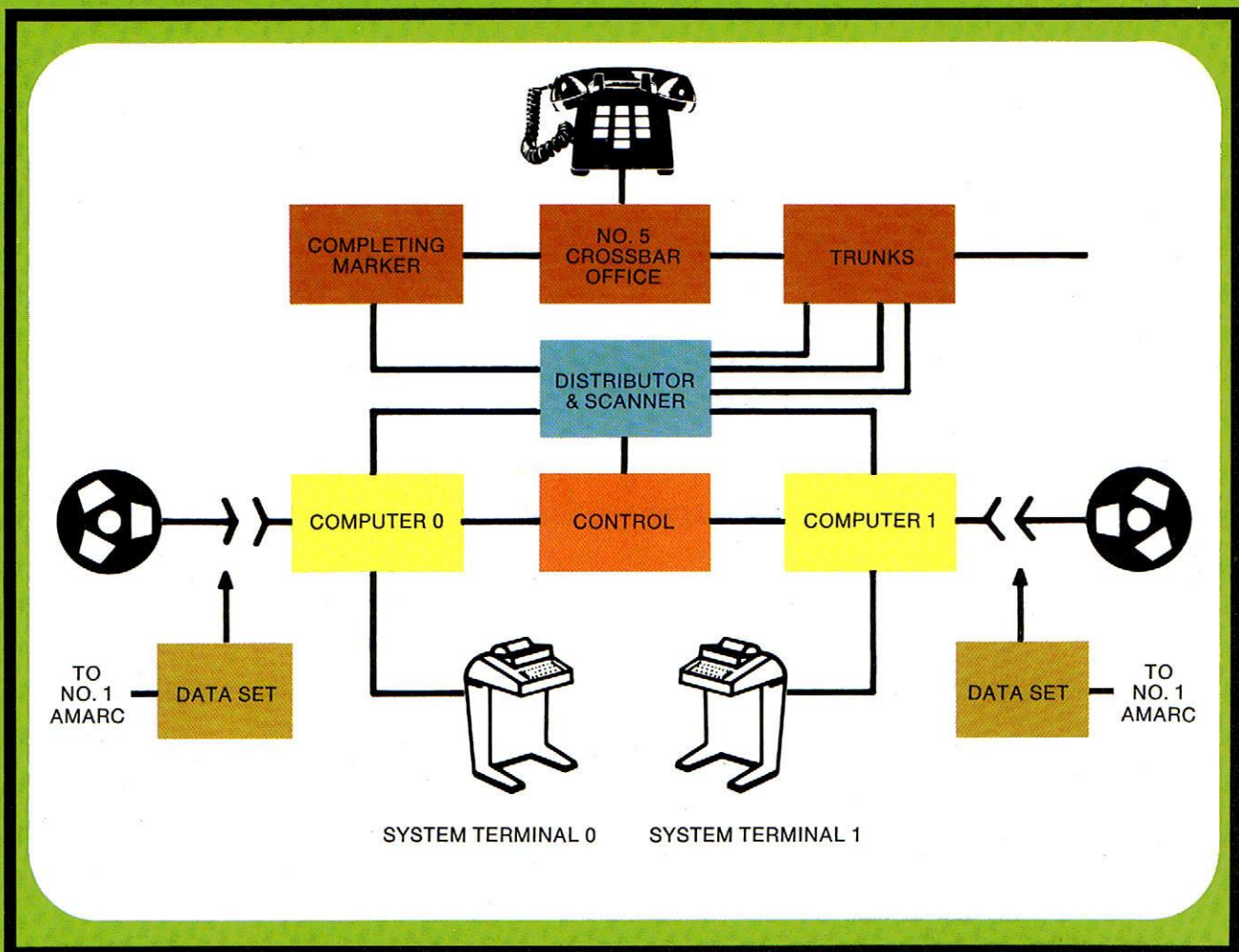


LAMA-C

Minicomputer technology for the No. 5 crossbar office with 100% call recording capability.



The Local Automatic Message Accounting-C (LAMA-C) system will gather and record all the data required to charge customer-dialed telephone messages, both local and toll. The system interfaces to the completing markers and the outgoing trunk circuits via a scanner interface. Initial entry data is received via the marker interface, and answer/disconnect data via the trunk interface.



