1/1A ESS which control the operation of the customer ETN. These data elements control calling privileges, routing, and queuing capabilities. The customer gains access to the ESS via a dial-up peripheral unit controller (PUC) data link port. See the restriction noted in paragraph 2.06.

2.03 The customer premises equipment for accessing this port is either a Customer Ad-

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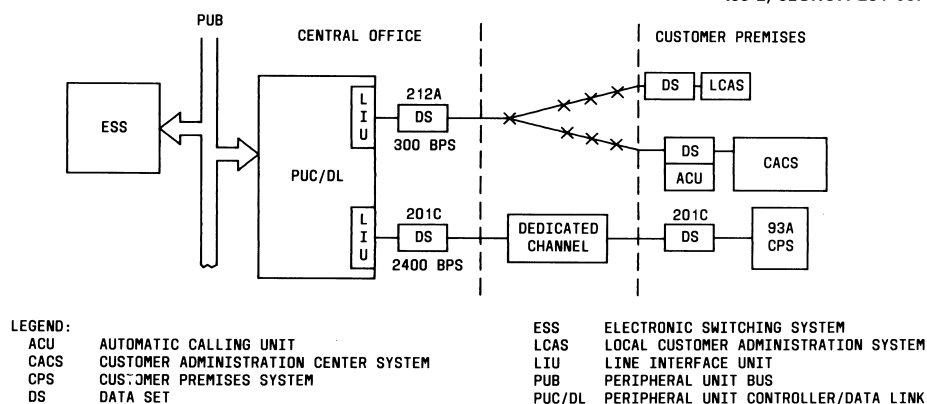


Fig. 1—Data Link Facilities

ministration Center System (CACS) or a Local Customer Administration System (LCAS).

TRAFFIC DATA TO THE CUSTOMER (POLLABLE) FEATURE

2.04 The traffic data to the customer pollable feature allows a customer to obtain (via a dial-up DL) selected traffic data on facility groups and queues. The traffic data is accumulated at each ESS or ETS switch equipped with the feature and may be accessed by the customer on demand.

2.05 The customer gains access to the ESS switch via a dial-up PUC data link port. The customer premise vehicle for accessing this port is either a CACS which is a miniprocessor based system or an LCAS which is simply a data terminal. The CACS terminal prints output that is stored and formatted by the CACS while the LCAS prints output directly from the ESS. The CACS obtains facility traffic measurements including peg counts, usage, and overflow data from each ESS ETS location. Traffic data summary reports and exception reports may be obtained via a CACS terminal from information stored in CACS. An LCAS may be used to obtain hourly or daily facility traffic measurements from each of the customer ETS switches by manually dialing up a data link at each location for each period requested.

2.06 Since the facility administration and control feature and the traffic data to customer (pollable) feature share the same dial-up PUC DL, the user cannot access the switch simultaneously for both features.

STATION MESSAGE DETAIL RECORDING

2.07 The station message detail recording (SMDR) feature is used by the customer to obtain a record of call attempts that are placed using the uniform numbering plan. A dedicated DL is used to transmit this information from the ESS to the customer equipment.

2.08 The customer equipment required for SMDR is the 93A or 94A Customer Premises System (CPS) and a 201C-L1D data set. The CPS includes a magnetic tape drive and a data set interface.

3. DIAL-UP DATA LINK

3.01 The dial-up DL (Fig. 2) requires that the peripheral unit controller (PUC) at the ESS office be equipped with an asynchronous line interface unit (LIU). This LIU consists of two circuit packs (FG-40 and FG-81). A 212A data set is needed at the CO. The DL is routed through the CO switching network to provide the dial-up capability.

3.02 A CACS or LCAS is used at the customer premises to access the dial-up DL. The data set used with the CACS or LCAS is the 212A, 103J, 113C or an equivalent. Refer to SD-1A478-01 for a list of options associated with these data sets.

3.03 An automatic calling unit (ACU) is used with the CACS for automatic dialing of the telephone number associated with the DL.

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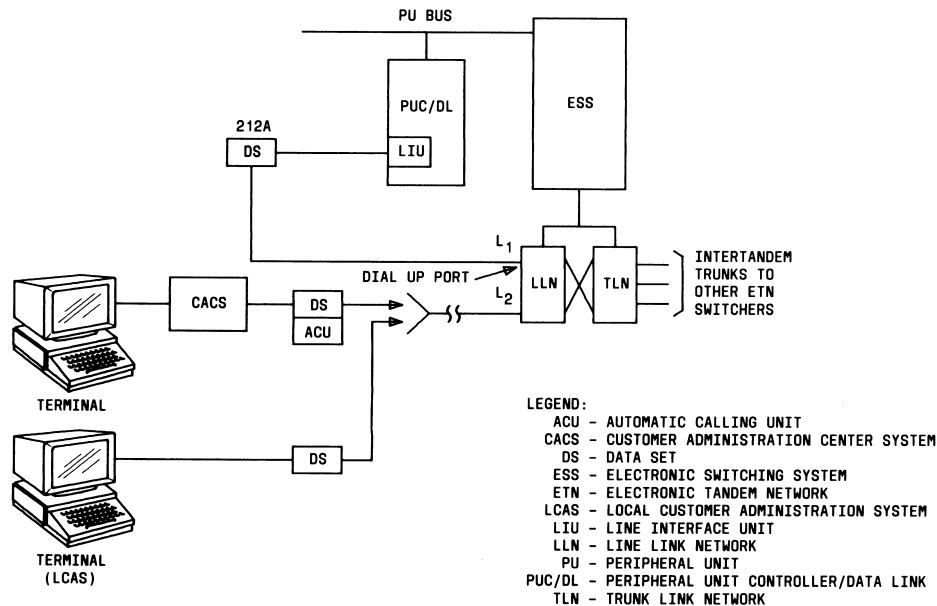


Fig. 2—Dial-Up Data Link

ACCESSING AN ELECTRONIC SWITCHING SYSTEM VIA DIAL-UP DATA LINK

3.04 The way an ESS is accessed will vary depending on the customer premises equipment. This equipment may be a CACS or an LCAS when a dial-up DL is involved.

3.05 If the customer equipment is a CACS, the user must log on to the CACS and provide a password for security. The user then inputs the command for the CACS to establish a connection. The ACU automatically dials the telephone number of the desired DL. The telephone number is stored in the CACS by telephone company personnel. For the traffic data to customer (pollable) feature, the user is not involved. The CACS is programmed to automatically dial up the switch hourly or daily.

3.06 Once the DL connection has been established, the CACS will identify itself as being a CACS,

as opposed to a terminal. The ESS responds with a prompt which causes the CACS to send a four digit security code. The ESS responds to a valid security code with a customer heading message followed by another prompt. The customer may then request any of the control or status functions. An invalid security code results in the DL being dropped.

3.07 If the customer has the LCAS, the DL must be manually dialed up. Once the connection is established, the user must depress the BREAK key on the terminal. This is the indication to the ESS that a terminal is connected to the dial-up DL. After receiving the break, ESS sends the ENTER SECURITY CODE message to the terminal. The user must respond by inputting a four-digit security code. A valid security code causes the ESS to respond with a 26-character switch identifier and a prompt. The user may then enter any of the facilities administration and control, or traffic data to customer (pollable)

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messages. An invalid security code will cause the DL to be dropped.

4. DEDICATED DATA LINK

4.01 The dedicated data link (Fig. 3) requires that the PUC at the ESS office be equipped with a synchronous LIU. This LIU consists of circuit packs FG-40 and FG-68. A 201C-L1D data set is required to terminate the DL at the CO and the customer premises. This DL is routed over a dedicated channel from the CO to the customer. The customer equipment used with this DL is the 93A or 94A CPS.

5. DATA LINK HARDWARE

5.01 The hardware required for the ETS DL consists of the peripheral unit controller data link (PUC/DL) frame and a data set at the ESS office. A channel for data transmission is required between the ESS office and the customer. A data set is also required at the customer premises.

PERIPHERAL UNIT CONTROLLER

5.02 A PUC/DL frame J4A099A-1 must be installed in each No. 1/1A ESS to support any of the following ETS features:

- Station message detail recording (SMDR) to customer premises
- Traffic data to customer (pollable)
- Facilities administration and control.

5.03 Installation of a PUC/DL frame in a No. 1/1A ESS office requires that the peripheral unit bus be modified for the peripheral unit parity feature. This involves bus wiring changes as well as hardware modifications on the processor, processor peripheral interface (1A ESS), and central pulse distributor frame.

5.04 A PUC/DL frame is 2 feet 2 inches wide, 12 inches deep, and 7 feet high. The PUC/DL frame can physically mount up to 16 data links; however, the number of links that can be installed depends on the mix of DL types and the office generic program.

5.05 A PUC/DL frame is required in each No. 1/1A ESS that interfaces with a CPS, CACS, or LCAS. These hardware items are located on the customer premises and are required to implement the above mentioned features. The CPS, CACS, or LCAS are not shared between ETS customers. Each customer with these hardware items requires one DL on the PUC/DL to interface with the CPS and one dial-up DL to interface with the CACS or LCAS.

5.06 The PUC/DL frame requires two circuit packs for the line interface unit (LIU) which is required for each ETS DL. A DL to be used with the CPS requires a synchronous LIU (circuit packs FG-40 and FG-68). Each customer having a CACS or LCAS requires one DL using an asynchronous LIU (circuit packs FG-40 and FG-81). These two DLs can be mixed on the same PUC/DL frame.

5.07 Data sets are required at both the ESS office and the customer premises. The DL for the

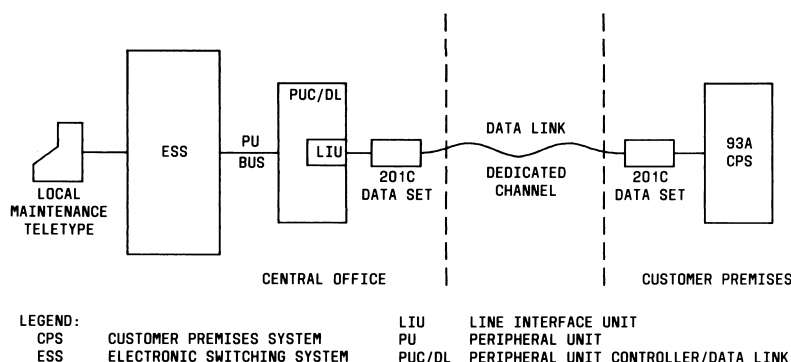


Fig. 3—Dedicated Data Link

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CPS requires 201C-L1D data sets. A DL used with the CACS or LCAS requires a 212A or equivalent data set.

5.08 Figure 4 is a simplified diagram of the PUC/DL data flow. Input messages coming from the customer equipment are transmitted over the DL, through the data set, and into the LIU of the PUC. The messages are then transmitted over an I/O bus and are stored in input buffers contained in the auxiliary scan memory (ASM). The ESS retrieves these messages via the scanner answer bus (SCAB). Output messages are sent from the ESS to the PUC on the peripheral unit address bus (PUAB) using peripheral orders. All orders sent to the PUC are stored in a first-in first-out (FIFO) buffer. A BELLMAC*-8 microprocessor operating under control of instructions stored in programmable read only memory

(PROM) transfers data messages from the common FIFO to destination buffers in random access memory (RAM). Application protocol firmware, also residing in PROM, then transfers the data messages from the destination buffers to the LIUs for transmission over the DLs.

6. DATA TRANSMISSION

6.01 Data transmission between the PUC/DL and the CACS is in the form of eight bit ASCII characters or eight bit bytes of binary data in the case of traffic data. The LCAS requires data transmission in the form of seven bit ASCII characters. Data exchange between the ESS and the PUC/DL is

*Trademark

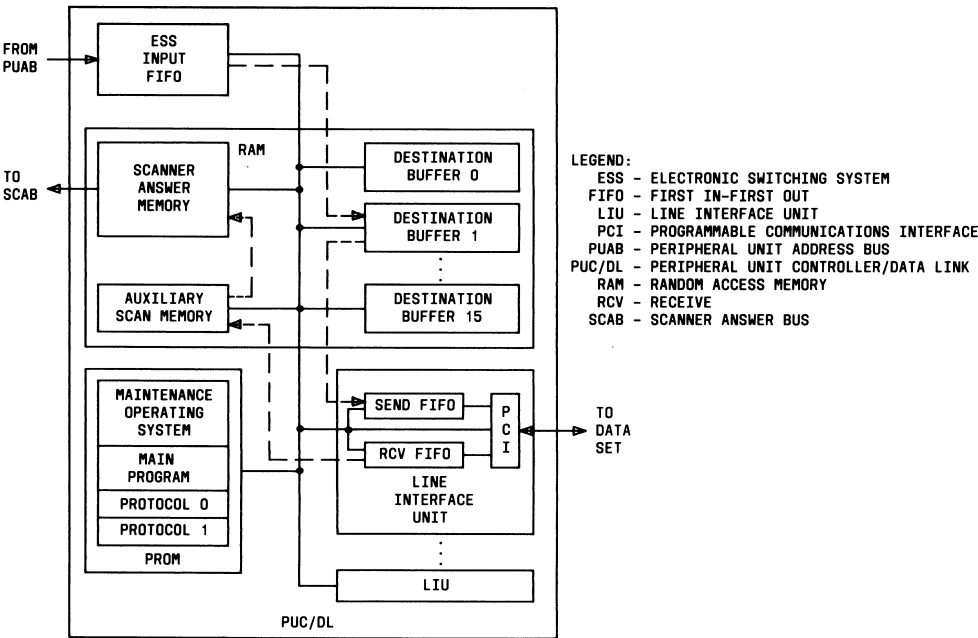


Fig. 4—Peripheral Unit Controller/Data Link Data Flow

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in an eight bit form. The conversion from eight bits to seven bits and vice-versa is performed in the LIU.

