

EDVAC

Electronic Discrete Variable Automatic Computer

MANUFACTURER

Moore School of Electrical Engineering
University of Pennsylvania



Picture by Ballistic Research Laboratories

APPLICATIONS

Government

Ballistic Research Laboratories

Solution of ballistic equations; bombing and firing tables; fire control; data reduction; related scientific problems.

A general purpose computer which may be used for solving many varieties of mathematical problems.

NUMERICAL SYSTEM

Internal number system	Binary
Binary digits per word	44
Binary digits per instruction	4 bits/command
10 bits each address	
Instructions per word	1
Instructions decoded	16
Instructions used	12
Arithmetic system	Floating and Fixed point
Instruction type	Four-address code

Number range

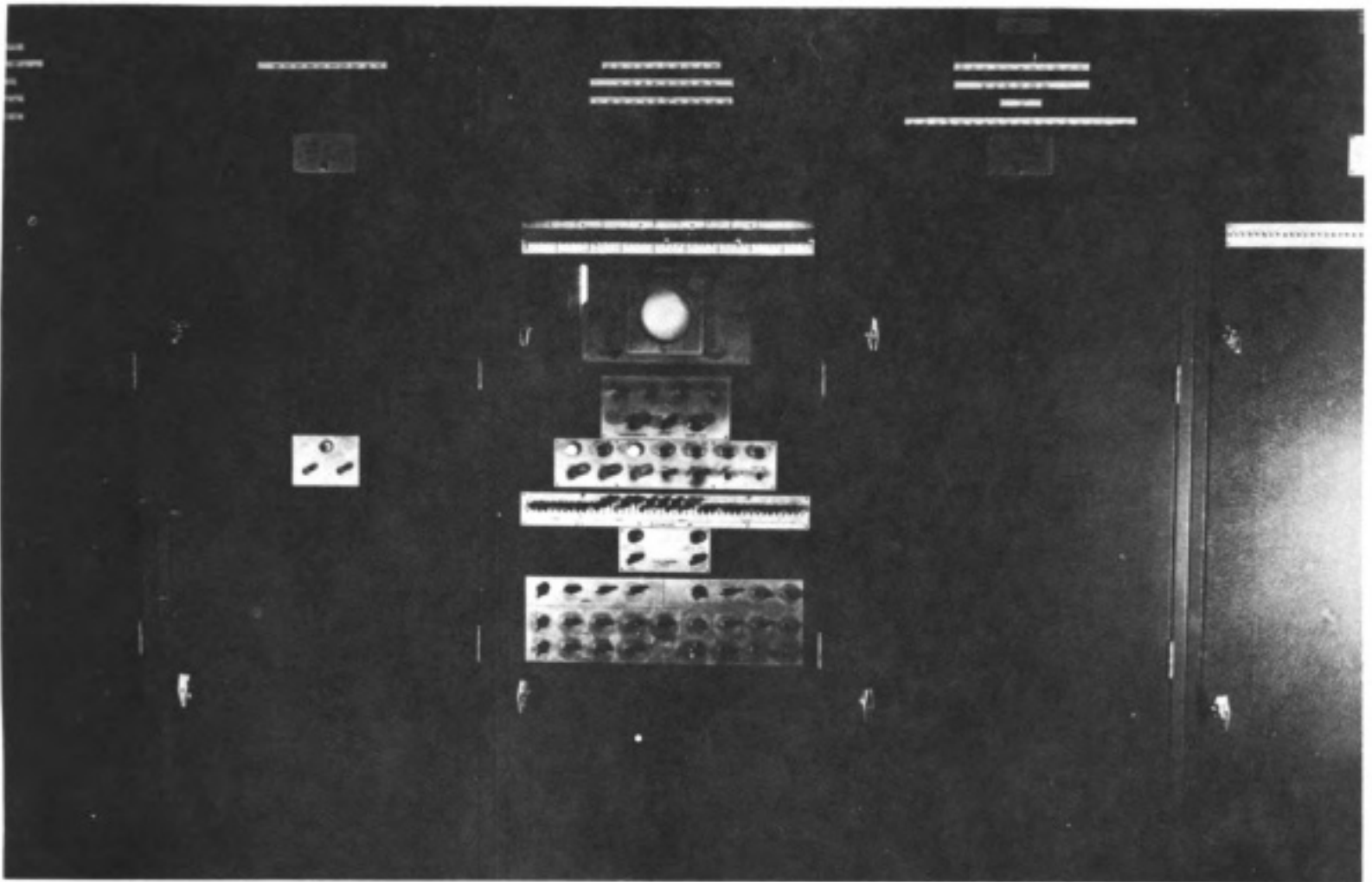
Fixed $-(1-2^{-43}) \leq n \leq (1-2^{-43})$

