5 ETS

Western Electric

Now...Translations without cross-connections and Modernized AMA recording

using Western Electric's new No. 5 Electronic Translation System for No. 5 crossbar.

UNIQUENESS:

Stored program control of line, trunk, and routing translations

TECHNOLOGY:

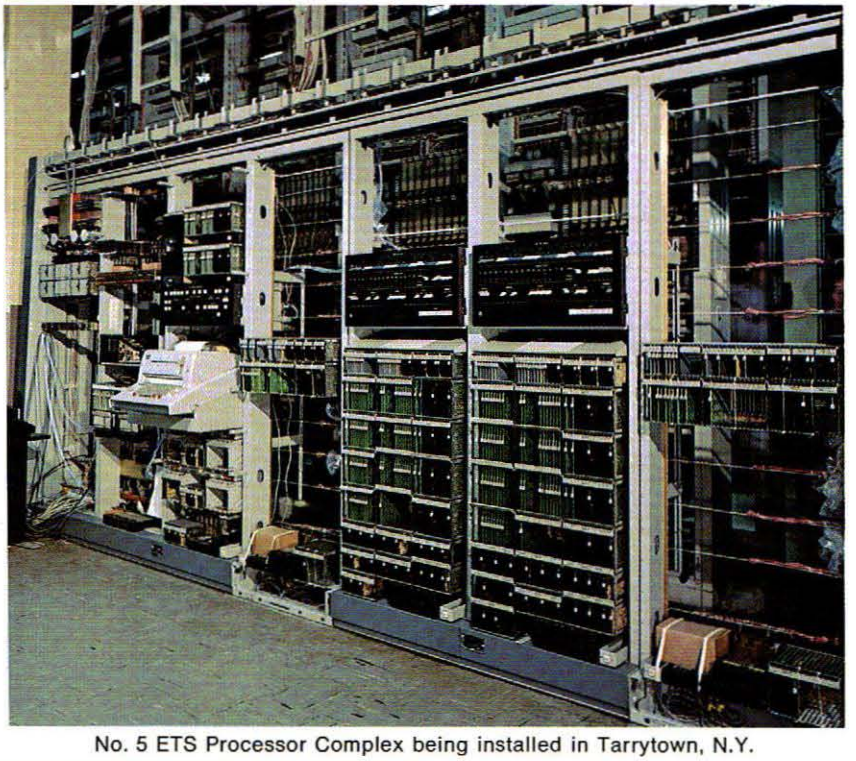
Integrated circuit processor and memory

ADVANTAGES:

Capital savings • Space reduction
Labor savings • Revenue increase

CAPACITY:

Full size marker group



No. 5 ETS Processor Complex being installed in Tarrytown, N.Y.

No. 5 Electronic Translation System (No. 5 ETS) gives you the following benefits:

Capital savings resulting from decreased equipment requirements, recovered floor space, and delayed building additions.

Frames removed after No. 5 ETS is cut into service:

- Number Group
- Marker Screening & Routing
- Foreign Area Translator
- Electromechanical AMA

Labor savings resulting from decreased electro-mechanical equipment maintenance, administration, & cross-connection effort.

Cross-connection work eliminated:

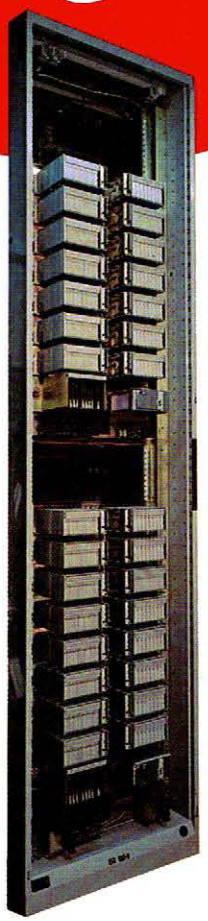
- Number group
- Marker screening & routing
- Foreign area translator
- Line class
- AMA translator
- CAMA billing indexer

Revenue increase due to a more precise definition of the call duration. Billing data on both LAMA & CAMA is data linked to a No. 1 AMA Recording Center.