6.02 The data transmission rate for the dial-up DL is 300 bits per second (BPS). The rate used for the dedicated DL is 2400 BPS.

COMMUNICATION PROTOCOL

6.03 Communication protocol functions determine the way in which data is transmitted or received over the DL and the format of that data. The ETS features have distinct communication protocols for data transfer between the PUC/DL and the customer premises equipment.

6.04 Some protocol functions require software control while other functions are controlled automatically by hardware action. The PUC/DL LIU, designed for the particular ETS application, uses the programmable communications interface (PCI) device capable of a wide variety of hardware functions dealing with the basic link protocol. Some protocol functions require interaction between the PUC/DL firmware and the PCI.

6.05 The basic link protocol for ETS features refers to data transfer conditions that occur after the remote end is connected and defined to be a CACS or LCAS. Each remote connection requires a specific set of conditions for successful data transfer. These conditions are controlled by internal PCI registers. The registers set conditions such as parity type and baud rate.

DATA INTEGRITY

Echo Mode

6.06 The normal receive mode configuration of the PUC/DL controlled PCI includes an echo function. When a byte of data is received by the PCI and sent to the LIU FIFO, it is simultaneously transmitted back to the remote end. Thus, the CACS can perform a complete data match with the data it sent to the PUC-DL, and the data terminal user will see printed at the terminal what the PUC/DL received.

Echo Mode Exceptions

6.07 When the PUC/DL is in the transmit mode and if the firmware detects a break character sent from a data terminal, it places the PCI in the

receive non-Echo mode. This is done to prevent accidental key operation resulting in erroneous character(s) being printed that may confuse the operator. Until a special control character has been processed or a time-out occurs, the printout at the data terminal will cease.

Parity

6.08 Each byte of data sent has a parity bit attached. The parity for the entire byte of data is odd for the CACS and is even in the case of the LCAS. It is detected by the PUC/DL PCI as each character is received. The parity error is not checked by the firmware, however, until the end-of-message **CR** is detected. If a parity error is detected, the receive buffer is cleared and a message is passed to the ESS. The ESS will then send a failure message to the remote end. If the CACS or terminal user detects a parity error from an echoed byte of data prior to sending a CR, it should cancel the previous data as a method of speeding the retry. Detection of a parity error on an echoed CR is an exception to the above statement. In this case, the CR should be repeated until a correct response is achieved, a break character is detected, or until the link is judged bad.

ERROR REPORTING

6.09 Each time an error in sending or receiving data is detected by the PUC, an error count is incremented. Each successful message relayed decrements the count. If the count exceeds a specified parameter, an indication is sent to the ESS.

6.10 A framing error is treated as a parity error.

6.11 A change in state of the data carrier is reported to the ESS by the PUC. The ESS, upon detecting loss of carrier on a CACS or LCAS DL, assumes the remote has hung up and initializes the LIU and firmware so the data set can be accessed again. When carrier is lost on the SMDR DL, a carrier failure message is reported to the ESS. The ESS will then buffer SMDR messages for up to 2 minutes. A maximum of 150 originating records may be buffered. For smaller records, a proportionally greater number of records can be buffered.

6.12 Several conditions may occur that require an audit. An audit message is passed to the ESS to alert it to the condition.

6.13 A PCI overrun occurs when the PCI receive holding register is not unloaded before a new

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character is received. An error message is passed to the ESS which in turn initiates a protocol diagnostic if not involved with a higher level PUC/DL maintenance problem. When the DL is reconfigured to an active state, a prompt sequence and possibly a data message should be sent to the remote.

7. MAINTENANCE

7.01 The ETS uses a simplex application DL consisting of a single DL between the ESS office and the unit at the remote end. The ETS does not require a duplicated DL since the reliability of the DL does not affect the reliability of processing calls.

DATA LINK IDENTIFICATION

7.02 The ETS DL can be identified two ways. The DL can be identified by the combination of the PUC member number and the DL member number or the combination of the application type and the application member number.

7.03 PUC member numbers range from 0 to 63 and identify a particular PUC frame in an office.

7.04 The DL member numbers range from 0 to 15 and identify one of the 16 possible DLs controlled by a particular PUC.

7.05 An application type identifies which application the DL is used for. For ETS, there are two application types: Application type 2 for the dial-up DL and application type 3 for the dedicated DL. Application member numbers identify the assignment of lines for individual application. For ETS, the application member numbers range from 0 to 63. The ETS application member number is defined to be the corresponding ETS customer identification (CUSTID) number minus 64. The CUSTID is a number ranging from 64 to 127 for ETS customers.

TELETYPEWRITER MESSAGES

7.06 Two input messages and one output message are used to interface with the DL state control. Refer to input and output manuals for specific information on these messages.

7.07 The **PDL-APPLIC**-input message is used to obtain a status report, switch, or initialize DLS. The message has three data fields. The first field is a requested action. The second and third are

the application and application member number, respectively. The requested action is normally taken on the link or links specified by the given identification. A problem in the system may cause the action to be aborted.

7.08 The **PDL-LNK**-input message is used to request the status of, reconfigure, or request a diagnosis of a DL. This message also has three data fields. They consist of the action request, the PUC member number, and the DL member number. The requested action is normally taken on the specified link.

7.09 The **PUCDL** output message indicates the current state of a DL and reports any reconfiguration action taken. The first line of this message contains the PUC member number, DL member number, the requested action (stimulus), and a code indicating whether or not the action was successful (disposition). The second and following lines give the application, application member number, DL member number, and resulting state of the link involved in the transaction.

7.10 The **PUCDL** output message is printed whenever the DL state control responds to a stimulus. Examining the sequence of these messages and the sequence of DL states contained in them enables maintenance personnel to determine exactly what has happened to the links.

7.11 The disposition field of the output message is used to determine the results of the stimulus. The **INV** in the disposition field indicates an invalid stimulus was used and no action was taken. For example, this would occur if the specified link is unequipped. **DEN** in the disposition field indicates that the request was denied and no action was taken. This occurs when the request is incompatible with the current DL state. **EXC** indicates that the state control was successful in taking action on the stimulus. **BLK** in the disposition field indicates that the state control attempted to take action but was unable to complete it. The requested action will be blocked if there are not enough idle words in the PUC FIFO buffer. Another possible cause for blockage is that the ESS was performing an audit of the PUC FIFO and was not allowing orders to be sent.

DATA LINK STATES

7.12 There are nine DL states possible with ETS. There is no standby state since ETS uses sim-

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plex DL configurations. The nine states are described in Table A.

♦TOTAL DATA LINK OUTAGE

7.13 A total DL outage occurs when a simplex-application fails. There is no duplicated link to carry the data. Communication with the far end is lost and the host ESS program performs the following sequence:

- (1) Wait 30 seconds
- (2) Send orders to the PUC to place the link into service
- (3) Wait 6 seconds or until the PUC returns a response message over the link.
- (4) If the response indicates that the link was successfully placed into service, the recovery sequence is complete. If the response indicates that the link was not placed into service, or if there was no response, the program goes back to step 1.
- (5) If six of these cycles pass without a successful recovery (3.6 minutes maximum), the program stops retrying and schedules a diagnostic at high priority.

If the diagnostic passes, the link will be restored to service and the recovery actions are complete. If the diagnostic fails, the link is placed in the OOS FLT state and the program stops recovery actions until the hourly or midnight diagnostic runs or until a manual request is made.

DATA LINK STATE OSCILLATION

7.14 Some faults can cause the DL state to oscillate between in-service and out-of-service (OOS).

7.15 One instance in which such oscillation may occur is the presence of a DL fault which disrupts traffic but cannot be detected by the diagnostic. Such faults exist, especially for the simplex ETS links, since the modems used in these applications contain a limited amount of automatically-accessible test hardware. When the DL failure is detected, the link is removed from service and a diagnostic is scheduled. The diagnostic passes since it cannot find any fault. The link is then placed back into service.

7.16 The presence of a transient fault can also cause DL state oscillation. Diagnostics are not

executed in this case because the fault disappears quickly enough to allow the total DL outage recovery mechanism to restore the link.

7.17 The process used to detect state oscillation is called trouble analysis. The three trouble analysis thresholds for acceptable DL outage rates are the following:

- (1) Four transitions per hour between the ACT state and OOS.
- (2) Eight transitions per hour between the ACT DEG state and OOS.
- (3) Ten transitions per hour between either of the above states and OOS.

7.18 Counts are kept of these transitions. If any of them exceed the appropriate threshold, the link is placed into the out-of-service trouble analysis state (OOS TBL) instead of the state into which it would otherwise be placed.

ROUTINE DIAGNOSTICS

7.19 Two maintenance control routine exercise programs attempt to place OOS links back into service on a routine basis if manual action is not taken. One program is executed every hour and the other every midnight. These programs schedule diagnostics on OOS DLs that are not in the forced, unavailable state. If the diagnostics pass, the links are then restored to service.

7.20 In addition to the routine exercises on the OOS links, all in-service links are diagnosed on a routine basis by the midnight routine exercise program. Diagnostics are scheduled on all simplex-application DLs in service at midnight; this involves a brief loss of service as the diagnostic runs.♦

DIAGNOSTICS

7.21 The PUC/DL diagnostic program in the ESS is basically a supervisory program. The diagnostic program which actually checks the hardware is located in the PUC firmware. The PUC firmware resides in erasable programmable read only memory (EPROM). The ESS program decides which phase of the diagnostic to run and sends the appropriate orders to the PUC. The PUC firmware program then executes the diagnostic request and reports the results to the ESS.

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♦TABLE A♦

DATA LINK STATES

STATE NAME	DESCRIPTION OF STATE
ACTIVE (ACT)	A link in this state is fully operational. Protocol performance parameters are set for normal operation.
ACTIVE DEGRADED (ACT DEG)	A link in this state is operational except protocol performance parameters have been degraded from those used in the ACT state in order to allow higher error rates without taking the link OOS.
ACTIVE FORCED (ACT FRC)	CAUTION: Do not use this state unless absolutely necessary. A link is forced into and removed from this state by manual request only. It is forced on line and all automatic maintenance is removed from it. Errors on the link are ignored and there is no guarantee that an ACT FRC link is in fact operational.
OUT OF SERVICE REMOVED (OOS REM)	When a fault occurs on a link, the link is automatically removed from service, placed in OOS REM state, and a diagnostic is scheduled. When the diagnostic is finished and the results reported to the state control, the link is placed in an appropriate state.
OUT OF SERVICE FAULT (OOS FLT)	A link is placed into this state when the diagnostic detects a hard fault. It is automatically removed from this state if the diagnostic passes on the link.
OUT OF SERVICE TROUBLE ANALYSIS (OOS TBL)	A link is placed in this state when it has been making too many transitions between in-service and out-of-service states within a certain time period. This situation indicates that there is some problem with the link that the diagnostic cannot detect. The link will remain in this state until the problem is fixed and the link is manually restored.
OUT OF SERVICE MANUAL (OOS MAN)	A link is placed into this state only by manual request. It is removed from service and stays removed until manually restored. This state is generally used by maintenance personnel to run diagnostics. For simplex DLs, the OOS MAN state is identical to the UNV state.
UNAVAILABLE (UNV)	CAUTION: Do not use this state unless absolutely necessary. A link is placed into the unavailable state only by manual request. The link is removed from service until manually restored. A link is put in the unavailable state in order to change circuit packs since the link cannot be automatically restored by the system while in this state. For simplex DLs, the UNV state is identical to the OOS MAN state.
INVALID (INV)	A link is in this state only during installation of DLs, when growth procedures are being followed.
♦RECOVERY ACTIVE (REC ACT)	This is the state of a link waiting for the response to total link outage activation.
RECOVERY OUT-OF-SERVICE (RCV OOS)	This is the state of a link waiting for total link outage processing activation.♦

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7.22 Once execution of the diagnostic begins, the DIAGNOSTIC IN PROGRESS lamp on the master control center (MCC) lights. A MAC-CLIENT- input message will verify that the PUC/DL diagnostic is actually in progress. The diagnostic may be terminated at any time by depressing key 20 of the MCC program control.

7.23 There are three manual requests for diagnostics on ETS data links. The input messages PDL-FULDGN and PDL-LNK-DGN request full diagnosis of the DL. The PDL-PARDGN input message can be used to request a range of phases, a single phase, or to loop on a single phase.

7.24 ♦ A full diagnostic stops on the first failure and prints the phase results. If the diagnostic completes successfully, a single message declaring all tests pass (ATP) is printed.♦

7.25 A full diagnostic for all ETS DLs is automatically requested at midnight. A full diagnostic for all OOS DLs is automatically requested on the hour.

7.26 There are several restrictions associated with ETS DL diagnostics. A diagnostic will never run on an active link. A diagnostic request will ask DL state control to remove the link from service. If state control complies, the diagnostic will continue; otherwise, the diagnostic aborts and an output message reports.

7.27 A second restriction is that a link must be manually forced in the unavailable (UNV) state in order for the diagnostic to loop on any phase. If the link is not in the UNV state, a request for a loop on a diagnostic phase will abort. The abort is reported via output message.