Floating $-(1-2^{-33})2^{511} \leq n \leq (1-2^{-33})2^{511}$

The fractional part of floating point number has 33 bits plus sign, and the exponent of 2 may range from -512 to +511.

ARITHMETIC UNIT

Add time (includ. stor. access)	864	Microsec
(min 192 max 1,536)		
Mult time (includ. stor. access)	2,880	
(min 2,208 max 3,552)		
Div time (includ. stor. access)	2,930	
(min 2,256 max 3,600)		
Construction	Vacuum-tubes and Diode-gates	
Number of rapid access word registers	4	
Basic pulse repetition rate	1.0 megacycle/sec	
Arithmetic mode	Serial	
Timing	Synchronous	
Operation	Sequential	



Picture by Ballistic Research Laboratories (Control Panel)

STORAGE

Media	Words	Access microsec
Mercury Acoustic Delay Line	1,024	48-384
Magnetic Drum	4,608	17,000

Includes relay hunting and closure.

The rate of information transfer to and from the drum is at one megacycle per second. The block length is optional from 1 to 384 words per transfer instruction.

INPUT

Media	Speed
Photoelectric Tape Reader	942 sexadec char/sec 78 words/sec
Card Reader (IBM)	15 rows/sec 100 cards/min

OUTPUT

Media	Speed
Paper Tape Perf.	6 sexadecimal char/sec 30 words/min
Teletypewriter	6 sexadecimal char/sec 30 words/min
Card Punch	100 cards/min 800 words/min

CIRCUIT ELEMENTS ENTIRE SYSTEM

Tubes	4,000
Tube types	20
Crystal diodes	10,000
Magnetic elements	1,325 (relays, coils and trans)
Transistors	6
Capacitors	6,000
Resistors	26,000
Neons	500
No. of separate cabinets	13
(excluding power and air cond.)	