Elimination of expenses associated with paper tape recording and message registers lowers billing costs. And, No. 5 ETS prepares you for Usage Sensitive Pricing by providing AMA recording for all trunks.

5 ETS

A processor complex and distributor and scan circuits are bridged onto your No. 5 crossbar circuits. Call details are received from the markers, trunks, and lines via scan leads and information is returned to the markers via distribution leads. The scanning of trunks provides No. 5 ETS with supervisory status for routing and billing.



Distribute and Scan (DAS) Frame

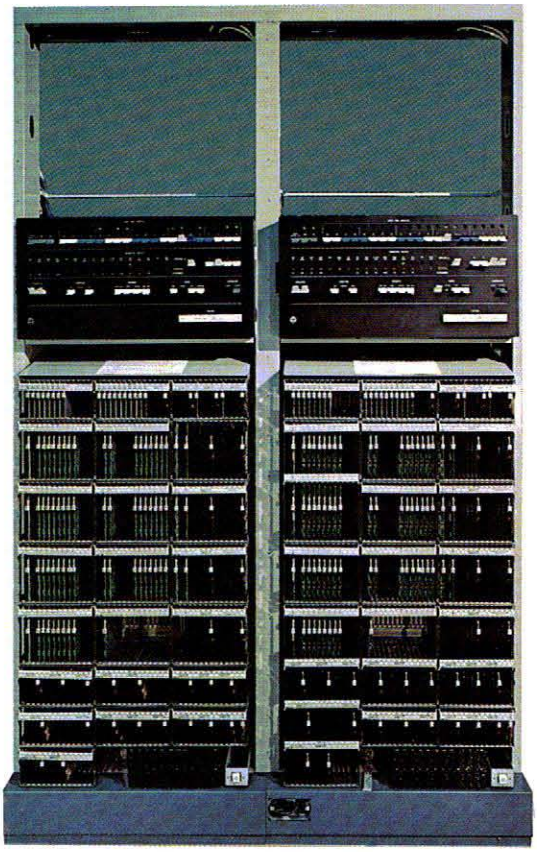
No. 5 ETS uses the proven, highly reliable, Auxiliary 3A Processor to provide the ultimate flexibility of stored program control. Office flexibility includes:

Software trunk selection that eliminates expensive sender group rearrangements (on growth jobs).

Flexible line class that eliminates movement of customers on line link frames as their class of service is changed.

Built-in diagnostics of equipment that semi-automates certain types of trouble shooting.

Generic Program updates that makes addition of certain switching and testing features easy to install and less expensive.



Auxiliary 3A Processor

Forget about extensive and expensive cross-connect changes. With No. 5 ETS they are only in memory.

TECHNICAL DATA:

Floor space requirements—
100 square feet for Processor Complex
9 square feet for each DAS Frame (max. 6)

Power requirements—
—48V DC from existing battery plant
50 amps for Processor Complex
5 amps for each DAS group (max. 12)

Operating environment—
Standard No. 5 crossbar central office requirements

References: GL 76-06-111

PRODUCT INFORMATION ORGANIZATION

For additional information, technical assistance, and product availability, contact the Service Consultant, Switching Products, serving your state or region.

No. 5 ETS

The No. 5 ETS consists basically of a processor complex, and associated scanners and distributors. It bridges onto the No. 5 Crossbar System, receiving call details from markers, trunks, and lines via scan leads and returns information to the markers via distribute leads. The scanning of trunks provides No. 5 ETS with supervisory status for routing and billing. Trunk scanning is done on outgoing and intraoffice trunks. Line scanning is done on lines in multiline hunt groups (2 Line Hunt Groups are not scanned) to provide busy/idle status for hunting, and on INWATS lines for AMA purposes.