7.28 Another restriction is that the diagnostic will not run if maintenance has been removed on the PUC. This is usually the cause of the RL TACK on TTY input messages.

7.29 A maximum time limit of approximately 150 seconds is placed on the completion of any one phase. Exceeding this time limit will either cause the diagnostic to abort (reporting **TIME** or **BLKD** on the TTY output message) or fail the phase in progress. The decision depends on an internal sanity count and the diagnostic function in progress.

A. ♦Dial-Up Data Link

7.30 The diagnostic for the dial-up DL is comprised of three phases. Figure 5 shows where data is looped back for the individual phases.

7.31 Phase 1 resets the I/O ports on the FG40 pack and checks the status of both receive and transmit ports to verify that they were reset.

7.32 Phase 2 tests the interface between the FG40 and FG81 packs. The LIU is placed in an on-board loop mode and data is transmitted from the FG40 to the FG81 and back. The data consists of a zero walked through a field of ones and a one walked through a field of zeros.

7.33 Phase 3 is equivalent to phase 2 except that the data is looped back at the local modem. Since the No. 212A modem lacks an automatic loop-back feature, this phase can only pass when the analog loop-back (AL) button on the local modem is depressed. The phase also requires manual intervention, and is executed by manual TTY request only. Phase 3 is the only phase that is not run as part of a full diagnostic.

7.34 A full diagnostic (Phases 1 and 2) may be requested at any time. If the link is active, the PUC-DL state control software normally removes the link from service to allow the diagnostic program to execute. Then, if all tests pass, the state control software activates the link.

Caution: *Be careful when diagnosing an active link. Removing the link from service will not remove the carrier from a customer terminal, but the terminal will be functionally inoperative.*

7.35 Phase 3 should be run to completely test the DL. This implies that the partial diagnostic TTY message must be used and the link must be OOS.

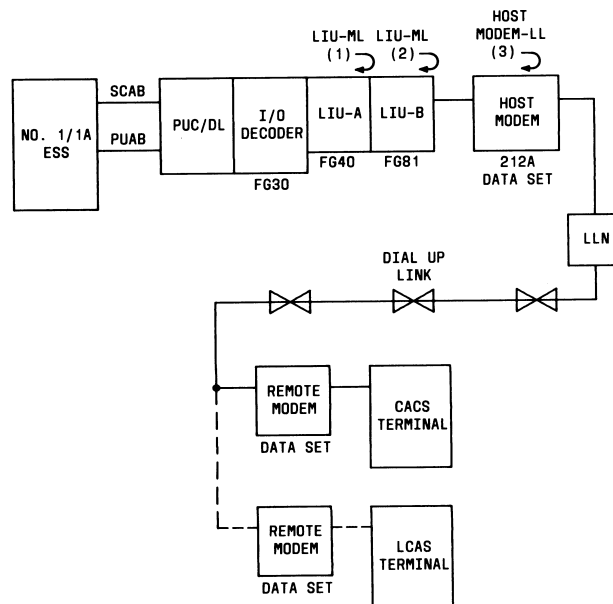
7.36 The DL may be inaccessible to a customer terminal but appear active and pass diagnostic tests at the host equipment. The customer may be able to dial up the link and get ringing, but not the carrier. Most causes can be determined by running phase 3 of the diagnostic. However, phase 3 cannot detect when one or more of the local modem buttons are depressed, or if there is a broken or bad output cable connection from the local modem to the line link network (LLN).

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LEGEND:

- CIRCUIRY TESTED BY PHASE.
FOR EXAMPLE, PHASE 1 TESTS
CIRCUIRY TO AND FROM
LIU-A (FG40)
- (a) - PHASE NUMBER
- TRANSMISSION LINE
- CACS - CUSTOMER ADMINISTRATION
CENTER SYSTEM
- ESS - ELECTRONIC SWITCHING SYSTEM
- I/O - INPUT/OUTUT
- LCAS - LOCAL CUSTOMER ADMINISTRATION SYSTEM
- LIU - LINE INTERFACE UNIT
- LL - LOCAL LOOP
- LLN - LINE LINK NETWORK
- ML - MAINTENANCE LOOP
- MODEM - MODULATOR-DEMODULATOR
- PUAB - PERIPHERAL UNIT ADDRESS BUS
- PUC/DL - PERIPHERAL UNIT CONTROLLER/DATA LINK
- SCAB - SCANNER ANSWER BUS

Fig. 5—Dial-Up Data Link Loop-Backs

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7.37 Another problem shows up when the diagnostic reports PSTAT as the TTY abort output message. This report indicates that the PUC experienced an I/O fault when attempting to access the DL for diagnosis.

B. Dedicated Data Link

7.38 The dedicated DL diagnostic is comprised of five phases. Figure 6 shows where data is looped back for the individual phases.

7.39 Phase 1 resets the I/O ports on the FG40 pack and checks the status of both receive and transmit ports to verify that they were reset.

7.40 Phase 2 tests the interface between the FG40 and FG68 packs. The LIU is placed in an on-board loop mode and data is transmitted from the FG40 to the FG68 and back. The data consists of a zero walked through a field of ones and a one walked through a field of zeros.

7.41 Phase 3 tests the ability of the data link to pass traffic. The diagnostic activates the DL and sends a message and an additional data word to the 93A/94A processor at the customer premises. The message and the data word are then echoed back to the PUC. The two words are placed in the PUC maintenance buffer where the diagnostic program unloads the data word and checks it for accuracy.

7.42 Phase 4 is equivalent to phase 2, except that the data is looped back at the local modem. This is the first of two phases that are not run as part of a full diagnostic, because the analog loop-back (AL) button on the local modem must be depressed. Also, at present, this phase does not report all tests pass (ATP). The result must be analyzed to determine if the phase actually passed.

7.43 Phase 5 is similar to phases 2 and 4 except that 1000 messages are sent from the PUC to the customer modem and then return. This phase counts the number of messages that were destroyed in the transmit and receive process for a general indication of transmission quality. The 201C modem does not employ a software-controlled automatic loop-back feature, so the digital loop-back (DL) button on the customer modem must be depressed. Phase 5 is the second phase that cannot be run during a full diagnostic. At present, this phase cannot report all tests pass (ATP). The result must be analyzed to deter-

mine if the phase passed or, if not, what the number of message failures were.

7.44 A full diagnostic (phases 1 through 3) may be requested at any time. The diagnostic program requests the state control software to remove the link from service if the link is active. This temporarily removes communication to the 93A/94A CPS. The diagnostic runs, and if it passes, reports ATP to the state control software. The link is then placed back into service. The first two LIU diagnostic phases may pass, but the overall loop-around phase times out or fails. This is a characteristic problem external to the LIU. The manually requested phases (4 and 5) can be used to help determine the cause.

7.45 Both phases 4 and 5 have undesirable interactions with the other diagnostic phases and should be run separately. Maintenance personnel must depress a button on either the local or customer modem for those phases to run successfully. Phase 4 requires that the AL button be depressed on the local modem, and phase 5 requires the DL button be depressed on the customer modem. Therefore, use phases 4 and 5 only during installation and when attempting to locate a transmission facility problem.

7.46 Any button depressed on either modem causes protocol failure reports from the PUC when the link is placed active. Therefore, when phases 4 and 5 are completed, the modems should be placed in their normal operating condition. Phases 2 and 3 will fail if any modem button is depressed.

7.47 A full diagnostic verifies the communication path to the 93A/94A processor when it passes. However, if the 93A/94A processor loses the phase 3 loop-around message, the phase could fail even though it is likely some data was sent across the link.

7.48 Messages designed for the host are queued-up after several minutes if the 93A/94A processor is in the stand-alone mode. When the diagnostic program activates the link, the 93A/94A processor transmits these messages first and then the loop-around message. If the loop-around message is lost, the phase fails and the link remains OOS. If another full diagnostic is run immediately, the link should pass and be placed active by the state control software. The first message sent to the 93A/94A processor following the diagnostic will request a functional test to regenerate the messages that may have been lost.

7.49 The diagnostic may abort and report PSTAT as the TTY output message. This report is printed when the PUC experiences an I/O fault.♦

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Figure 1 is a block diagram illustrating the data link between a host and a remote premises. The diagram is divided into two main sections: the Host Side and the Remote Premises Side, connected by a DEDICATED PRIVATE LINK.

Host Side:

- The **NO. 1/1A ESS** (Essential Service System) is connected to the **SCAB** (Service Control and Access Block) and **PUAB** (Public Access Block).
- The **SCAB** and **PUAB** are connected to the **PUC/DL** (Public User Circuit/Decoder Link) block.
- The **PUC/DL** block is connected to the **I/O DECODER** block.
- The **I/O DECODER** block is connected to the **LIU-A** (Local Interface Unit - A) and **LIU-B** (Local Interface Unit - B) blocks.
- The **LIU-A** and **LIU-B** blocks are connected to the **LIU-ML (1)** (Local Interface Unit - Master Link) and **LIU-ML (2)** (Local Interface Unit - Master Link) blocks.
- The **LIU-ML (2)** block is connected to the **HOST MODEM-LL (3)** (Host Modem - Local Link) block.
- The **HOST MODEM-LL (3)** block is connected to the **201C DATA SET**.

Remote Premises Side:

- The **201C DATA SET** is connected to the **REMOTE MODEM-RL (5)** (Remote Modem - Remote Link) block.
- The **REMOTE MODEM-RL (5)** block is connected to the **93A CUSTOMER PREMISES SYSTEM**.
- The **93A CUSTOMER PREMISES SYSTEM** is connected to the **93A TAPE DRIVE**.

DEDICATED PRIVATE LINK:

- The **HOST MODEM-LL (3)** block is connected to the **REMOTE MODEM-RL (5)** block via the **SOFTWARE LOOP** block.
- The **SOFTWARE LOOP** block is connected to the **REMOTE MODEM-RL (5)** block and the **93A CUSTOMER PREMISES SYSTEM**.

- CIRCUITRY TESTED BY PHASE.
- ↪ FOR EXAMPLE, PHASE 1 TESTS CIRCUITRY TO AND FROM LIU-A (FG40)
- (a) - PHASE NUMBER
- ⊗ TRANSMISSION LINE
- ESS - ELECTRONIC SWITCHING SYSTEM
- I/O - INPUT/OUTPUT
- LIU - LINE INTERFACE UNIT
- LL - LOCAL LOOP
- MODEN - MODULATOR-DEMULATOR
- ML - MAINTENANCE LOOP
- PUAB - PERIPHERAL UNIT ADDRESS BUS
- PUC/DL - PERIPHERAL UNIT CONTROLLER/DATA LINK
- RL - REMOTE LOOP
- SCAB - SCANNER ANSWER BUS

Fig. 6—Dedicated Data Link Loop-Back

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8. SIMPLEX LINK STATE CONTROL

8.01 Reconfiguration stimuli are inputs to DL state control and can be manual requests, PUC failure reports, or diagnostic reports. Output messages are generated to report DL status and related information.

MANUAL REQUESTS

8.02 A status request **STR** causes a PUC/DL output message to be printed. The output message will contain the status of the specified link or links.

8.03 Restoring the link to service **RST** causes the state control to take all steps necessary to make the link active (ACT) with full automatic maintenance. For OOS and UNV links, the link must pass the diagnostic first. For active degraded (ACT DEG) and active forced (ACT FRC) links, masking of the error conditions will discontinue.

8.04 If the remove link from service request **RMV** is input and the specified link is in one of the three active states, service is halted and the link is made out of service manual (OOS MAN). If the link is already OOS or UNV, the request is denied. To make an OOS MAN link active, the link must be manually restored.

8.05 The detain link OOS request **DTN** places an OOS link into the OOS MAN state so it will not be automatically placed into service. If the link is in one of the three ACT states or already OOS MAN, the request is denied.

8.06 The force link active request **FRA** places the link on line and removes all automatic maintenance. Errors and faults are ignored while in this state, and there is no assurance that the link is actually carrying traffic. A link can be removed from the ACT FRC state only by manual request.

8.07 The force link unavailable request **FRU** forces the link to be placed in the unavailable state regardless of its previous state. For simplex DLs which are used for ETS, the UNV and OOS MAN states are identical.

8.08 The diagnostic request **DGN** causes a diagnostic to be run on the specified link. The link must be OOS for the diagnostic to run. If the link is

in the ACT or ACT DEG state, it will be put in the out of service removed (OOS REM) state automatically before running diagnostics.

8.09 The request to initialize a link **INI** causes all the data structures associated with the link to be initialized. The link is put in the ACT state. Any traffic in progress on the link is dropped when the link is initialized.

PERIPHERAL UNIT CONTROLLER FAILURE REPORTS

8.10 The PUC failure reports are generated by the PUC and are processed only for links in the ACT and ACT DEG states. When one of these reports is received, the link is put in the OOS REM state and a diagnostic is automatically scheduled. If the diagnostic passes, the link is made ACT. If the diagnostic fails, the link will stay OOS until manually restored.

8.11 Carrier failure **CARFAL** is caused by the loss of carrier on the link and is detected by the PUC. **CARFAL** is reported for dedicated DLs only.

8.12 Excessive error rate **EXCERT** is reported when the transmission errors on a link exceeds a given threshold. Performance parameters determine this threshold. A link in the ACT state will be made ACT DEG. The ACT DEG state has a higher error threshold but if this threshold is exceeded, the link will be put OOS. If the higher threshold is not exceeded, the link will only be made ACT if the routine midnight diagnostic passes or a manual restore request is made. ♦**EXCERT** is reported for dedicated DLs only.♦

8.13 A circuit failure **CKTFAL** is reported if the PUC detects a hardware fault in its data link interface circuit when trying to transmit or receive on a link.