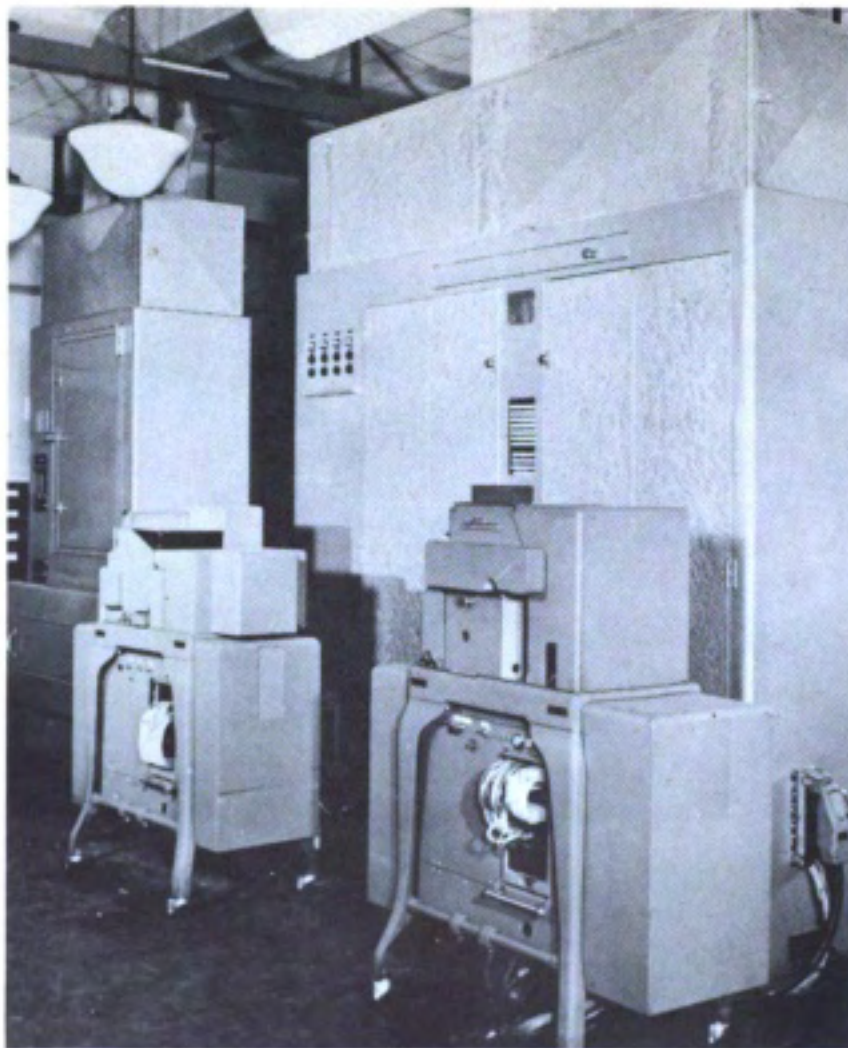
CHECKING FEATURES

Fixed

Two arithmetic units perform computation simultaneously, discrepancies halt machine. Unused command. Paper tape reader error detection.

POWER, SPACE AND WEIGHT

Power, computer	50 K.W.
Space, Computer	490 sq. ft. floor
Weight, Computer	17,300 lbs.
Power, Air Cond.	25 K.W.
Space, Air Cond.	6 sq. ft. floor
Weight, Air Cond.	4,345 lbs.
Capacity, Air Cond.	20-Tons



Picture by Ballistic Research Laboratories

PRODUCTION RECORD

Number produced	1
Number in current operation	1

COST, PRICE AND RENTAL RATE

Approximate cost, basic system	\$467,000
Rental rates for additional equipment	
I.B.M. card reader	\$82.50 per month
I.B.M. card punch	\$77.00 per month

PERSONNEL REQUIREMENTS

Daily Operation	No. of Tech.
24 hours per day	5
7 days per week	

No engineers are assigned to operation of the computer, but are used for design and development of improvements to the computer. The technicians consult with engineers when a total break-down occurs.