LAMA-C uses duplicated minicomputers and accessory peripheral equipment to collect. Translate. And provide billing data in a single entry format. Billing data is recorded locally on magnetic tape or transmitted to a central recording center (No. 1 Automatic Message Accounting Recording Center).

LAMA-C avoids major equipment modifications by tapping onto existing data and logic points. This reduces the installation interval. Installation cost. And minimizes the chance of service interruptions.

LAMA-C

REDUCES EQUIPMENT COSTS

- Conversion from non-LAMA (or ANI) to LAMA using existing non-AMA trunks.
- Economical method of introducing usage sensitive pricing.
- Reduced equipment and floor space requirements.
 - Smaller less expensive trunks.
 - No transverters or translators.
 - No recorders, call identity indexers or perforators.
- Senders not required on recorded intraoffice calls.

LAMA-C

INCREASES REVENUE

- One second timing.
- Precise answer and disconnect timing.

LAMA-C

REDUCES OPERATING EXPENSES

- No cross-connection effort to change line from flat rate to message rate.
- No AMA translator cross-connections.
- No paper tape or message registers.
- No tape transport (with central recording).
- No assembly (single entry format on 1600 bpi, 9 track magnetic tape).

Time is money. Record it with LAMA-C.

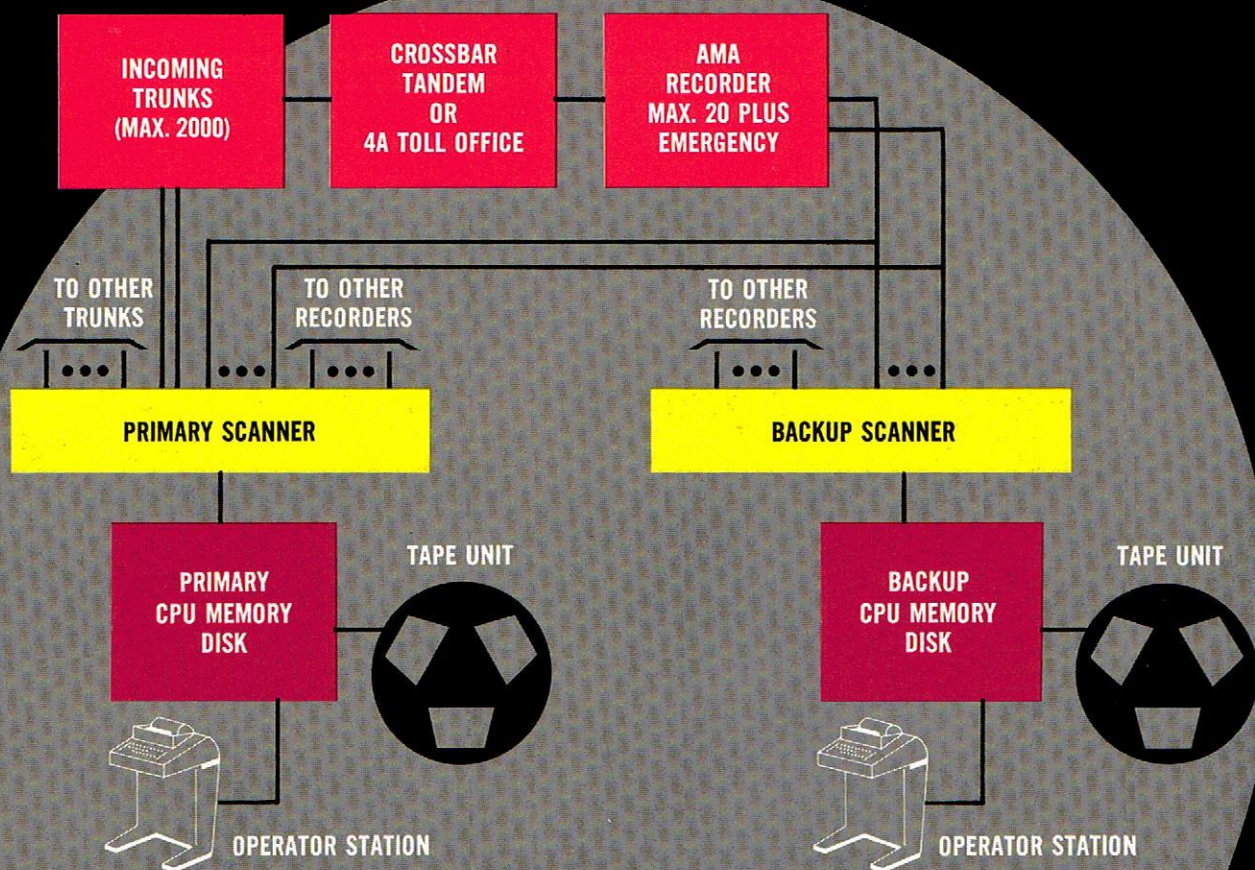
References:

BSP 958-312-110, BSP 218-798-XXX
Product Engineering Control Center—Columbus

Product Information Organization

Western Electric is ready to assist you in meeting your requirements for switching systems of all types. For additional information, technical assistance, and product availability, contact the Service Consultant, Switching Products, serving your state or region.

CAMA-1C



**MINICOMPUTER TECHNOLOGY
FOR THE CROSSBAR TANDEM AND
4A CROSSBAR CAMA OFFICE**



RETIRE THE PAPER TAPE AND PAPER TAPE PERFORATORS.

The Centralized Automatic Message Accounting -C (CAMA-C) system will gather and record all the data required to charge for customer-dialed telephone messages, both local and toll.

CAMA-C uses duplicated minicomputers and accessory peripheral equipment to collect. Translate. And assemble AMA entries.

CAMA-C avoids major equipment modifications by tapping onto existing data and logic points. This reduces the installation interval. Installation costs. And minimizes the chance of service interruption.

CAMA-C will derive:

- *Revenue gains due to improved call timing and direct trunk scanning.*
- *Expense savings due to the use of single entry, 1600 bpi, 9 track magnetic tape.*
- *Expense savings due to reduced maintenance and equipment requirements.*

A 20' x 25' area is recommended for a typical 20 recorder plus emergency system configuration.

INCREASE REVENUE REDUCE EXPENSE. USE CAMA-C

REFERENCE:

GL73-04-161, GL73-06-127,
GL73-09-141

PRODUCT ENGINEERING
CONTROL CENTER—COLUMBUS

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CAMA-C

LAMA-C
CDA

BDT

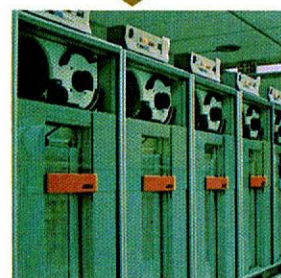
AMARC

**NEW BILLING DATA COLLECTING SYSTEMS
TO MODERNIZE YOUR EXISTING
ELECTROMECHANICAL OFFICES**

Western Electric's **NEW** **AMA** systems will:

- Maximize your revenue by providing a more precise definition of the call duration.
- Reduce the revenue losses resulting from queuing delays and time-outs which cause loss of answer time for calls.
- Effect economies due to faster processing of single-entry format magnetic tape. The use of 1600 bit-per-inch (bpi) magnetic tape eliminates other revenue losses due to paper tape mutilations.
- Result in lower billing costs by eliminating expenses associated with paper tape recording and message registers. This includes elimination of the paper tape perforators, paper tape and message register processing, call record assembly, daily collection of tapes from local offices, and associated transportation problems.
- Prepare you for Usage Sensitive Pricing (USP).

ALL DATA LINKS LEAD TO AN AMARC



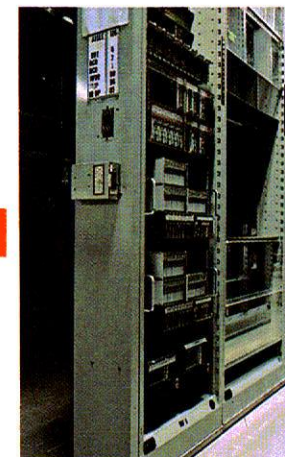
ACCOUNTING
CENTER



The No. 1 AMA Recording Center (AMARC) is a minicomputer facility that provides an inexpensive, reliable means for gathering and recording billing data at a central location. The use of data links from LAMA-C, No. 5ETS, BDT, and CDA eliminates manual collection and transportation of the data. AMARC reduces the cost of central office equipment required for collecting message billing data and aids in the extension of USP on local calls.