With No. 5 ETS all outgoing and intraoffice trunks which receive answer supervision are equipped for AMA recording. A comparison of AMA functions with and without No. 5 ETS is shown in Figure 1. Line class-of-service, route and terminating translation functions with No. 5 ETS are shown in Figures 2, 3 and 4 respectively.

Floor space requirements are approximately 100 square feet for the processor complex, plus 9 square feet for each Distribute and Scan (DAS) frame. The processor complex consists of seven 26-inch wide, 7-foot ESS type bays of equipment which must be collocated (see attached floor plan); the recommended location is near the No. 5 Crossbar maintenance center. The DAS equipment is provided in 11-foot 6-inch frames (min. 1, max. 6) which can be located anywhere in regular No. 5 Crossbar lineups, but must be located within 100 cable feet of the processor. The No. 5 ETS provides for a maximum of 12 DAS groups mounted in six frames, two groups per DAS frame; normally one DAS group is provided per completing marker. A small amount of relay rack mounted miscellaneous interface equipment is also required. A significant amount of existing equipment is retired and not required for growth additions. (See Figure 5.)

Power for the No. 5 ETS is supplied by the -48 volt office battery. The processor complex requires 50 amps and each DAS group (max. 12 groups) requires 5 amps. ETS operates within normal voltage limits of 50 volts maximum and 48 volts minimum (emergency 50 volts max, 45 volts min.) specified for No. 5 crossbar offices.

Power and grounding methods for No. 5 ETS will be similar to those employed for converter isolated electronic systems powered from DC plants connected to an integrated ground plane.

The No. 5 ETS hardware has been designed to operate in the environment outlined for solid state circuits as described in BSP 760-555-151.