8.14 A protocol failure **PCLFAL** is reported if the far end of a link does not acknowledge receipt of a DL message and a series of retransmissions and protocol handshakes fail. ♦**PCLFAL** is reported for dedicated DLs only.♦

8.15 ♦Trouble analysis **TBLANA** is reported when failures on a link for a period of time exceed an acceptable number (paragraph 7.17).♦

DIAGNOSTIC REPORTS

8.16 Diagnostic reports are generated by the DL diagnostic and passed to state control.

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8.17 The remove link for diagnosis request **DGN** is sent to state control when a diagnostic is requested on an in-service link. If the link is ACT or ACT DEG, it is put in the OOS REM state. If the link is ACT FRC, the request is denied and the diagnostic is aborted. If the diagnostic passes while in the OOS REM state, the link will be made ACT automatically.

8.18 The diagnostic all-tests-pass report **DGNATP** occurs when the diagnostic finds no faults on the link. If the link is in the OOS REM or our-of-service fault (OOS FLT) state, it is placed in the ACT state.

8.19 The diagnostic some-tests-fail report **DGNHDW** occurs when a diagnostic finds a fault on a DL. If the link is OOS REM, it is placed in the OOS FLT state. The output message generated by the diagnostic will contain the information required to locate the fault.

8.20 The diagnostic aborted report **DGNABT** is caused by the diagnostic aborting before normal completion. The link state does not change.

8.21 The partial diagnostic finished report **PADGFI** occurs when a requested partial diagnostic is finished. The link state does not change.

9. ABBREVIATIONS

9.01 The following abbreviations are used in this section.

ACU	Automatic Calling Unit
ACT	Active
ACT DEG	Active Degraded
ACT FRC	Active Forced
AL	Analog Loop-Back
ASM	Auxiliary Scan Memory
ATP	All Tests Pass
BPS	Bits Per Second
CACS	Customer Administration Center System
CO	Central Office

CPS	Customer Premises System
CTX	Centrex
CUSTID	Customer Identification
DDD	Direct Distance Dialing
DL	Data Link
DS	Data Set
EPROM	Erasable Programmable Read Only Memory
ESS	Electronic Switching System
ETN	Electronic Tandem Network
ETS	Electronic Tandem Switching
FIFO	First In-First Out
FX	Foreign Exchange
I/O	Input/Output
LCAS	Local Customer Administration System
LIU	Line Interface Unit
LLN	Line Link Network
MCC	Master Control Center
MTCE	Maintenance
OOS	Out-of-Service
OOS FLT	Out-of-Service Fault
OOS MAN	Out-of-Service Manual
OOS REM	Out-of-Service Removed
OOS TBL	Out-of-Service Trouble
PBX	Private Branch Exchange
PROM	Programmable Read Only Memory
PUB	Peripheral Unit Bus

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PUAB	Peripheral Unit Address Bus	BSP 231-090-166	Message Detail Recording
PUC	Peripheral Unit Controller	BSP 231-037-020	PUC Description
PUC/DL	Peripheral Unit Controller Data Link	BSP 231-090-062	PUC/DL Feature
RAM	Random Access Memory	BSP 231-090-154	ETS Feature
SCAB	Scanner Answer Bus	BSP 999-500-128	How to Operate and Application Information for the LCAS
SMDR	Station Message Detail Recording	BSP 999-500-129	How to Operate and Application Information for the CACS
TACK	TTY Acknowledgment	BSP 533-901-100	93A CPS, Descriptive Information
TLN	Trunk Link Network	BSP 190-402-100	94A CPS, Descriptive Information
TTY	Teletypewriter	BSP 592-029-120	Data Set 210C - L1D Transmitter - Receiver, Description and Operation
UNV	Unavailable	BSP 592-034-100	Data Set 212A - L1A/2A Transmitter - Receiver, Description and Operation
WATS	Wide Area Telephone Service.	SD-1A478-01	PUC Circuit for Data Link Applications.
10. REFERENCES			
10.01 The following documents provide further information in related areas.			
BSP 231-090-163	Facility Administration and Control		
BSP 231-090-168	Traffic Data to the Customer (Pollable)		

Ameritech Call Control

General Information

Ameritech Call Control (ACC) is an Advanced Intelligent Network (AIN) feature that provides a customer the ability to screen outgoing calls from their telephone line. ACC screening allows outgoing calls to be completed or rejected. The customer has the ability to restrict calls based on the number dialed, coupled with the time-of-day (TOD), day-of-week (DOW), or day-of-year (DOY).

The customer may activate or deactivate ACC either manually or automatically during specific time periods. The customer may modify the parameters through the use of a DTMF (Touch-Tone) telephone. ACC also allows the customer to dial an override code during an interactive announcement to override all call restrictions.

AIN Elements

The AIN feature is designed to allow Ameritech/SBC to develop new services for customers without going through the process of having the switch vendors developing new feature packages. Typically, switch vendors require 18–24 months to develop new services. Then all switches require the new software load. AIN allows Ameritech/SBC to greatly reduce the time necessary to bring new products to our customers.

Service Control Point (SCP) is the AIN database that provides for how the SCP should proceed with an AIN call. By keeping the database in the SCP, there is no need to duplicate the information in each end office.

Service Switching Points (SSP) are switching offices that are equipped with the hardware and software to handle Signaling System 7 (SS7) trunk signaling and recognize AIN triggers. The SSP sends queries to a SCP and processes responses from the SCP that control how the SSP should proceed with an AIN call.

Service Management Systems (SMS) is an operations system for creating and managing AIN services. Customers access SMS by a PC or from a DTMF telephone to modify their parameters in the SCP.

There are two releases of AIN software. They are called *AIN Release 0.0* and *AIN Release 0.1*. The SSP may have both releases working simultaneously providing different services. ACC uses AIN Release 0.1 only.

Service / Feature Operation

The screening of outgoing calls is divided into three subsets: 1. The allow list – dialed numbers to be allowed. 2. The reject list – dialed numbers to be restricted. 3. All other numbers not on the allow or reject list.

The screening list can be set up to allow/restrict all outgoing calls except to certain specified numbers, area codes, or local prefixes. Entries on the screening list can reflect any single number or combination of numbers representing long distance or local calls.

If the network determines that a call is to be restricted, the calling party will receive an interactive announcement. The customer (or authorized user) can override this rejection through the use of an override code. This override code is customer changeable through a DTMF telephone.

Customers have the opportunity to utilize the screening function in the way that best serves their needs. All calls, except 911, can be restricted. All operator assisted calls (0+, 0-, 00+, 00-) can either be allowed or rejected. ACC will not be offered where 911 is not available.

The standard menu blocking choices include:

- Block all 900 and 976 calls.
- Block all long distance calls.
- Block all operator assisted calls.
- Block specific telephone number, prefix and/or area code – maximum of 10 individualized entries.
- Block all outgoing calls (except 911).
- Allow the following exceptions to blocked calls – maximum of 10 individualized entries.

A customer gains access to the Interactive Voice Response (IVR) unit from their telephone by dialing *95. The IVR unit interacts with the AIN SMS to allow the customer to change or modify their screening list. If the customer wishes to modify their screening list remotely, (i.e. from some telephone other than the line which has the ACC service), the customer must dial a 7 or 10 digit number and follow the prompts.

Triggers

Triggering is the process of identifying an AIN call to the SSP. A trigger provides an indication of the SSP to suspend normal call processing and launch a query to the SCP.

Trigger types for AIN Release 0.1 are:

1. Off-Hook Immediate
2. Off-Hook Delay
3. Shared Interoffice Trunk
4. 3 / 6 / 10 Digit Public Office Dialing Plan
5. N11
6. Customized Dialing Plan
7. Automatic Flexible Routing
8. Termination Attempt

The *Off-Hook Delay* trigger is used for ACC services on POTS classes of lines.

Maintenance

This document mentions the following switching centers; Field Dispatch Center (FDC), Switching Technology Center (STC), and Centralized Translations Group (CTG). If these centers are not yet established, assume the Switching Control Center (SCC) will perform most of the functions of these new centers.

The Maintenance Center (MC) or Receipt/Screen (RTS) Center will refer ACC trouble reports to the appropriate FDC for analysis. Work and Force Administration (WFA) and Loop Maintenance Operating System (LMOS) should be used where possible for referring trouble reports.

If the FDC determines the problem is not in the SSP, then the trouble report is referred to the Intelligent Network Administration Center (INAC) at (312) 424–2070. If the INAC can find nothing wrong, they will request the FDC to contact their next tier of support. The next tier of support for the FDC is the STC for the specific central office type.

Provisioning

The CTG, the INAC, and the Recent Change Memory Administration Center (RCMAC) groups are responsible for provisioning ACC service.

Notice: Translation Change Notice (TCN) / Mechanized Translation System (MTS), is also responsible for establishing the necessary initial translations to provide AIN Release 0.1 capabilities.

RCMAC will assign the *Off-Hook Delay* trigger to the customer's line from the service order. The balance of the translations are provisioned at the INAC. The INAC work must be completed before RCMAC adds the trigger to the line translations. Failure to do so will result in all outgoing call attempts (except 911) being routed to an announcement.

The CTG must define an escape trigger for code 911. The purpose of the escape trigger is to tell the SSP not to send a query to the SCP when dialing certain digits. This allows the 911 call to route normally. Code 911 must be defined as an escape code to prevent a customer from rejecting the 911 code. The escape trigger also prevents code 911 from being routed to an announcement if the RCMAC work is done first in error.

AIN Announcements

There are 255 AIN Release 0.1 specific announcements possible. These announcements are standardized throughout all switch types. The SCP directs the switch via ID numbers to which announcement to play.

ACC service uses announcement IDs #3, #8, and #13. The announcement phrases are as follows:

- ID #3 (ID03WERSRRYAUTH) – "We're sorry the call you are attempting is not authorized."
- ID #8 (ID08AUTHCODENOT) – "The authorization code you have dialed is not valid. Please dial the authorization code again now."
- ID #13 (ID13REORDER) – Reorder tone.

EWSD and #5 ESS

The AIN Release 0.1 planners provided the Siemens EWSD and the Lucent #5 ESS vendors with phrase lists necessary for the announcements. The AIN Release 0.1 announcement phrases are provided for the #5 ESS and EWSD with the AIN Release 0.1 announcement hardware. Translations are used to combine the phrases into complete announcements. The CTG provided these translations when AIN Release 0.1 capability was established.

DMS–100

The phrase lists were not provided for the Nortel DMS–100. The central office personnel must record the announcements on specific DRAMS provided for the AIN Release 0.1 service in the DMS–100 switches. CTG provided the assignments for these announcements when establishing AIN Release 0.1 capability.

AIN Translations

The translation material that follows for each switch type is for general information only. This information is intended only to be a guideline to aid the FDC and STC in trouble-shooting ACC problems.

AIN Release 0.1 features are available with the following software releases:

- DMS-100 = BCS 36
- EWSD = Release 11.0
- #5 ESS = 5E9.1 Generic

AIN Release 0.1 uses the SS7 network to launch queries to the SCP database. The Global Title Translation (GTT) Number is 248 and the SubSystem Number (SSN) is 248. The GTT and SSN must be assigned and activated before AIN Release 0.1 features can be used. These translations should be completed when the AIN Release 0.1 feature package is loaded.

The feature code *95 will be translated in each SSP end office to a number that routes to the IVR located in Elgin, Illinois.

Lucent #5 ESS Translations

The escape trigger for the emergency code 911 must be entered in the *Recent Change/View 9.3 Local Digit* (Office Dialing). Field 20 (ESC CODE) must be marked "Y" for all necessary LDITs.

Nortel DMS-100 Translations

The table TRIGESC must have the emergency code 911 defined as an escape code.

Nortel DMS-100 Workarounds

The DMS-100 does not fully support AIN Release 0.1 when interacting with all possible agents. Basic Rate ISDN (BRI) is not supported with ACC service.

Primary Rate ISDN (PRI) trunk groups are looped back-to-back at the DSX bay to provide the work around. A loop-around outgoing and a loop-around incoming trunk group is used on a office wide basis for various AIN Release 0.1 services.

The Circuit Administration Center (CAC) issues message trunk orders to establish the PRI loop-around trunk groups. This allows the traffic peg counts of PRI loop-around trunks to be tracked like other message trunks. CAC will issue additional message trunk orders when overflows are detected on the PRI groups.

The following tables will have PRI trunk datafill information: CLLI, TRKGRP, TRKSGRP, TRKMEM, LTDEF, LTDATA, LTCALLS, and LTMAP.

Table TRKSGRP must be set up as "Network" for the loop-around outgoing group and as "User" for the loop-around incoming group.

Siemens EWSD Translations

An escape trigger must be entered against the emergency code 911 using the *Enter Intelligent Network* message (ENTRIN).

Vendor Documentation for AIN Release 0.1

- EWSD Release 11.0 Translations Guide – TG Book 770
- EWSD Release 11.0 Command List – CML Book 1090
- EWSD Release 11.0 Feature Descriptions Book – 0625
- #5 ESS Feature Document 235–190–126
- #5 ESS Switch Advanced Service Platform, Release 0.1B
- #5 ESS TG5 Translation Guide
- DMS–100 NTP, 297–5161–351 AIN Release 0.1 SSP Provisioning Cookbook

Line Translations

The following are examples of the *Off-Hook Delay* trigger programmed against an EWSD, DMS-100, and #5 ESS line.