AMARC records the billing information on 1600 bit-per-inch, single-entry format, phase encoded, 9-track magnetic tape, compatible with most tape drives in your accounting centers. No medium conversion process is required at your accounting center, as is needed for paper tape.

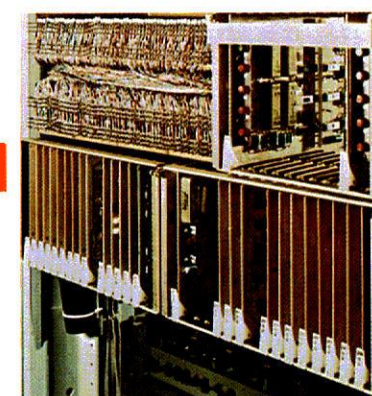
In addition to the LAMA-C, No. 5ETS, BDT, and CDA systems, AMARC can receive billing data from the Billing Information Transmitter for the Switched Digital Data System.



Billing Data Transmitter (BDT) can be used in any electro-mechanical office with paper tape perforators. The data previously perforated on paper tape is gathered by the BDT and data linked to a No. 1 AMA Recording Center (AMARC). At the AMARC, the billing data is processed and recorded on magnetic tape to give a more precise definition of the call duration.

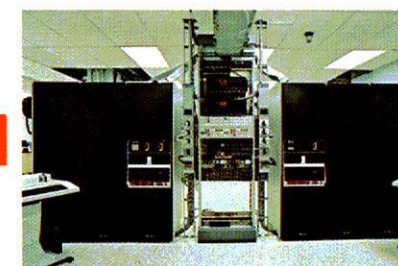


CAMA-C is a minicomputer system that provides almost instantaneous recording of the time-of-answer and the time-of-disconnect for a call along with the called number, calling number, trunk number, and miscellaneous billing information. As a result, you can realize an increase in overtime revenue due to a more precise definition of the call duration. Billing information is made locally on magnetic tape.



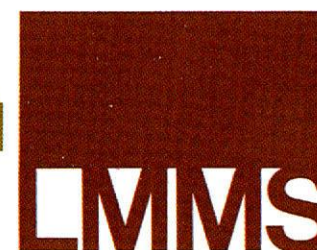
Call Data Accumulator (CDA) is a wired logic device which gathers billing data on local messages in Step-by-Step offices and data links the information to an AMARC. Step-by-Step offices of any size can be equipped with the CDA. It is compatible with ANI-B, ANI-C, ANI-D, and the new ANI-E for Step-by-Step AMA (SAMA) offices. CDA provides the calling number, called number, time-of-answer, and time-of-disconnect. CDA allows implementation of USP by gathering all details to let you charge individual lines for local calls on a usage basis.

INPUT NETWORK / MULTIPLEXER UNIT



LAMA-C is a minicomputer system for collecting billing data on all types of calls in No. 5 Crossbar offices. It is economically attractive where substantial growth in message billing data collection is required, either through rapid growth in customers or through implementation of a new tariff. LAMA-C collects, almost instantaneously, the time-of-answer, time-of-disconnect, calling number, called number, type of call, and message billing index. This billing data is data linked to an AMARC. Increased overtime revenue is a side benefit, thanks to LAMA-C's improved timing precision.

No. 5 crossbar Electronic Translation System (No. 5ETS) is coming. No. 5ETS will expand AMA features in a system designed to take over many of the translation features presently performed by the No. 5 crossbar machine. No. 5ETS will perform both LAMA and CAMA billing functions, marker screening and routing translations, as well as number group and AMA translations.



VITEL 2900B Local Message Metering System (LMMS) can be used in No. 1 Crossbar and Panel offices. It replaces message registers with a magnetic tape output that allows you to institute flexible peak/off-peak charges based on time-of-day, call duration, and zone called (based on office options).