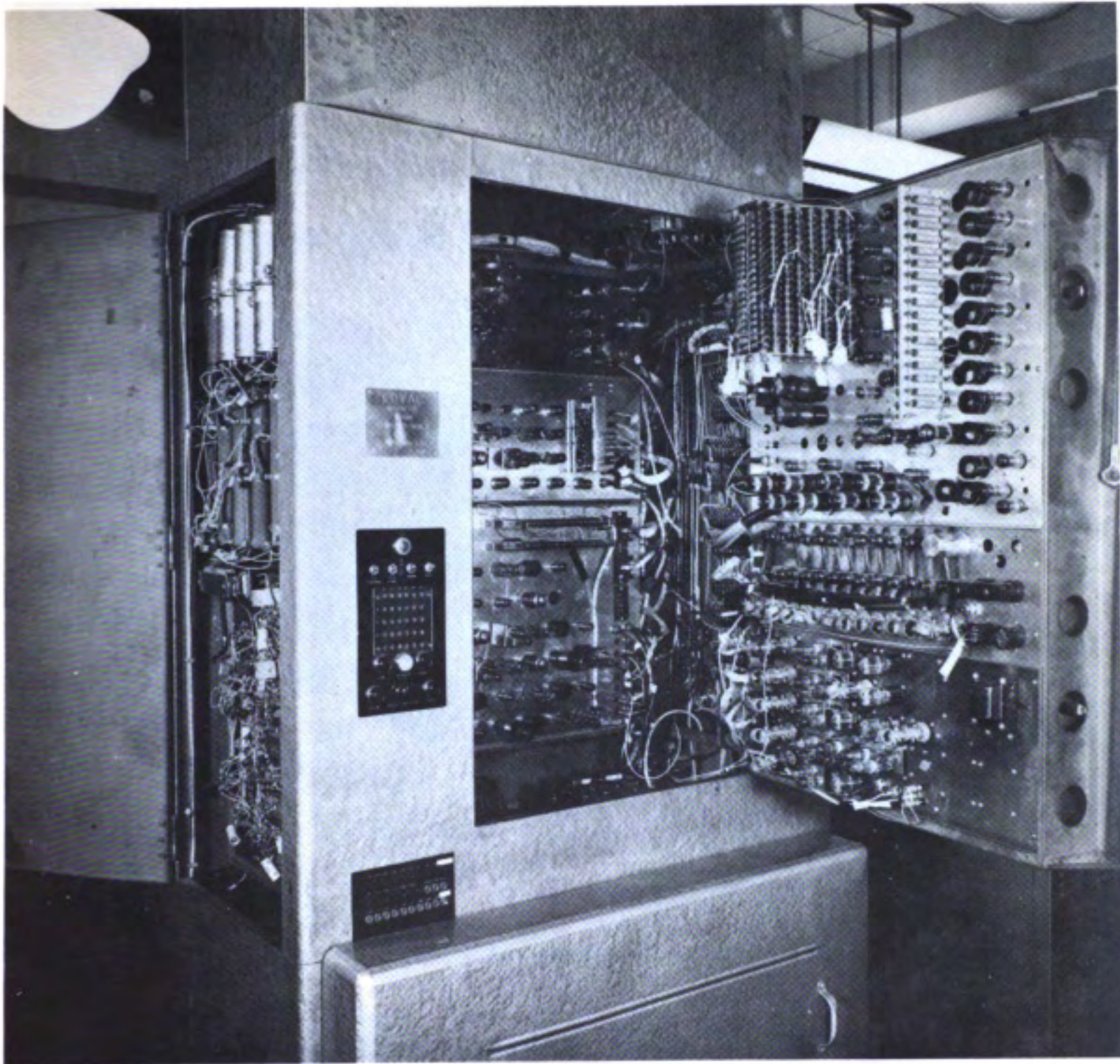
RELIABILITY AND OPERATING EXPERIENCE

Average error-free running period	Approx. 8 hours
Good time	6,752 hours
Attempted to run time	8,728 hours
Operating ratio	0.78

Above figures based on period from 1 January 1956 to 28 December 1956. The 1,976 hours of down time includes testing, break-down, bad operation time, and machine improvement time to incorporate new equipment. The 6,752 hours is good time during which production, code checking or duplication were performed. This represents an average of approximately 130 hours of good time per week.

ADDITIONAL FEATURES AND REMARKS

Oscilloscope and neon indicator for viewing contents of any storage locations at any time.
 Exceed capacity options: halt, ignore, transfer control, or go to selected location.
 Unused instruction (command) halt.
 Storage of previously executed instruction and which storage location it came from, for viewing during code checking.
 Storage of current instruction and storage location it originated from.
 Address halt when prescribed address appears in any of 4 addresses of instruction to be executed by computer.
 Tape reader error detection.
 Built in automatic floating point equipment.
 Magnetic tape auxiliary storage unit and high speed printing techniques are being investigated.
 Punching one card requires from 384 to 768 microseconds. The computer may proceed between cards.



Picture by Ballistic Research Laboratories (Magnetic Drum Storage Unit)