NO. 5 CROSSBAR

AMA

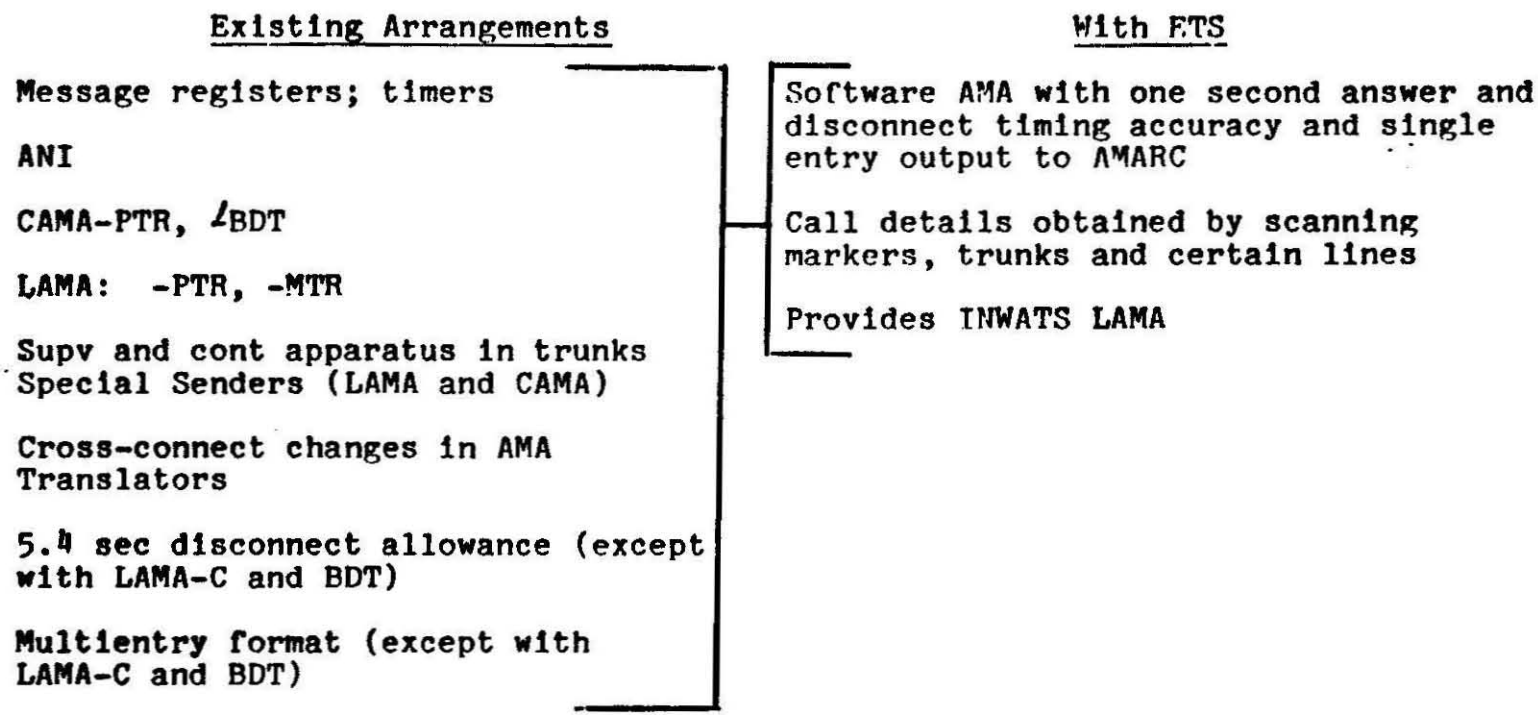


Figure 1

NO. 5 CROSSBAR

LINE CLASS-OF-SERVICE TRANSLATION

Existing Arrangements	With ETS
1 Class per vertical file of 10 lines	Class per line (in software)
Depending on office vintage:	
30 Classes 60 Classes 100 classes 20 Classes w/20 rate treatments 100 Classes w/20 rate treatments	100 Classes and 20 rate treatments (in software)
Rate treatments restricted to same meaning for all classes	No restriction on use of rate treatments, thus 20 RTs x 100 classes or 2000 classes of service
Changes made with x-connections	Changes typed into memory

Figure 2

NO. 5 CROSSBAR

ROUTE TRANSLATION

Existing Arrangements	With ETS (all in software)
Max 400 Route relays/marker (old) Max 500 Route relays/marker (new) Max 400 or 500 FC relays/marker	Equivalent 1000 route relays with route advance.
60, 120 or 180 Screening relays/marker (old) 240 Screening relays/marker (new)	Equivalent 1000 screening relays
6-Digit Translation:	
Max 12 Foreign areas (old) Max 36 Foreign areas (new) Max 200 routes	Max 60 Foreign Areas No restriction on number of routes.

TRUNK SELECTION

Max 20 trunks/group/TLF	Trunks/group/TLF limited only by capacity of TLF. (No need to allot trunk groups.)

Figure 3

NO. 5 CROSSBAR

TERMINATING TRANSLATION

Existing Arrangements	With ETS
Translations done in number group equipment - 1000 No.'s/NG Fm.	All translation, hunting, and line route functions done in software.
Changes made by cross-connects	
Multiline hunting in groups of 10 by NG and Marker	
2-line hunt done in WS markers (TBS feature)	
Line route relays required for certain types of lines, e.g., LLP	
Single hunting sequence	Three hunting sequences: a) From dialed number to end of list. b) Circular hunt beginning with dialed number. c) Random hunt.