AMA SYSTEM APPLICATION TABLE

AMA SYSTEMS

	CAMA-C	BDT	LAMA-C	No.5 ETS	CDA	LMMS	No.1 ESS	No.1A ESS	No.2 ESS	No.4 ESS	AMARC
OFFICE APPLICATIONS											
Step-by-Step		X			X						
No. 1 Crossbar		X				X					
No. 4A Toll	X	X									
No. 5 Crossbar		X	X	X							
Crossbar Tandem	X	X									
MODERNIZATION											
Replace Paper Tape	X	X	X	X							
Replace Message Registers			X	X	X	X					
Collect Billing Data	X	X	X	X	X	X	X	X	X	X	
Record & Compile Billing Data	X					X	X	X	X	X	X
Usage Sensitive Pricing			X	X	X	X	X	X	X		X
LOCAL RECORDING SINGLE-ENTRY MAGNETIC TAPE											
200 bpi							X		Multiple Entry		
800 bpi								X		X	
1600 bpi	X					X					X
REMOTE CENTRALIZED RECORDING											
AMARC		X	X	X	X						

**MAXIMIZE YOUR REVENUE. MINIMIZE YOUR EXPENSES.
AND BE FLEXIBLE FOR ALL NEW TARIFFS AND RATE CHANGES
WITH WESTERN ELECTRIC'S NEW AMA SYSTEMS.**

Western Electric is ready to assist you in meeting your requirements for switching systems of all types, including special developments. For additional information, technical assistance and product availability, contact the Service Consultant, Switching Products serving your State or Region.

Illinois, Indiana, Michigan, Wisconsin
CENTRAL REGION
3800 Golf Road
Rolling Meadows, Ill. 60008

Larry Zemko
312-956-2528

Jim Calvin / Norm Siekman
312-956-2873 / 312-956-2882

Delaware, Maryland, Ohio, Pennsylvania, Virginia,
West Virginia
EASTERN REGION
225 Schilling Circle
Cockeysville, Md. 21030

William Deltuva
301-666-4247

Joe Mutschler
301-666-6631

Arizona, Colorado, Iowa, Idaho, Minnesota, Montana,
Nebraska, North Dakota, New Mexico, South Dakota,
Utah, Wyoming
MOUNTAIN-NORTHWESTERN REGION
111 Havana Street
Aurora, Colo. 80010

Mac McGuire
303-343-5454

Pat Tierney
303-343-5768

Connecticut, Maine, Massachusetts, New Hampshire,
New Jersey, New York, Rhode Island, Vermont
NORTHEASTERN REGION
Gateway II
Newark, New Jersey 07102

Richard Kleedorfer / Mike Harm
201-468-7979 / 201-468-7982

Gerry Burnham / Art Olsen
201-468-7583 / 201-468-7026

California, Nevada, Oregon, Washington
PACIFIC REGION
898 Stewart Drive
Sunnyvale, Calif. 94086

Richard Anderson
408-745-5575

Jack Lacy / Carl Rafello
408-745-5270 / 408-745-4582

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SOUTHERN REGION
6701 Roswell Road, N.E.
Atlanta, Ga. 30328

William Yetter
404-266-7192

Alabama, Kentucky, Louisiana, Mississippi, Tennessee
SOUTHERN REGION
2020 Valleydale Road
Birmingham, Ala. 35524

John Costanzo
205-979-4020

Tom Olson
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Arkansas, Kansas, Missouri, Oklahoma, Texas
SOUTHWESTERN REGION
1111 Woods Mill Road
Ballwin, Mo. 63011