For the Siemens EWSD, the OHDTRIG Class-of-Service (COS) is added.

DISPSUB:DN=3332135;

```

NPA = 815          DN = 3332135      EQN = 30- 1- 5- 6  MASKNO:03800
                   CAT = MS           MASKNO:03774
                   LTT = COSLAC5      MASKNO:03789
                   LNATT = DTMF       MASKNO:03787
                   CT = VI            MASKNO:04396
                   CFRC = 3          MASKNO:03798
                   ORIG1 = 1
                   PIC = 2222         MASKNO:04398
                   DIV = ACTCFBL -3332136 MASKNO:03780
                        & ACTCFDA -3332136
                        & CFBL
                        & CFDA

```

INTERRUPTION TEXT JOB 3372

CONTINUATION TEXT 0001

ASILB/APS11PS0202/USJCBL4N0010000/010
3372 O&MADM02/AINTST 2816/03800

```

      & CFV
      & UPCFVDN
      & NOCFIND
      & RRNG
      & CCAREQ
CHRG = FRSA1                                MASKNO:03775
COS = TWC      &CW      &OHDTRIG          MASKNO:03777
ADDINF = CLASS                                MASKNO:03772
      ABB = SPD8
      & UPSPD8

```

END JOB 3372 EXEC'D

For the Nortel DMS-100, the option is added for AIN OHDTRIG using SERVORD.

>qdn 4422135

DN: 4422135
TYPE: SINGLE PARTY LINE
SNPA: 708 SIG: DT LNATTIDX: 0
LINE EQUIPMENT NUMBER: HOST 00 0 13 10
LINE CLASS CODE: 1FR
IBN TYPE: STATION
CUSTGRP: POTSDATA SUBGRP: 0 NCOS: 0
LINE TREATMENT GROUP: 0
CARDCODE: 6X17AC GND: N PADGRP: STDLN BNV: NL MNO: N
PM NODE NUMBER: 18
PM TERMINAL NUMBER: 427
CFW INDEX: N/A
OPTIONS:
CWT 3WC DGT PIC 288 Y SC1 CFW C NSCR 10 I 1312342212 AIN OHDTRIG
RES OPTIONS:
CNDB NOAMA ACB NOAMA

>

For the #5 ESS, the /ASPORIG service is added on the 1.8 View and modified on the 1.64 View to have the OHD option set to "Y" and the AIN Release 0.1 trigger number (3 in the SIL) from the 9.35 View.

SCREEN 1 OF 6

5ESS SWITCH ATTD0
RECENT CHANGE 1.8
ANALOG LINE/BRCS ASSIGNMENT

(*)1. TN	3422135	18. RAX	1	32. BUSY MONITOR	N
(*)2. OE	_;_____	19. LCC	1FR	33. ATT MLHG	_____
(*)5. PTY	—	21. TTC	Y	34. RBV TGN	_____
(*)6. MLHG	_____	HRI	0	35. CIDIAL	ALLOW
(*)7. MEMB	_____	24. SERHLN	_____	36. PIC	0222
9. CHNG TN	3422135	25. BCK LNK	N	40. CID CW	N
10. CHNG OE	L 00101003	26. SHARED	N		
13. CHNG PTY	I	27. SAUTO	N		
CHNG MLHG	0	28. SUSO	N		
CHNG MEMB	0	29. SUST	N		
16. NEW TN	_____	30. ICP	N		
17. MFRI	N	31. PRIVACY	N		

Enter Review, Change-insert, Validate, screen#, or Print:

SCREEN 2 OF 6

5ESS SWITCH ATTD0
RECENT CHANGE 1.8
ANALOG LINE/BRCS ASSIGNMENT

>47. BFGN _____

50. FEATURE LIST (FL)

ROW	FEATURE	A	P	C	R	ROW	FEATURE	A	P	C	R	ROW	FEATURE	A	P	C	R	ROW	FEATURE	A	P	C	R
1	/ASPORIG	Y		N	N	10						19						28					
2	/CWC1	Y		N	N	11						20						29					
3	/MW3WC	Y		N	N	12						21						30					
4	/CFV	Y		N	N	13						22						31					
5	/CFBLAC	Y		N	N	14						23						32					
6	/CFDAAC	Y		N	N	15						24						33					
7						16						25						34					
8						17						26						35					
9						18						27						36					

Enter Review, Change-insert, Validate, screen#, or Print:

5ESS SWITCH ATTD0
RECENT CHANGE 9.35
NETWORK SERVICES TRIGGER DEFINITION

(5324)

*1. TRIG NBR 3
#2. APPLICATION ASP
3. ALT GBL TITLE _____
4. SERV KEY _____
5. STP TT NBR _____
6. ADM ST CD ULK
7. AIN REL R0D1

Enter Review, Change-insert, Validate, or Print:

5ESS SWITCH ATTD0
RECENT CHANGE 1.64
ADVANCED SERVICES PLATFORM LINE PARAMETERS

(56322,56323)

1. FEATURE /ASPORIG; ()3. OE _; _____ (*)7. MLHG _____
(*)2. TN 3422135; (*)6. PTY _ (*)8. MEMB _____

ORIGINATING TRIGGERS				TERMINATING TRIGGERS		
TRIG TYPE	TRIG NBR	TRIG ACT	DFLT ROUTE	TRIG TYPE	TRIG NBR	TRIG ACT
9. OHI	_____	N	N	21. TA	_____	N
12. OHD	3	Y				
TRIG TYPE	ALLOWED	TRIG ACT				
15. FCD	N	N		25. INTRA OFFICE FWD	_____	
18. CDP	N	N		26. INTRA OFFICE FWD	_____	

GBPPR JAMCAT

Overview

This is a simple add-on adapter for any Family Radio Service (FRS), amateur, or two-way radio transceiver with a microphone/Push-to-Talk (PTT) and external earphone/speaker interface. It will turn the transceiver into a *co-channel jammer*. That is, a jammer which can only jam a single frequency upon the detection of any "activity" on that particular frequency. This type of circuit is also commonly referred to as a *Carrier Operated Relay (COR)*. This is the perfect type of jamming system to interfere with those pesky Best Buy & Wal*Mart security guards, restaurant drive-throughs, police Mobile Data Terminals (MDT), and also LoJack and cellular/pager-type "quick bursting" radio transmission systems.

The construction is quite simple. A single LM324 quad op-amp is used to detect and amplify any audio signal coming from the jamming transceiver's earphone or speaker output. That audio signal is what is used to trigger the transmitter portion of the transceiver. It will be assumed that any "noise" coming from the earphone or speaker output is the transceiver receiving a transmission, *NOT* just random squelch noise. So be sure your squelch setting is tight, or none of this will work properly and you'll be stuck jamming random signals.

The four op-amps in the LM324 are configured to amplify, rectify and detect any incoming audio signal. This amplification and diode hard-limiting eventually turns the incoming audio signal into a square wave. This new square wave is then used to toggle a relay, which in turn, controls the PTT switch on the jamming transceiver – causing it to transmit. The **TX Hold Delay Control Capacitor(s)** can be increased/decreased to adapt to the desired jammer transmit time. The default value of 440 μ F, two 220 μ F electrolytic caps in parallel, holds the transmitter on for approximately three seconds.

The noise generator, which is optional, is just a standard 6.8 Volt Zener diode with a small reverse current and a transistor buffer. The National LM386–1 audio amplifier acts as a natural band-pass filter and small-signal amplifier. The noise jamming signal is then mixed with the PTT control line / microphone input to frequency modulate the transmitter's RF output with a little bit of noise. This will help in masking the jamming transmission, making it look like random "noise" to an outside observer. With the noise generator disabled, the jamming signal is just an unmodulated Continuous Wave (CW) RF carrier.

The only real "bug" in the circuit, is the PTT control relay. Some transceivers like to be keyed with a PTT-to-ground circuit, while some require a little bit of resistance to ground. You'll have to experiment, or check the radio's manual, for the proper PTT control circuit. It is also possible, in some cases, to replace the relay with a single transistor (2N3904) or an opto-coupler (4N26).

Operation

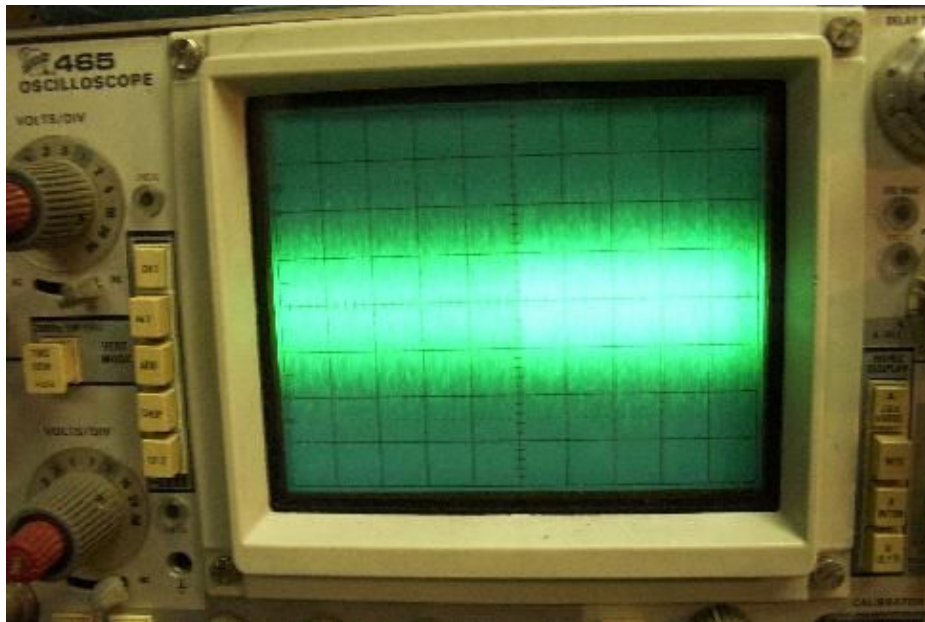
1. Tune your transceiver to the desired frequency to jam. Example: 155.010 MHz
2. Connect the transceiver to any external high-power RF power amplifier or antenna system that you may use to increase the jamming effectiveness.
3. Connect the transceiver's microphone/PTT jack to the GBPPR JAMCAT's **RADIO PTT CONTROL** input. This will usually be via a 3/32" mono jack.

4. Connect the transceiver's earphone/speaker output jack to the GBPPR JAMCAT's **RADIO AUDIO INPUT**. This will usually be via a 1/8" mono jack.
5. Adjust the squelch on the transceiver to your desired setting. "Tight" squelches are best, that is, squelches which require strong received signals before they "break". This helps in eliminating the receiving of random RF interference and preventing any unnecessary jamming transmissions, which could reveal your jamming location.
6. Dick around with the volume / squelch / noise generator settings until it all fits your liking.
7. Don't forget to properly power everything, dumbass.

Pictures



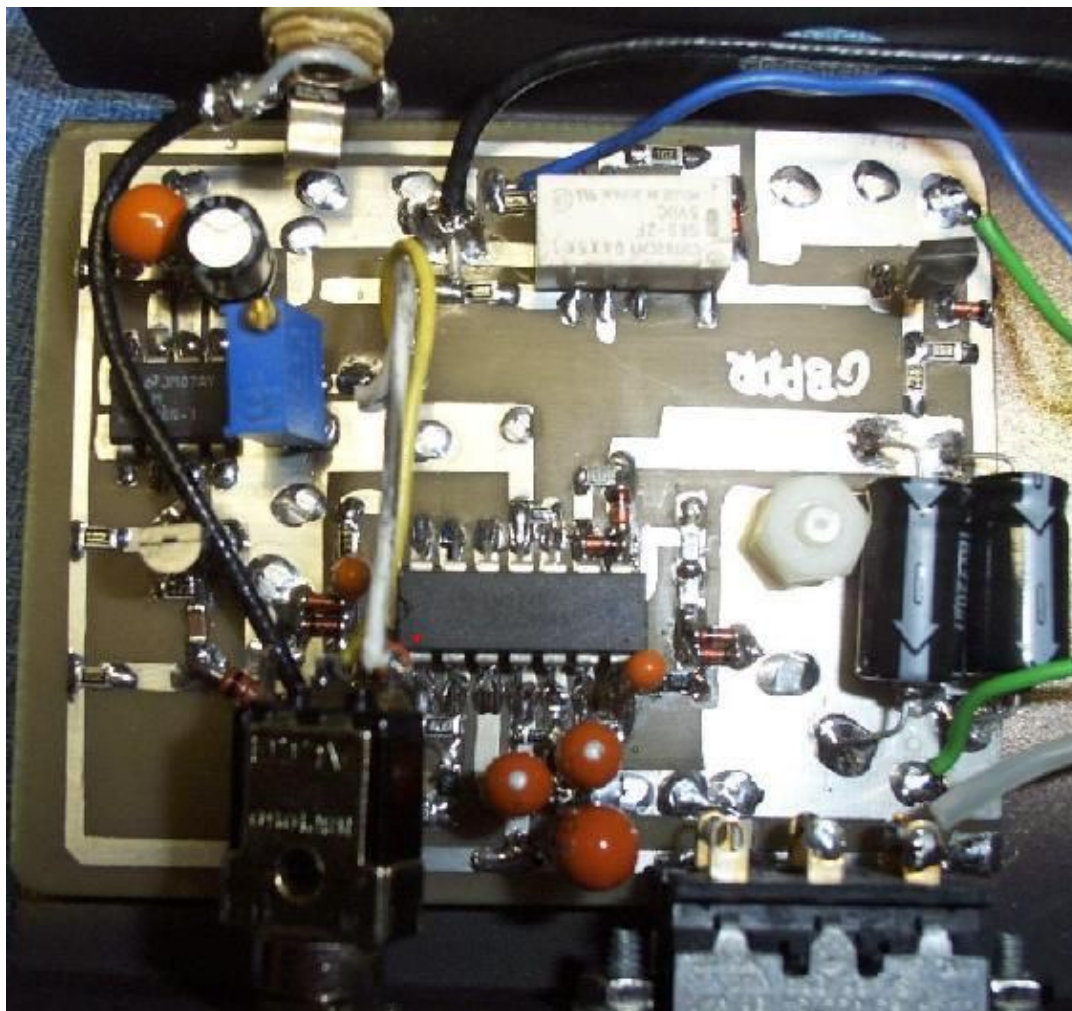
Internal view of the GBPPR JAMCAT. The **TX ENABLE LED** and **POWER LED** are panel mounted on the top left. The main power switch next to them. The **Jam Mode Select** switch is on the top right. The 1/8" jack for the **RADIO AUDIO INPUT** is on the bottom right. The 3/32" jack for the **RADIO PTT CONTROL** is on the bottom left. Small diameter coax is used for the audio input and PTT control to help reduce receiving RF interference.