INSTALLATIONS

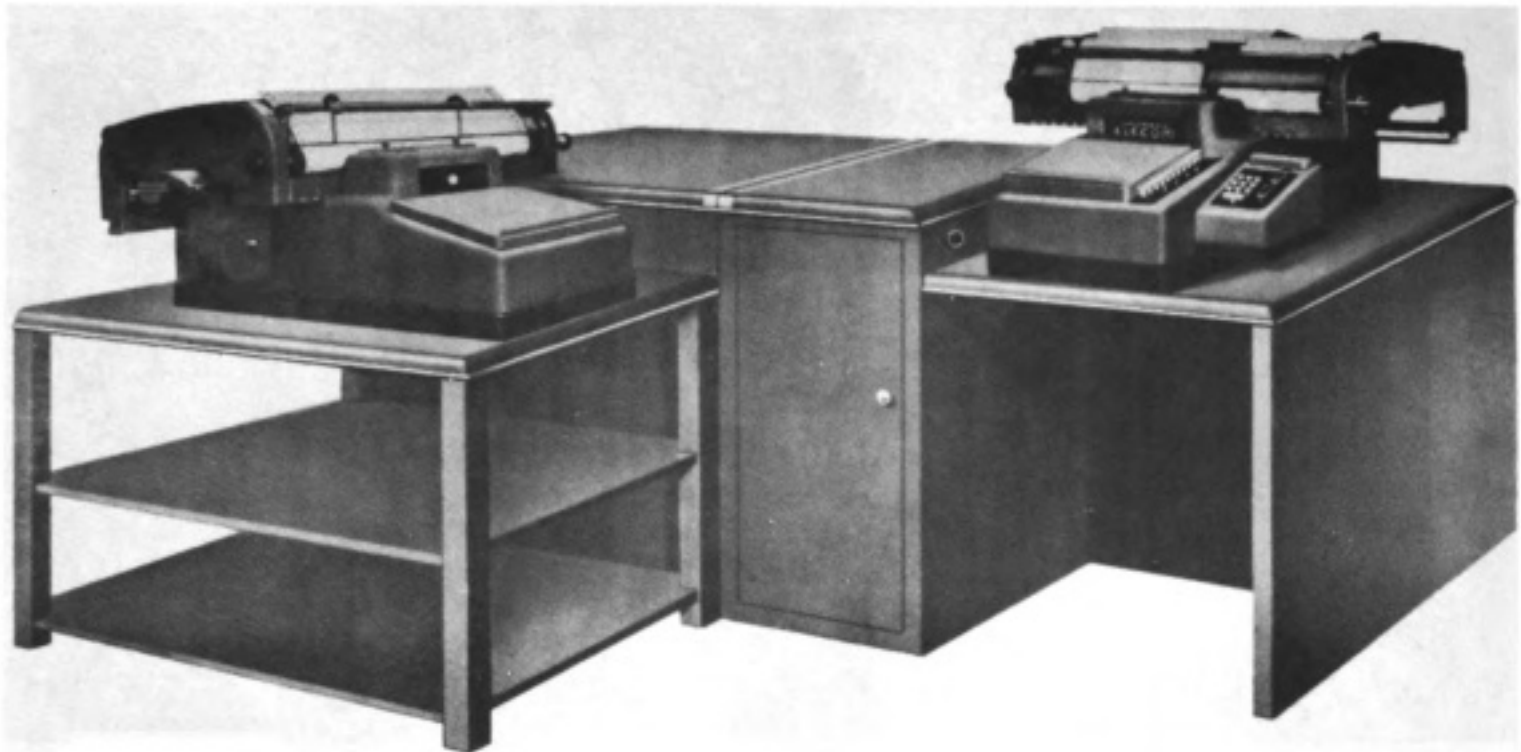
Ballistic Research Laboratories
Aberdeen Proving Ground, Maryland

ELECOM 50

Elecom Type 50 Electronic Accounting Machine

MANUFACTURER

Underwood Corporation
Electronic Computer Division



Picture by Underwood Corporation, Electronic Computer Division

APPLICATIONS

Commercial

Operation Sequential

650 microseconds is one minor cycle, multiplication requires 60 minor cycles.

NUMERICAL SYSTEM

Internal number system	Decimal
Decimal digits per word	10 plus sign
Instructions decoded	42 plus combinations
Arithmetic system	Fixed point
Number range	.000001 to 99999999

ARITHMETIC UNIT

	Microsec
Add time (exclud. stor. access)	650
Mult time (exclud. stor. access)	39,000
Construction	Vacuum tubes
Rapid access word registers	3
Basic pulse repetition rate	67 Kc/sec
Arithmetic mode	Serial
Timing	Synchronous

STORAGE

Media	Words	Digits	Microsec Access
Magnetic Drum (Main)	100	1,000	33,000
Magnetic Drum (Working Registers)	3	30	325

INPUT

Media	Speed
Keyboard	Manual
Paper Tape	20 dec dig/sec

OUTPUT

Media	Speed
Printers (Two-gang)	10 char/sec
Paper Tape	2 dec dig/sec

The printers operate in parallel.

CIRCUIT ELEMENTS ENTIRE SYSTEM

Tubes	160
Tube types	5
Crystal diodes	2,000
Number of different kinds of plug-in units	42
Number of separate cabinets, excluding power supplies and air conditioners	3

POWER, SPACE AND WEIGHT

Power, computer	2 KW
Space, computer	50 cu. ft. 20 sq. ft.
Weight, computer	750 lbs.