Figure 4

NO. 5 CROSSBAR

FRAMES NOT REQUIRED WITH ETS

Marker Frames	
SD-25550-01	J28754C, D, E, F, G, H, K
SD-26002-01	J28760C, D, E, F, G, J, K
Number Group	J27853A, E, G, H, S
Number Group Conn	J28154C, D, J28151G
Number G. Conn Cont	J28154F
Foreign Area Transl	J28757B
Foreign AT Conn	J28757A, C
Message Register	J27056A
Message Timing	J27056H
Line Class of Service	J27458M
AMA Frames	
Translator	J22471A, B, J22460A
Transverter	J22459A, C, D, P, T
CII	J22151K,
Recorder	J22462A, E, L, J94737A
Perforator	ED-26301
Trunk Control	J94739A, D
CAMA Bill Ind.	J22469A, B
Line Obs & No. Match	J23652A
*Master Timing	J22451C, F

Figure 5

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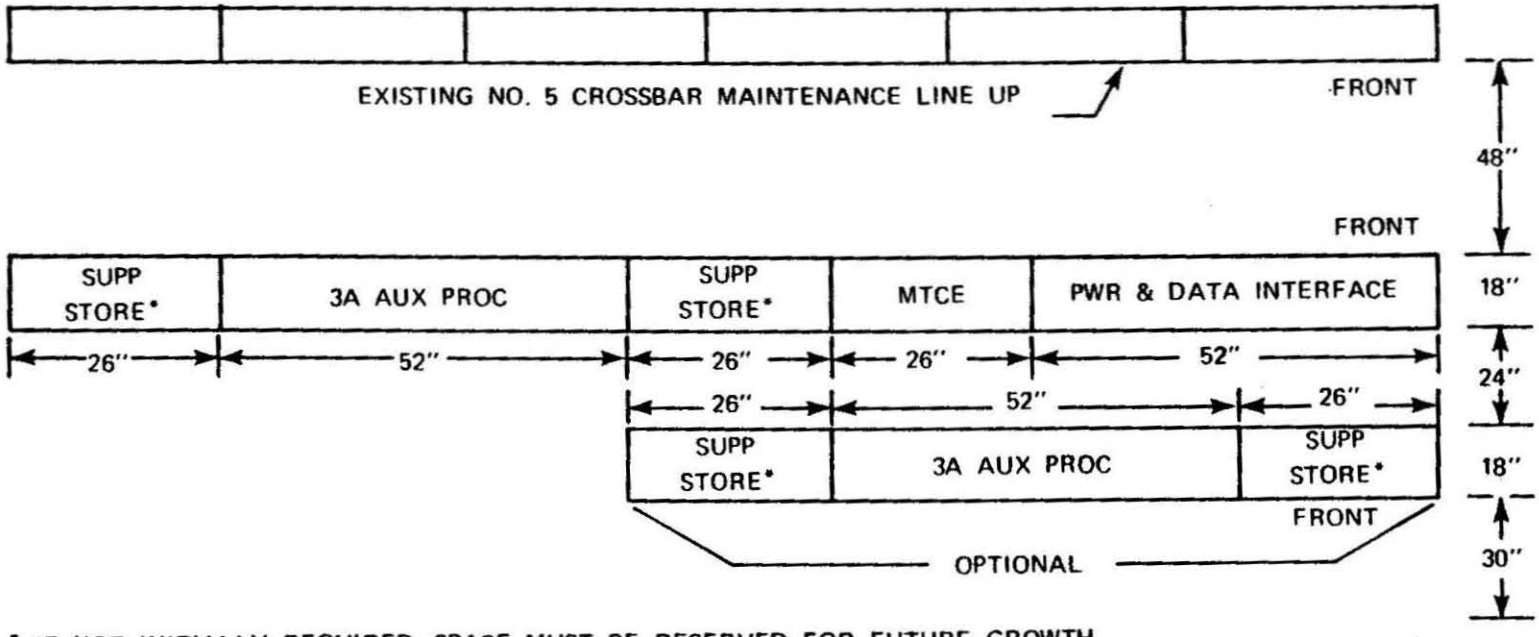
*If removed must be replaced with calander and clock circuit (J61564DB, DC)

NO. 5 CROSSBAR ETS
FLOOR PLAN



* IF NOT INITIALLY REQUIRED, SPACE MUST BE RESERVED FOR FUTURE GROWTH

AUXILIARY 3A PROCESSOR SYSTEM