Roy Benson
314-391-2627

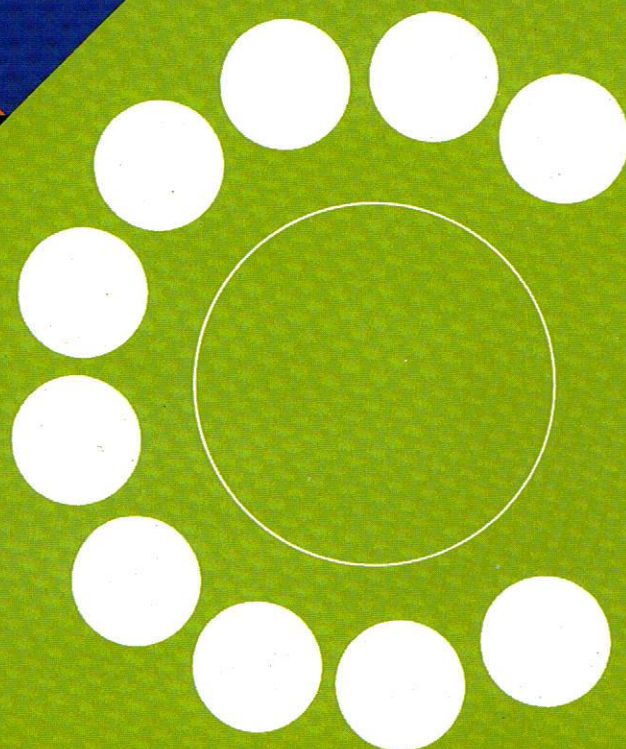
Bob Hardcastle
314-391-3478

Measure Those Local Calls With

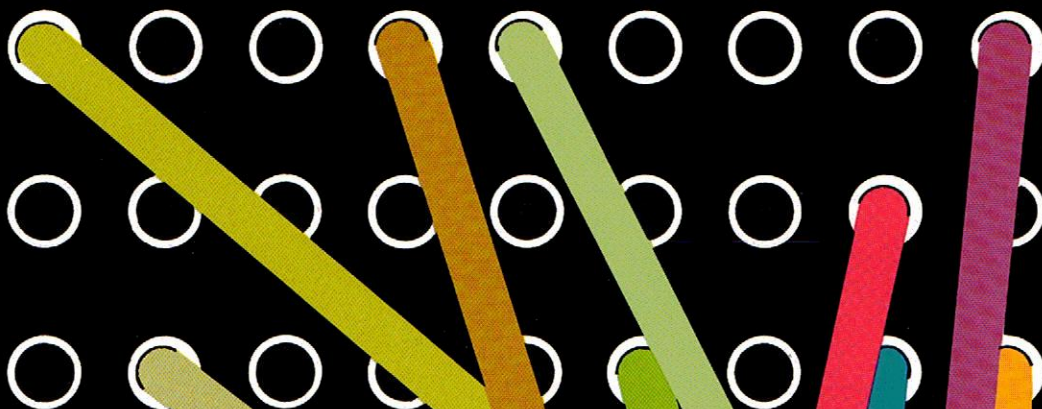
AMARS



Western Electric



ARE YOU GETTING THE MOST OUT OF LOCAL CALL USAGE?

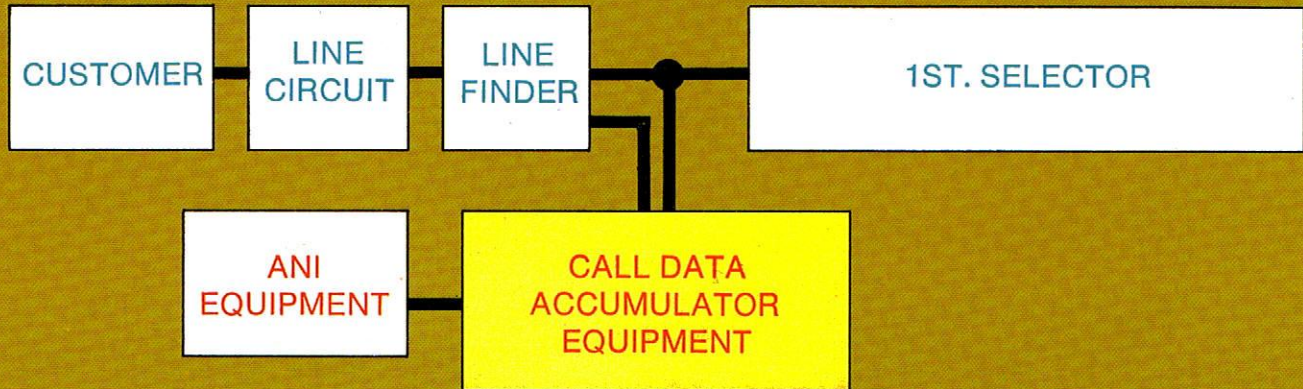


Today, 85% of all local usage is billed on a flat rate basis. SxS offices with 24 million lines, 40% of the Bell System total, are almost entirely flat rate. Usage sensitive pricing in exchange service provides for the gradual introduction of the charging of all local calls on the basis of their frequency, duration and destination.

The Automatic Message Accounting Recording System (AMARS) will identify. Measure. And record message rate calls in up to 30 local SxS offices. AMARS will allow implementation of usage sensitive pricing by recording on industry-standard magnetic tape sufficient detail to permit charging individual lines for local calls on a usage basis.