PRODUCTION RECORD

Produced	3
In production	50
Operating	3
On order	50
Delivery time	12 Months

COST, PRICE AND RENTAL RATE

Approximate cost of basic system	\$22,500
Rental rates of basic system	\$ 600/month

PERSONNEL REQUIREMENTS

Manufacturer	
Daily Operation	Tech and Operators
One 8 Hour shift	1
Two 8 Hour shifts	2
Three 8 Hour shifts	3

RELIABILITY AND OPERATING EXPERIENCE

Manufacturer	
Average error-free running period	6 hours

INSTALLATIONS

Underwood Corporation, Electronic Computer Division, 35-10 36th Avenue, Long Island City 6, New York (1)
Underwood Corporation, One Park Avenue, New York, New York (2)

On order:

American Telephone and Telegraph Company, 195 Broadway, New York 7, New York (2)

ADDITIONAL FEATURES AND REMARKS

Manufacturer
Simple operation
Programming by manufacturer
2,400 step program tape
Interchangeable program tapes

ELECOM 100

Elecom Type 100 Electronic Computer

MANUFACTURER

Underwood Corporation
Electronic Computer Division



Picture by Underwood Corporation, Electronic Computer Division

APPLICATIONS

Manufacturer

Engineering and scientific

Government Sample

Aberdeen Proving Ground Development and Proof Services

Missiles, aircraft systems accuracy, expansion of firing tables, fire control problems.

Industrial Sample

Stevens Institute of Technology

Instruction in programming and research calculations.

Reeves Instrument Company

The computer is owned by the U. S. Navy, Bureau of Aeronautics, and is operated by Reeves Instrument Company under Project Cyclone.

NUMERICAL SYSTEM

Internal number system	Binary
Binary digits per word	30

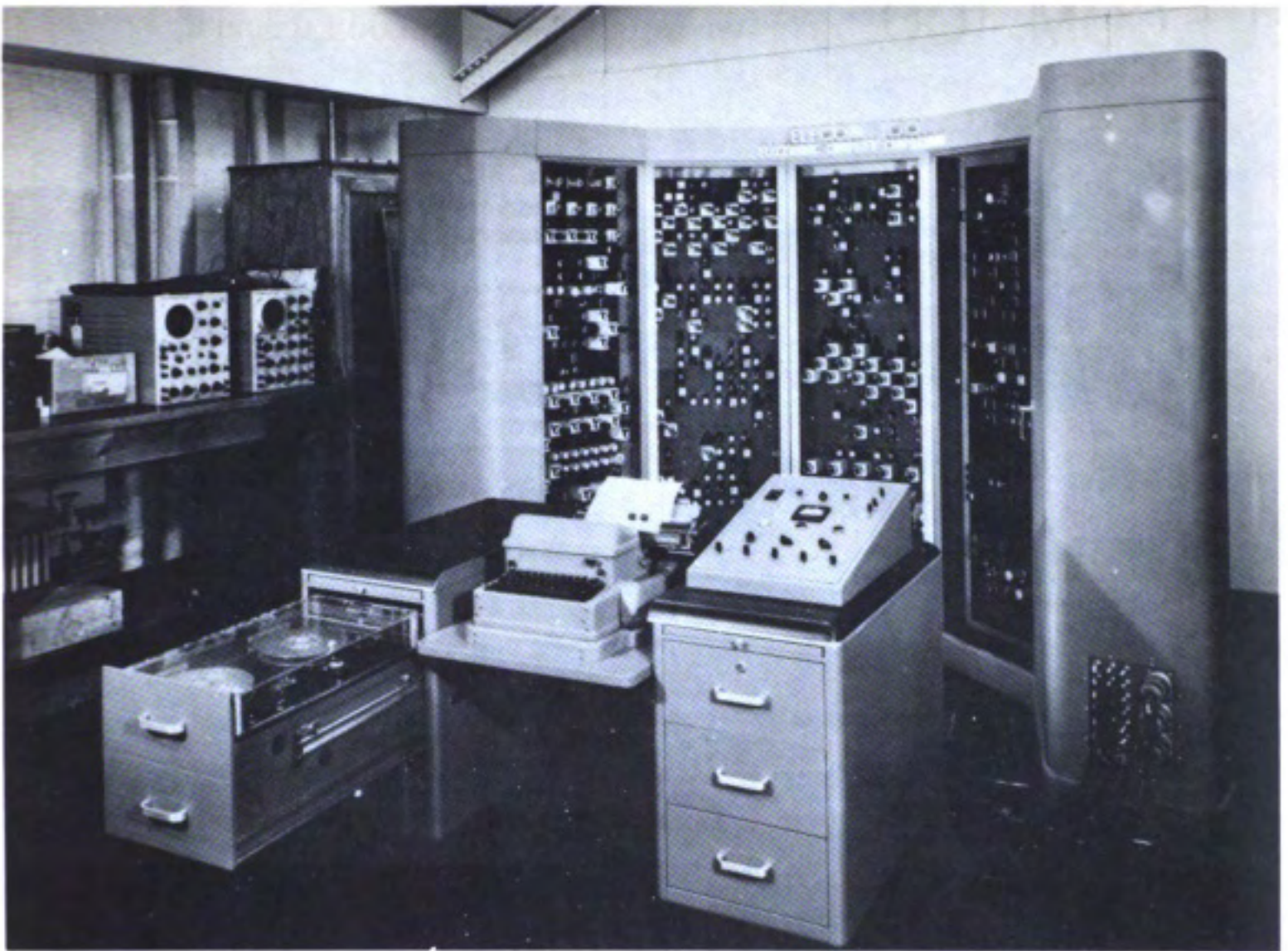
Binary digits per instruction	30
Instructions per word	1
Instructions decoded	8
Instructions used	8
Arithmetic system	Fixed point
Instruction type	Three address
Number range	$-(4 \cdot 2^{-27})$ to $(4 \cdot 2^{-27})$