Oscilloscope view of the noise generator's output signal. O-scope settings are 0.5 V/division (Y) and 10 mS/division (X). The noise signal's amplitude is adjustable via the 100 Ohm multiturn potentiometer.

The noise generator may break into oscillation or output a very low signal. If it does this, adjust the Zener bias resistor (2 k) up or down a few hundred Ohms while observing the signal (disconnected from the LM386) on an oscilloscope for the maximum noise signal. Be sure that everything is grounded properly. The LM386 will also oscillate without a good ground and poor power supply bypassing.

Any Zener diode above or equal to 6.2 Volts will work in the noise generator, as these Zener diodes have an "avalanche" region which generates a tremendous amount of noise when properly biased..



Closeup internal view. The LM324 is the large IC in the middle, pin-1 is marked with a little red dot. The noise generator section and the LM386 are to the upper left. The blue thing with the screw top is the multitrurn potentiometer. The 5 Volt, DPDT relay is the white box in the upper middle. The two large, parallel 220 μF capacitors are for the **TX Hold Delay Control Capacitor(s)**.

Tantalum capacitors (orange blobs) are used in certain areas as they tend to be physically smaller. Cheaper, electrolytic capacitors can be substituted with no problems.

Also, the relay doesn't have to be 5 Volts, or even a DPDT configuration. 9 & 12 Volt relays will also work, provided the circuit is powered from 12 Volts DC.

Current draw of this circuit, when powered from +12 VDC, is 35 mA idle, 75 mA activated.



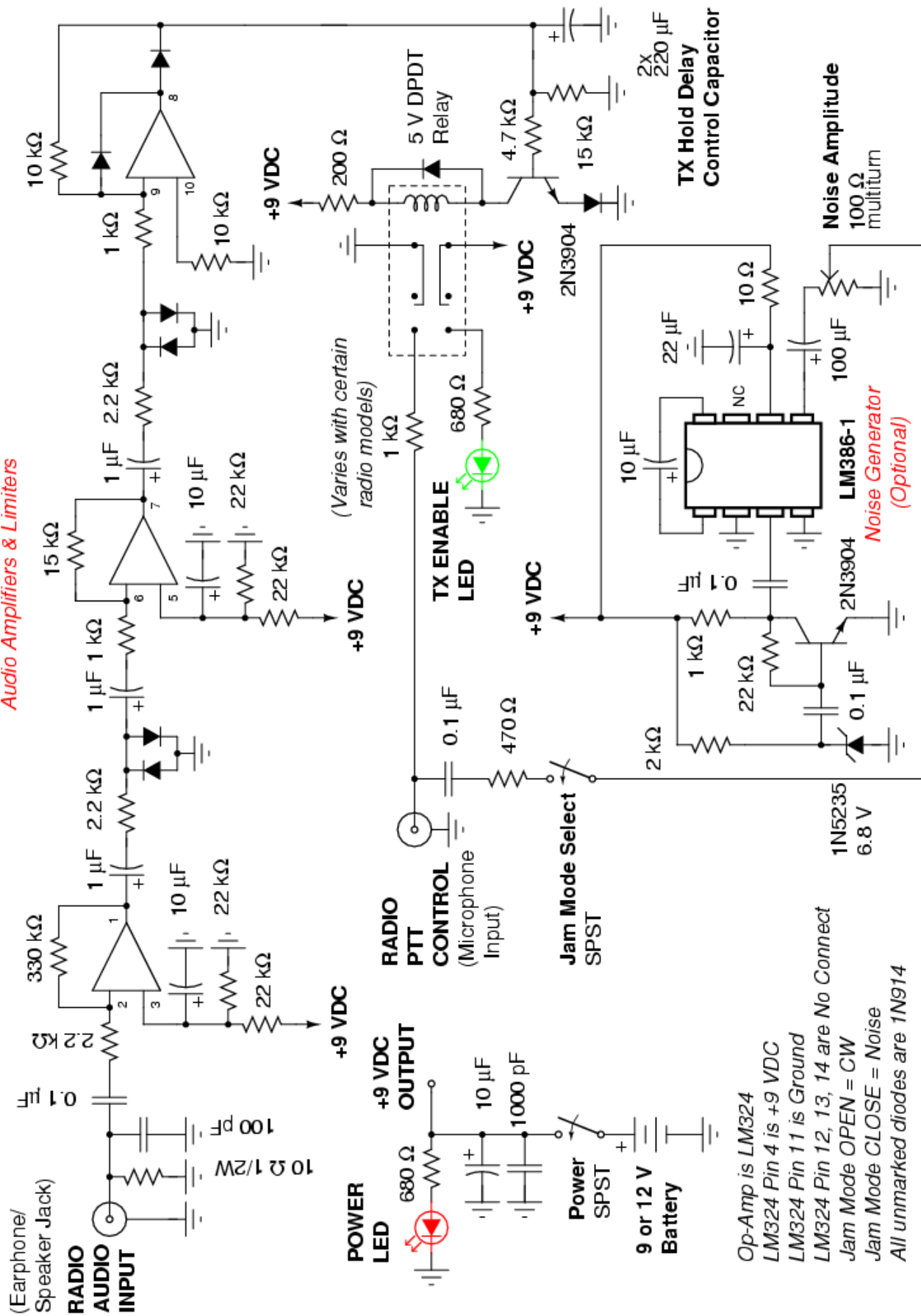
Example setup using the earphone/speaker output jack of an AOR AR8000 communications receiver feeding the GBPPR JAMCAT's **RADIO AUDIO INPUT** and the **RADIO PTT CONTROL** going into a Cobra PR-950DX FRS 2-way radio. This is useful if you want to monitor one frequency and transmit (or jam) on another. Like if you were breaking into the French embassy and needed to be alerted to any nearby police radio activity...



Example setup using the earphone/speaker output jack (red plug) on the Cobra PR-950DX FRS 2-way radio. Same basic setup as above, but now it can only transmit (or jam) on a single frequency. Any detected activity on that frequency will cause the PR-950DX to transmit for approximately three seconds.

GBPPR JAMCAT

Audio Amplifiers & Limiters



Infrared Gaming Machine Emptier

I found this company spamming on the Internet recently, [World Gaming Products](#), which supposedly sells "banned" devices which can be used to trick gaming/gambling machines into giving out more coins/tokens than they should. Their products are so gay and retarded, they were just asking to be picked on. This particular device sells for around \$100.

Excerpt from their website, http://arcadenemy.freewebsitehosting.com/ir_device.html :

The coin mechanisms and hopper payout counters on modern post-1996 machines all work by using infrared (IR) light systems – the beam sensor is cut whenever coins payout, or correct coins drop in the coin mechanisms to register credits. We all know that laser pointers can be used on some units to "hit" the hopper sensor, thus meaning coins paid out aren't counted properly, thus emptying the machines. This of course, is very conspicuous and hard to do, and is only achieved by the absolute professional criminals. Imagine there was a way to spread an "invisible" (to the naked eye) light source, easily and from the OUTSIDE of the machine, to either the coin mechanism or the hopper payout! Well, now the secret's out – this is how it's done! I have obtained a device and tried it on my OWN machine, and cannot believe the results! It started by inserting a coin into the mech., and quickly following it with the infrared generator shone onto the coin slot. The coin clocked credits up, and was THEN REJECTED! The machine obviously recognised the legitimate coin, and gave 4 credits, but when the IR light SHONE into the mech. it had made the light sensor confused and it spat the coin out! The machine took 15 minutes to play until empty! On other occasions, by moving the IR light device about outside the mech. rapidly, the machine (immediately after insertion of a coin which was NOT rejected) gave 12 –20 credits instead of 4! This clearly turned the percentage of the machine significantly in my favour. It was actually quite adrenalizing to watch, as if I'd discovered the "Holy Grail" of gaming!

The next place I tried was the hopper payout. I directed it down the glass past the 3rd reel towards the hopper sides. Upon pressing "COLLECT" to take out my cheaply-created "bank", I found that £10 resulted in 46 coins coming out! This was not consistent, sometimes it would be only double the bank, sometimes up to 6x as much. The effect was reinforced when I actually directed it up the hopper chute – light is very penetrating, and it seems only a tiny amount has to transgress the anti-rodding shields and bends in the hopper payout to be effective, and achieve the results the same as above!

This meant having to hold the IR device upright in the hopper coin exit in the payout tray, while holding "COLLECT" with the other hand. To an onlooker, it would appear that I was simply catching my legitimate bank as the coins paid out! In reality, I was holding the IR device upright to stop it being moved by the coins exiting the hopper!

This device must be frightening to arcade and machine owners if used in their places. I was shocked using it on my own Barcrest Jackpoteers machine, plus two BellFruits and two Vivids were tested "in the field"! This activity carried out on others machines would be considered very illegal, at best "theft" and at worst "fraud/obtaining credits or money by deception".

Infrared "Probe" Gaming Machine Emptying Device

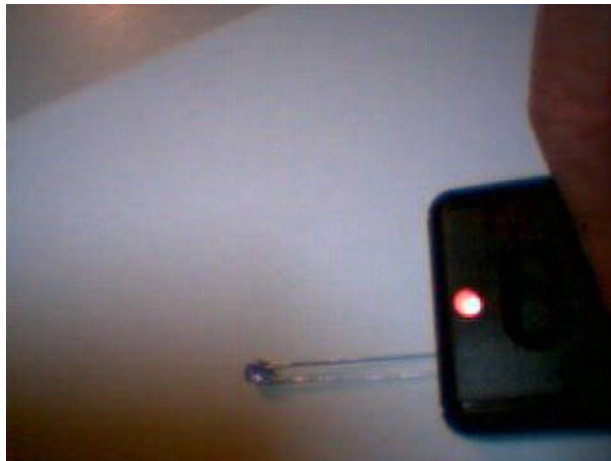
Pictures from their website, http://arcadenemy.freewebsitehosting.com/ir_device.html :



1



2



3



4

Their picture descriptions:

1. Depress the switch to power up ...
2. Aim into area required ...
3. Shorter than a finger ...
4. MULTI-FREQ. INFRARED LIGHT IS EVERYWHERE!! (Yes, it says that)

It appears to just be a standard, long-lead infrared LED mounted in a cheap plastic case with a push-button switch. The power is most likely a single, 3 Volt Lithium button-cell battery. A red LED "on" indicator is provided to make sure you get your moneys worth...

Also on their website, the "[Microwave/RF Machine Emptier](#)" is most likely an RF interference device, like which we discussed in [GBPPR 'Zine, Issue #4 \(July 2004\)](#).

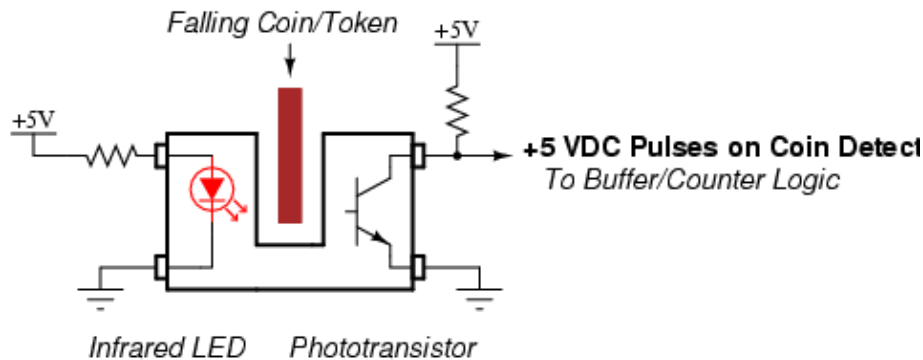
The "[Electronic Coin Hopper Emptier](#)" looks like it is just a common Piezo-electric gas grill/oven starter! Lame...

Schematics

This is how I believe the "emptying" devices work. I never have, and never will, try it out in the real world. I'm much busy working and paying taxes, plus those Indian security guards are *huge*.