The system has remote data collection and transmission devices at each SxS office which connect over dedicated data links to a central control. **AMARS consists of the No. 1 Automatic Message Accounting Recording Center (AMARC) and the Call Data Accumulator (CDA).**

SXS CENTRAL OFFICE



No. 1. Automatic Message Accounting Recording Center

The No. 1 AMARC is a centralized minicomputer installation. It will collect billing data transmitted via data links from up to 30 remote local offices. The installation is based on a pair of J1P006 minicomputers operating in a duplex configuration for maximum reliability. The minicomputers poll each local office over data links to obtain accumulated calling information.

THE FOLLOWING DATA IS RECORDED:

A

The calling party's directory number.

B

The called party's directory number or zone called.

C

The time of day of call answer.

D

The time of day of call disconnection.

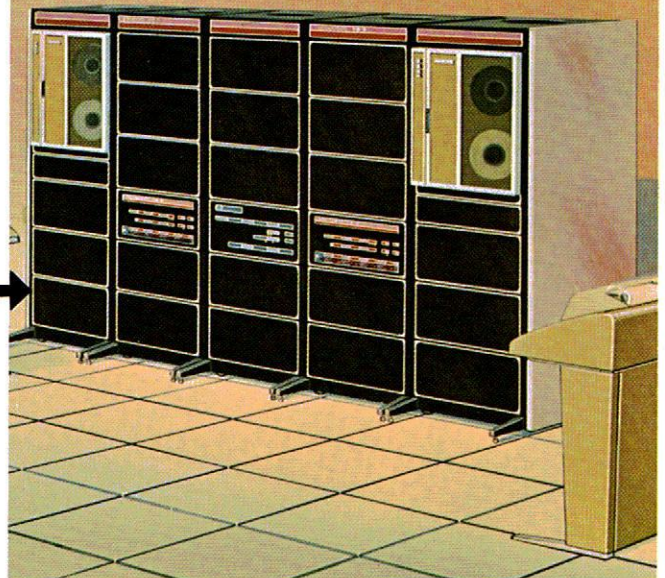
The No. 1 AMARC will also record local calls from suitably equipped No. 5 Crossbar and, in the future, No. 3 ESS offices. Toll traffic will continue to be billed as at present.

Call Data Accumulator

The CDA is connected to the SxS system at the point between the line finder and first selector. It recognizes an off hook condition. Answer of called party. And disconnect of the calling party. Data collected is communicated to the No. 1 AMARC.

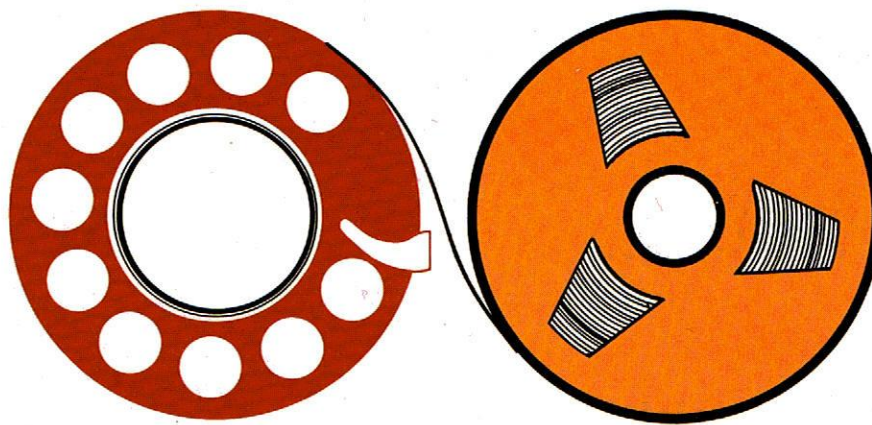
Occupies 50" of relay rack space. Modular design with integrated circuits. And it does not require any message rate trunk circuits. SxS offices must be equipped with the line identification features of ANI-B, ANI-C, or ANI-D.

No. 1. AMA Recording Center



WHY
STAY FLAT?
MEASURE IT
WITH

AMARS



PRODUCT ENGINEERING CONTROL CENTER
HAWTHORNE

MANUFACTURING LOCATION
HAWTHORNE

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PRODUCT INFORMATION ORGANIZATION

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