The 8 instructions include an "external operation" which, in turn, includes six different operations. Octal number system is used.

ARITHMETIC UNIT

Construction	Vacuum tubes
Basic pulse repetition rate	100 Kc/sec
Arithmetic mode	Serial
Timing	Synchronous (Magnetic Drum) Asynchronous (Magnetic Tape)
Operation	Sequential

25-50 operations per second may be performed, including drum storage access.



Picture by Aberdeen Proving Ground, Development and Proof Services

STORAGE

Media	Words	Microsec Access
Magnetic Drum	512	20,000
Magnetic Tape	60,000	

Access time is the maximum value. One block of tape is equivalent to one channel on the drum (64 words). A transfer, or movement of one block takes approximately 2 seconds.

INPUT

Media	Speed
Typewriter (Flexowriter)	Manual
Paper Tape (Flexowriter)	7.5 octal dig/sec

OUTPUT

Media	Speed
Typewriter (Flexowriter)	7.5 char dig/sec

CIRCUIT ELEMENTS ENTIRE SYSTEM

Tubes	230
Tube types	6

Crystal diodes	2,200
Separate cabinets	2
Number of different kinds of plug-in units	5

Government Sample
Aberdeen Proving Ground, Development and Proof Services
System has 42 relays.
Industrial Sample
Stevens Institute of Technology
System consists of 5 adjacent racks with 22 panels.