Schematics

Opto-Coupler Block Diagram

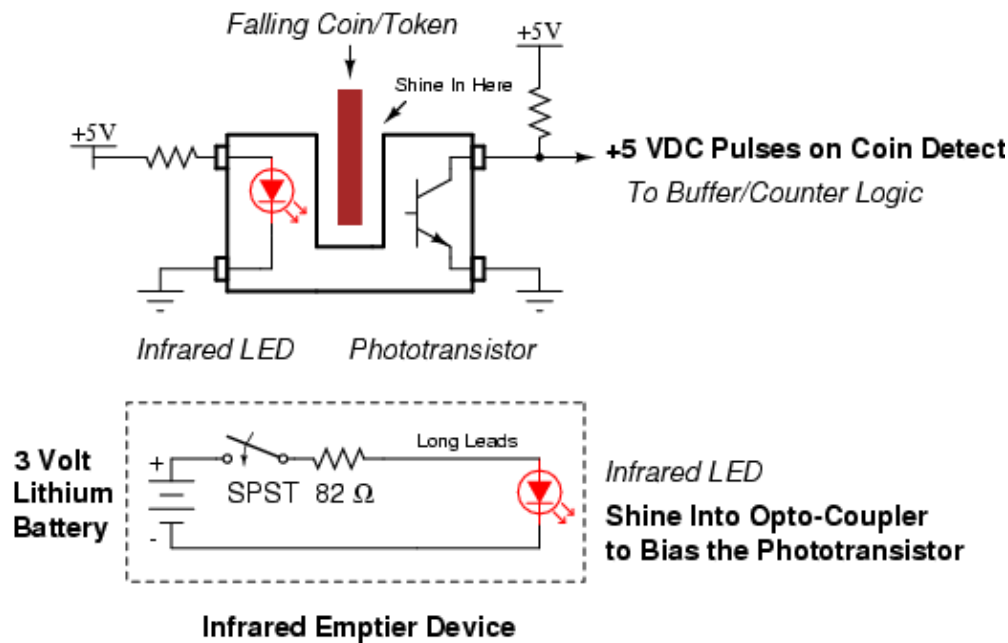


When no coin/token is passing through the output chute, the infrared LED in an opto-coupler shines across the chute, to a phototransistor, unblocked. This results in a *LOW* output from the phototransistor, as the phototransistor is biased-on (pulled to ground).

When a coin/token passes through the output chute, it is detected as a positive-going +5 VDC pulse. This is because the coin/token is preventing the opto-coupler's internal infrared LED from biasing the phototransistor. The phototransistor's output is *HIGH* (+5 VDC) via a pull-up resistor in the collector connection. This "pulse" is then sent further down the line to any signal buffering and counting logic, which determines the amount of coins/tokens actually passing through the output chute.

The "con" works by shinning an external infrared LED onto the opto-coupler's phototransistor. This way, the phototransistor is always biased-on, even as coins/tokens roll down the chute! Of course, you'd have to be a complete fuck-nut to designed any gaming machine this way, but hey, 2600 subscribers are people too...

"Fooled" Opto-Coupler Block Diagram



Here is an example setup and an application schematic of an *Infrared Emptier*. There isn't much to it. It is possible, but unlikely, that the machine's opto-coupler infrared LED is modulated at some unknown frequency (say 44 kHz) as part of a "theft prevention" or "anti-infrared emptier" scheme. The use a single LM555 timer IC pulsing an external infrared LED will also "jam" anything like that, but will still need some experimenting to tweak.

Radio Shack Part Numbers

fear the shack.

Ultracompact Plastic Enclosure	: 270-288	\$1.99
High-Output Infrared LED	: 276-143	\$1.79
SPST Mini-Momentary Switch	: 275-1549	\$2.99
82-Ohm Resistor	: 271-1107	\$0.79
Lithium Button-Cell Holder	: 270-430	\$1.99
(choose appropriate battery)		

The DMS-100 NORESTARTSWACT Utility

Description

The No Restart / Switch of Activity (NORESTARTSWACT) utility enables you to activate changes to the values of certain office parameters or to data in certain tables. The total system outage during a NORESTARTSWACT is less than 30 seconds.

The NORESTARTSWACT utility is available in offices with BCS36 or higher software. It is not available for NT40 offices.

While using this utility, if an error occurs that cannot be corrected by local maintenance personnel, contact the next level of support.

Following a change to the value of an office parameter or to the modification of data in certain tables, one of the following messages may appear:

```
WARNING:      A WARM RESTART MUST BE PERFORMED TO ACTIVATE
                CHANGES TO THE VALUE OF THIS PARAMETER.

WARNING:      A COLD RESTART MUST BE PERFORMED TO ACTIVATE
                CHANGES TO THE VALUE OF THIS PARAMETER.

WARNING:      A RELOAD RESTART MUST BE PERFORMED TO ACTIVATE
                CHANGES TO THE VALUE OF THIS PARAMETER.

WARNING:      ANY TYPE OF RESTART MUST BE PERFORMED TO ACTIVATE
                CHANGES TO THE VALUE OF THIS PARAMETER.

WARNING:      A RELOAD RESTART IS NECESSARY TO ACTIVATE
                A CHANGE OF FORMAT FOR THE AMA STREAM.
```

If one of these messages or a similar message appears, and you want to activate changes to office parameters or tables in the following three lists, the NORESTARTSWACT utility can be used instead of the restart specified in the message.

The NORESTARTSWACT utility can be used with the following office parameters that require a restart to increase or decrease their values:

* CCW_ACTIVE	* CONSOLE_SILO_CHARS
* CONSOLE_SILO_RECORDS	* CPSTACKSIZE
* CUSTOMER_GROUP_IBNGRP_OM_COUNT	* EADAS_24H_BUFFER_SIZE
* EADAS_30M_BUFFER_SIZE	* EADAS_60M_BUFFER_SIZE
* EADAS_SHORT_XFER_ALLOWED	* IBN_CFW
* MAX_ACDMIS_SESSIONS	* MAXNUCS
* MAXSTS	* OFFICETYPE
* OMHISTORYON	* PPMBUFFS

The NORESTARTSWACT utility can be used with the following office parameters that require a restart to decrease their values:

* FTRQAGENTS	* FTRQ0WAREAS	* FTRQ2WPERMS	* FTRQ32WPERMS
* FTRQ2WAREAS	* FTRQ4WAREAS	* FTRQ4WPERMS	
* FTRQ8WAREAS	* FTRQ16WAREAS	* FTRQ8WPERMS	
* FTRQ32WAREAS	* FTRQ0WPERMS	* FTRQ16WPERMS	

The NORESTARTSWACT utility can be used with the following tables:

* CLLI	* CONF3PR
* CRSFMT	* CRSMAP
* DIRPSSYS	* NWMSC
* SCGRP	* SDGRP
* TCAPTRID	* TRKGRP
* TFANIT	

Summary of the Procedure

The following table summarizes the procedure to modify a parameter or table data using NORESTARTSWACT and the approximate time, in minutes, needed to do each step. The times given for specific steps are elapsed times and not actual run times. Ranges are listed to accommodate different switch configurations, sizes, and problems that may be encountered during the execution of the step.

Step	Description	Approximate Time
1	Verify availability of the NORESTARTSWACT utility on the switch	(unspecified)
2	Make changes to parameter values or table data	(unspecified)
3	Drop sync on the Computer Module (CM)	2 to 3
4	Restart on the mate of the active switch to activate changes	3 to 5
5	Perform the LIMITED_PRESWACT procedure	15 to 60
6	Perform the NORESTARTSWACT procedure	(unspecified)
7	Perform the POSTSWACT procedure	15 to 60
8	Sync the CM	3 to 5
	Total time range in minutes	38 to 133

Procedure

Use this procedure to perform a NORESTARTSWACT.

Using the NORESTARTSWACT Utility

Step	Action
------	--------

- | | |
|---|---|
| 1 | Ensure that you are at the CI level of the MAP display by pressing the <Enter> key two times. |
|---|---|

Example of a MAP response:

CI:

-
- | | |
|---|---|
| 2 | Verify the NORESTARTSWACT availability by typing: |
|---|---|

>BCSUPDATE;SWACTCI;QUERYSWACT

and press the <Enter> key.

Example of a MAP response:

NORESTARTSWACT is recommended for initiating a CC Warm SWACT. Further checking will be done when SWACT is invoked.

If the NORESTARTSWACT is: Do

Supported	Step 3
Unsupported	Step 31

-
- | | |
|---|---|
| 3 | Make a parameter value or table change. |
|---|---|

Example of a MAP response:

WARNING: A RESTART MUST BE PERFORMED TO ACTIVATE THE CHANGE MADE TO THIS PARAMETER.

Note: Any change that is made while the switch is "INSYNC" remains in effect on the inactive side even after the drop sync and restart are complete. It is not necessary to login to the mate Central Processing Unit (CPU) to verify the change.

-
- | | |
|---|---|
| 4 | Access the CM level of the MAP display by typing: |
|---|---|

>MAPCI;MTC;CM

and press the <Enter> key.

-continued-

Using the NORESTARTSWACT Utility (continued)

Step	Action
------	--------

5 Determine if the inactive CPU is jammed.

Note: The word "yes" under the Jam header indicates that the CPU is jammed. The area appears blank if the CPU is not jammed.

If the inactive CPU is:	Do
Jammed	Step 8
Not Jammed	Step 6

At the CM reset terminal for the inactive CPU

6 Jam the inactive CPU by typing:

>\JAM

and press the <Enter> key.

RTIF response:

Please confirm (YES/NO):

7 Confirm the command by typing:

>YES

and press the <Enter> key.

RTIF response:

JAM DONE

At the MAP

8 Determine if the CM is in sync.

Note: A dot or "EccOn" displayed under the Sync header indicates that the CM is in sync. The word "no" indicates that the CM is not in sync.

If the CM is:	Do
In Sync	Step 9
Not in Sync	Step 14

-continued-

Using the NORESTARTSWACT Utility (continued)

Step	Action
------	--------

9 Drop synchronization by typing:

>DPSYNC

and press the <Enter> key.

If the response is:

Do

About to drop sync with CPU _n active, the inactive CPU is jammed. Do you want to continue? Please confirm ("YES", "Y", "NO", "N"):	Step 12
---	---------

Drop synchronization failed.	Step 33
------------------------------	---------

Aborted. Active CPU _n has a faulty processor clock.	Step 10
--	---------

10 The DPSYNC command is disallowed because the active clock on the CPU is faulty. Refer to the procedure *Clearing a CM CLK Major Alarm in DMS SuperNode Alarm and Performance Monitoring Procedures*, 297-5001-543. When you have completed the procedure, return to this point.

11 Go to Step 6.

12 Confirm the DPSYNC command by typing:

>YES

and press the <Enter> key.

At the CM reset terminal for the inactive CPU

13 Wait until "A1" flashes on the reset terminal for the inactive CPU.

If A1:

Do

Flashes	Step 14
---------	---------

Does not flash after approximately 5 min.	Step 33
---	---------

-continued-

Using the NORESTARTSWACT Utility (continued)

Step	Action
------	--------

At the CM reset terminal for the inactive CPU

14 Perform the required restart procedure by typing:

>\RESTART

and press the <Enter> key.

RTIF response:

Please confirm (YES/NO):

Caution! Loss of Service! Ensure that you perform the restart on the inactive CPU. The reset terminal for the inactive CPU is identified by the word "Inactive" on the top banner of its display.

15 Confirm the restart command by typing:

>YES

and press the <Enter> key.

At the MAP

16 Perform the LIMITED_PRESWACT procedure by typing:

>BCSUPDATE;LIMITED_PRESWACT

and press the <Enter> key.

Example of a MAP response:

LIMITED_PRESWACT should not be used for BCSUPGRADE
SWACTs. Do you wish to confirm? ("YES", "Y", "NO", "N"):

The LIMITED_PRESWACT command runs a series of steps that are required to prepare the switch for the NORESTARTSWACT. All of these steps must be completed successfully before the NORESTARTSWACT can be performed. If the LIMITED_PRESWACT command stops with an error message, the error must be corrected and the LIMITED_PRESWACT command must be entered again to complete the remaining steps. If necessary, the next level of support should be contacted to complete this procedure.

17 Confirm the LIMITED_PRESWACT command by typing:

>YES

and press the <Enter> key.

-continued-

Using the NORESTARTSWACT Utility (continued)

Step Action

18

If the LIMITED_PRESWACT: Do

Was Successful Step 19

Failed Step 33

19

Refer to the *DMS-100 Family Software Operations One Night Process and Hybrid Software Delivery Procedures*, 297-1001-303, section "PRESWACT DIRP and Billing" for the procedure to handle secondary billing devices over the NORESTARTSWACT. When you have completed this procedure, return to this point.

20

Verify that all essential services or high profile customers (police, hospital, emergency bureaus, radio stations) are not in emergency call processing mode by contacting the appropriate customer.

21

Disable any periodic testing.

22

Ensure no further activity is performed on the Distributed Processing Peripheral (DPP), including DPP polling or disk backup. Inform the downstream processing center.

23

Dump the Switch Performance Monitoring System (SPMS) register to a printer or other device according to operating company standards.

24

Disconnect any ISDN DTA monitor prior to the SWACT.

At the CM reset terminal for the inactive CPU

25

Release the jam on the inactive CPU by typing:

>\RELEASE JAM

and press the <Enter> key.

RTIF response:

JAM RELEASE DONE

At the MAP

26

Perform the SWACT by typing:

>BCSUPDATE;SWACTCI;NORESTARTSWACT

and press the <Enter> key.

Note: After the CPUs switch activity, you are logged off the MAP terminal. A dollar sign (\$) appears and the cursor moves one space to the right.

Go to Step 27.

-continued-

Using the NORESTARTSWACT Utility (continued)

Step	Action
------	--------

27 Login to the MAP terminal by typing:

```
><BREAK>LOGIN
<username>
<password>
```

28 Perform the POSTSWACT procedure by typing:

```
>BCSUPDATE;POSTSWACT
```

and press the <Enter> key.

29 Refer to the *DMS-100 Family Software Operations One Night Process and Hybrid Software Delivery Procedures*, 297-1001-303, section "Recover Billing" for the procedure to recover the secondary billing devices after the NORESTARTSWACT. When you have completed this procedure, return to this point.

30 Synchronize the CM by typing:

```
>MAPCI;MTC;CM;SYNC
```

and press the <Enter> key.

Example of a MAP response:

```
Maintenance action submitted.
Synchronization successful.
```

If the SYNC command:	Do
Was Successful	Step 34
Failed	Step 33

31 Perform the necessary restart (cold, warm, or reload) to activate the table or parameter change. When you have completed the procedure, return to this point.

32 Go to Step 34.

33 For further assistance, contact the personnel responsible for the next level of support.

34 You have completed this procedure.

-End-

Bonus

GREEN BAY RIDGE 1ESS 494

OFFICE 414494NS

MANAGER FOXVAL_MGR

DISTRICT EV_DIRECTOR

DIVISION SWIT_DIV

GENMGR SWIT_GMG

DEPT SWIT_SEG

***** E6421A REPORT

1 ESS

NETWORK SWITCHING PERFORMANCE

AMERITECH

PERIOD 93/11

OTC INTEGRIS

***** AS OF 12/01/93

PERFORMANCE INDICATORS		A FAILURES	B BASE DATA	C PERF.	D THRES-HOLD	E SOFT SPOT	

--MACHINE ACCESS--							
1	CDR % OVFL			0	1		0
2	BLKD DIAL TONE			0	8		0
3	RADR			.01	.20		0
--MACHINE SWITCHING--							
4	CUTOFF CALL FAIL.	6	1,569.88	.00	.15		0
5	F-SCAN FAILURES	179	1,569.88	.11	.20		0
7	TRUNK OUTAGE				95.00		
8	HRDWR LOST CALLS	2,567	1,569.88	1.64	22.00		0
9	LOAD BALANCE			100.00	90.00		0
10	MATCH LOSS			.09	1.80		0
11	MAINT INTERRUPTS	60	1,569.88	.04	.40		0
12	E.A. PLANNED			0			
13	E.A. UNPLANNED			0	0		0
14	EQUIPMENT OUTAGE	21.90	383	.06	.60		0
15	TRK-TRK MEM OVFL			.00	.01		0
--BILLING--							
16	AMA REGISTER OVFL			.00	.01		0
17	COIN CONTRL FAILS	3,939	73.67	53.47	10.00		1
18	CUST REPTS CODE 8	5	357.47	.01	.10		0
19			TOTAL INDICATORS		TOTAL SOFT SPOTS		1
		F	G	H	I	J	K
MEASURED COMPONENTS		MAX. PTS	FAIL-URES	BASE DATA	PERF.	COMP. INDEX	INDEX POINTS BAND

--MACHINE ACCESS--							
20	D.T. SPEED	15	.01		34.98	100.00	15.00 H
21	RECVR OVFL	5	19	429,144	.00	100.00	5.00 H
22	RSTR VER FAILS	5	280	1,569.88	.18	99.00	4.95 H
--MACHINE SWITCHING--							
23	TRNS T-O *OTHER*		1,184	178.00	6.65		
23	TRNS T-O *TOTAL*	10	1,603	658.77	2.43	98.50	9.85 H
24	OFC OVFL	15	1,098	1,157,499	.09	99.50	14.92 H
25	FCG+SUPV FAILS	15	589	1,569.88	.38	99.50	14.92 H
26	RCVR T-O *OTHER*		2	89.00	.02		
26	RCVR T-O *TOTAL*	10	316	556.74	.57	100.00	10.00 H
27	SWITCH OUTAGE	5	0				5.00 H
--BILLING--							
28	EQPT FAILS		0				
29	PART & CANC FAILS		5,826				
30	LOST BILLING	10	5,826	74.66	78.03	90.00	9.00 L
--CUSTOMER REPORTS--							
31	EQPT CODE 5	10	8	357.47	.02	99.50	9.95 H
32	TOTAL POINTS						98.59
33	MAX. AVAILABLE POINTS						100.00
34	TOTAL INDEX						98.59 H

OFFICE WEIGHT = 2

End of Issue #9



Any Questions?

Editorial and Rants



From <http://www.cubamcud.org/English/Articles/Article%2016.htm>

Che's Motorcycle Follies

By Agustin Blazquez with the collaboration of Jaums Sutton.

Jaime Costas recently said Che "didn't know how to ride a motorcycle!" And Jaime would know because he participated in Castro's 1953 ill-fated assault on the Moncada Barracks and was aboard the Granma expedition with Che Guevara, Castro and his brother Raul to infiltrate into Cuba to fight Batista.

Costas, now in his seventies, made that comment on September 29, 2004, in New York City during the presentation of his book of his memoirs answering a question from the audience about the movie "The Motorcycle Diaries" (Robert Redford, its executive producer, is an unapologetic Castro collaborator). Costas knew Castro, Raul and Che personally for many years.

He added that he "unequivocally" knows that detail because on various occasions he went motorcycling around Havana with Castro and his comrades and "Che never went along with them even when asked to accompany them. All he did was sheepishly wave 'good-bye', because he didn't know how to ride a motorcycle!"

A person present at this presentation commented, "Ah, the mythmaking of the left that ceaselessly lionizes Che! Pretty soon, they'll have him coming down on a cloud!"

Another person acquainted with the history of the Cuban revolution said to me, "It is good to know that but please inform the Harley-Davidson Corporation before they put him [Che] in a commercial."

"I might add that Dr. Guevara, like all his fellow comic-book characters, is essentially mythical, or at least fictional."

Although he was there in person, Guevara was so disconnected from the actual facts of the so-called Cuban Revolution as to be, in a sense, quite pathetic. He interpreted a Cuban soap opera as if it had been the Iliad. He projected Mao's epic Long March onto the battle for the provincial capital of Santa Clara, Cuba, in effect a cakewalk made possible by the money with which Julio Lobo and other fellow Cuban magnates bought out Batista's miserable army.

So, when he tried to replicate that in Bolivia and the Bolivian army fought back – incidentally, in far tougher terrain than Cuba's – Guevara's operation rapidly unraveled and he ended up like a side of beef on the counter of a Bolivian kitchen, a fate none other of his fellow extreme leftie loonies has deemed fit to emulate.

The problem with Guevara is that he is not a positive, life-enhancing myth, but a completely counterproductive one which feeds the worst and most destructive impulses in the Latin American mind – what I call 'political sophomorphism' combined with an adolescent's grasp of the world and a nihilistic yearning for martyrdom (and even some good old fashioned Argentine necrophilia). Remember that Guevara's canonization began with that infamous shot of him dead, looking like Christ by Mantegna.

Guevara was catastrophic for Cuba, and would have been catastrophic for Latin America but for his early transit.

Guevara is actually laughable, and the sadness of it all is that no one has done to him what Michael Moore did to Bush, that is, a good spoof.

We treat him like a legend, a Promethean, almost tragic figure, instead of what he really was: a no-good physician, a Mickey Mouse with a beret, an Argentine spoiled youngster that almost by accident walked into – we can no longer say he motorcycled his way into – a political swindle aspiring to be called a revolution.

Treat him for what he was—he even looked a bit like— the Cuban Revolution's own Cantinflas.

This comparison with Cantinflas, the late famous Mexican comic movie star, evoked my memories of when I met Che Guevara in 1963 when I was in the cast of a movie being filmed in Cuba's Sierra Maestra Mountains.

One afternoon Che came to pay us a visit at the barracks we were staying. I was within a foot from him. And I was utterly disappointed by that unremarkable little man (who was very photogenic) and most women in Cuba at that time were fawning over him as some sort of movie star. Actually, his raggedy mustache was similar to the one sported by Cantinflas. I found him so uninteresting that in the diary I was keeping of those days I dedicated only one sentence to him.

The Washington Times in the Business section on September 25, 2004, pg. C10, published an article about Che paraphernalia being offered for sale. In addition of being offensive to Cuban Americans who knew who Che really was, the article promoted and generated interest in those merchandises among the less informed, insensitive and ignorant Americans. Meanwhile, Hollywood is putting together yet another movie about Che and Benicio del Toro, may be playing him.

I made the comment to an American friend as to how the left in America keeps offending Cuban Americans with impunity. I said, "Can you imagine what would happen if T-shirts, articles, books and movies idolizing Hitler were produced and promoted in the U.S.?"

He replied, "Well of course the neo-nazis have a lot of Hitler stuff you can buy on eBay."

I said, "The difference between the neo-nazis on eBay and the cult of the criminal Che, is that the later is in the main stream, in the open, from schools to universities and promoted by the media" – even by The Washington Times!

While, admittedly not as romantic as the myth, the reality about Che is that he was unwanted by Castro and did not have any place to go. Castro sacrificed the inept Che for his own personal and political benefit. He eliminated Che from Cuba, enabling the creation of a false admirable myth that he must continuously, actively support in order to maintain and as a result make a lot of good propaganda and money for his regime. Castro turned a liability into an asset.

Che has a long and documented criminal history. It was Che, in the Sierra Maestra Mountains of Cuba, years before Castro's 1959 triumph, who revealed his fascination with cruelty by asking to be the executioner who kept the troops in line.

At the onset of the revolution on January 1, 1959, Castro appointed Che in charge of La Cabana fortress in Havana. There, execution squads flourished under Che's command, assassinating, in mass, those perceived as enemies of the revolution. Che ordered that women and children visiting his prisoners be paraded in front of the execution wall, gruesomely stained with blood and brain parts. All of this was well publicized in Cuba in order to spread fear throughout the population. The surviving ex-prisoners of the infamous La Cabana fortress remember Che as a "mass murderer."

The myths that surround Che are much more interesting than the man; problem is, they simply do not resemble reality.

In February 1959, Che began training foreign guerrillas and terrorists in Cuba. His first guerrilla attack (planned with the brothers Fidel and Raul Castro) was to "liberate" Panama in April 1959. But by May 1, he suffered a humiliating defeat by Panama's National Guard. On June 14, 1959, Fidel Castro sent Che's guerrillas to the neighboring island of the Dominican Republic to fight against dictator Trujillo. But Che's guerrillas again failed miserably.

After this second fiasco in June 1959, Castro sent Che to tour third world countries. After his return, Castro put him in charge of the National Institute of Agrarian Reform (INRA), Industries Division and later, as President of the National Bank (where he signed the currency "Che"). He proved himself inept for those assignments as well and Castro reassigned him again.

On October 29, 1959, Castro sent Che to communist countries to establish commercial ties, negotiating the initially secret sale of sugar to the Soviet Union. He made trade agreements with Czechoslovakia, China and North Korea, announcing on September 10, 1960, that Cuba "had received arms from Czechoslovakia."

In 1965, Castro sent Che as far away as possible. This time to "liberate" Africa. After Che's failure in Africa, he was summoned to Havana for two days of secret conversations with Castro. He was then sent back to Africa with 200 Cuban soldiers to help a Congolese leftist group. After he failed there, in late 1965, he secretly returned to Cuba, leaving his soldiers behind. Che was kept hidden all through 1966.

Obviously, Castro needed to carefully get rid of him, but all of his attempts to get Che involved in international wars of "liberation" and get him killed and converted into a martyr had failed.

As secretly as he returned to Cuba, Che left again in September 1966, sent by Castro on another international mission. He went to Prague and then on to Paraguay, where disguised as a businessman, he traveled by plane to Bolivia.

Along with 17 Cubans (clandestinely smuggled into Bolivia), he began organizing a guerrilla movement. But he was able to recruit only 15 Bolivians. By the end of March 1967, Castro stopped supplying Che's guerrillas. The last contact with Havana was in July 1967.

Denounced by the peasants and Indians in the region (who never supported his intrusion), Che and his guerrillas were finally apprehended by the Bolivian army on October 7, 1967. As we all know Che was executed and Castro at last had the martyr he was longing for. His amputated hand is proudly displayed in the Museum of the Revolution in Havana.

Out of Castro's way, the cruel and inept Che could be heralded now as a big hero. Finally, Castro was free to create an international legendary myth. Che's image flooded Cuba and posters began to appear in the domain of the academic left: colleges and universities of the U.S. and the free world in order to attract the romantics and uninformed. As with much communist misinformation, it worked! We still have fools displaying posters and wearing Che's junk offending his victims.

For heaven sake, there is more hatred from the left in America directed against Richard Nixon, Ronald Reagan and George W. Bush than against a real bad guy and a mass murderer: Che Guevara.

I have not seen in our learning centers an urge for romantic and misleading presentations about criminals like Charles Manson, David "Son of Sam" Berkowitz, John Wayne Gacy, Ted Bundy, Jeffrey Dahmer, etc. Why Che?

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