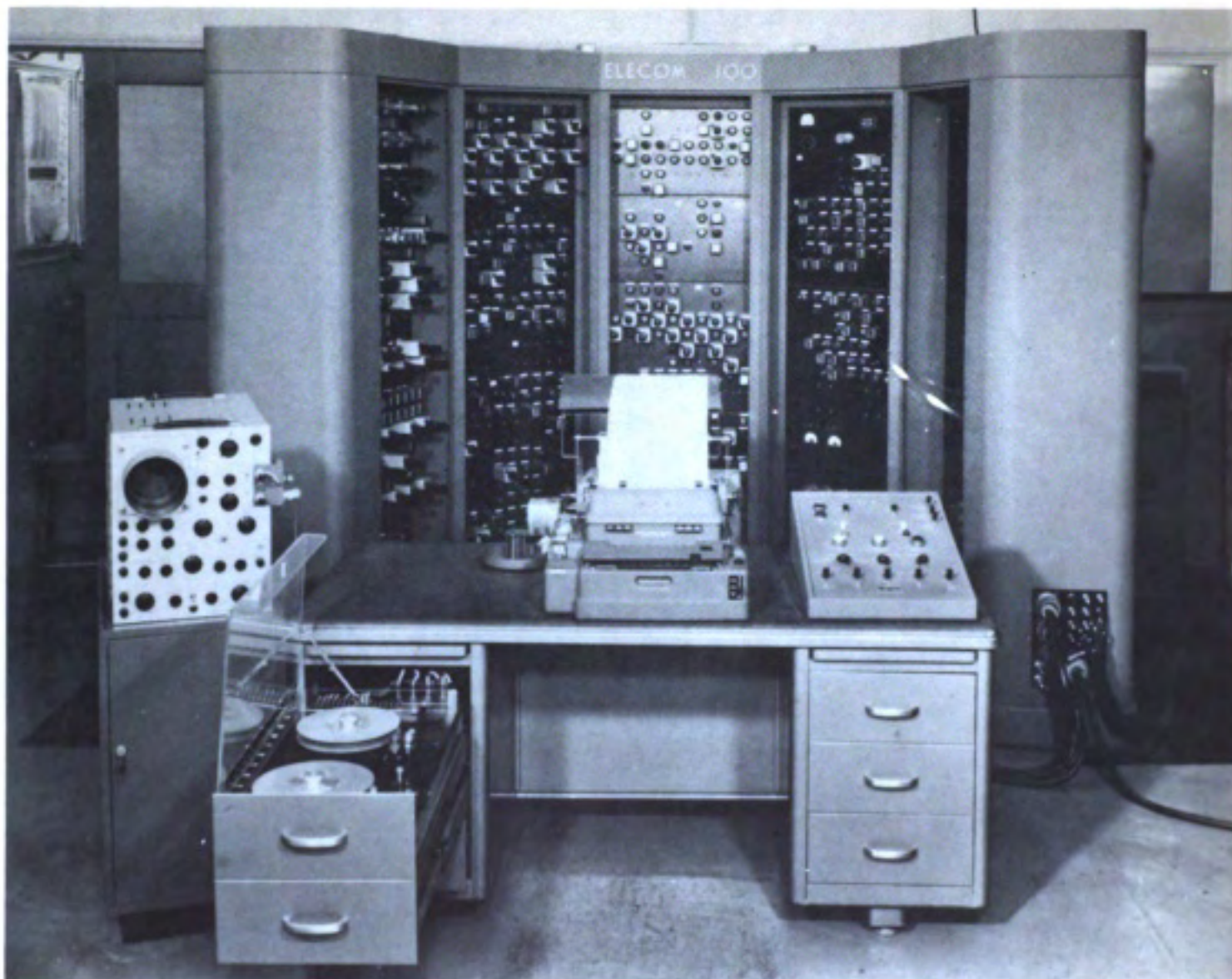
CHECKING FEATURES

Fixed
Overflow indication and halt
Out of synchronism for tape and halt
Engineering diagnostic tests

POWER, SPACE AND WEIGHT

Power, computer	3.5 KW
Space, computer	120 sq. ft.

Industrial Sample
Stevens Institute of Technology
System requires 3.5 KW, occupies 1,200 cu. ft., 120 sq. ft. Air conditioner capacity is 5 Tons and



Picture by Reeves Instrument Company

Occupies 200 cu. ft. and 20 sq. ft.

PRODUCTION RECORD

Produced 3
 Operating 3

COST, PRICE AND RENTAL RATE

Approximate cost of basic system \$60,000.

Industrial Sample
 Stevens Institute of Technology
 System donated to the Institute for educational purposes.

PERSONNEL REQUIREMENTS

Daily Operation	Engineers	Tech and Operators
One 8 Hour shift	1	1
Two 8 Hour shifts	2	2
Three 8 Hour shifts	3	3

Industrial Sample
 Stevens Institute of Technology
 System requires 1 maintenance engineer and 1 programmer.

RELIABILITY AND OPERATING EXPERIENCE

First unit passed acceptance test on 9 December 1952.

Government Sample	
Aberdeen Proving Ground, Development and Proof Services	
Good time	1,471 hours
Attempted to run time	2,225 hours
Operating ratio (Good/Attempted to run)	0.66
Industrial Sample	
Stevens Institute of Technology	
Good time	892 hours
Attempted to run time	1,212 hours
Operating ratio (Good/Attempted to run)	0.735

Figures based on period March 1956 to 5 November 1956.

FUTURE PLANS

Industrial Sample
 Stevens Institute of Technology
 Magnetic tape unit to be placed in service during 1957.

Government Sample

Aberdeen Proving Ground, Development and Proof Services

It is planned to improve the input-output systems, the Flexowriter attachment, tape, and prepared programs. It is further planned to increase the size of the rapid access storage unit.

INSTALLATIONS

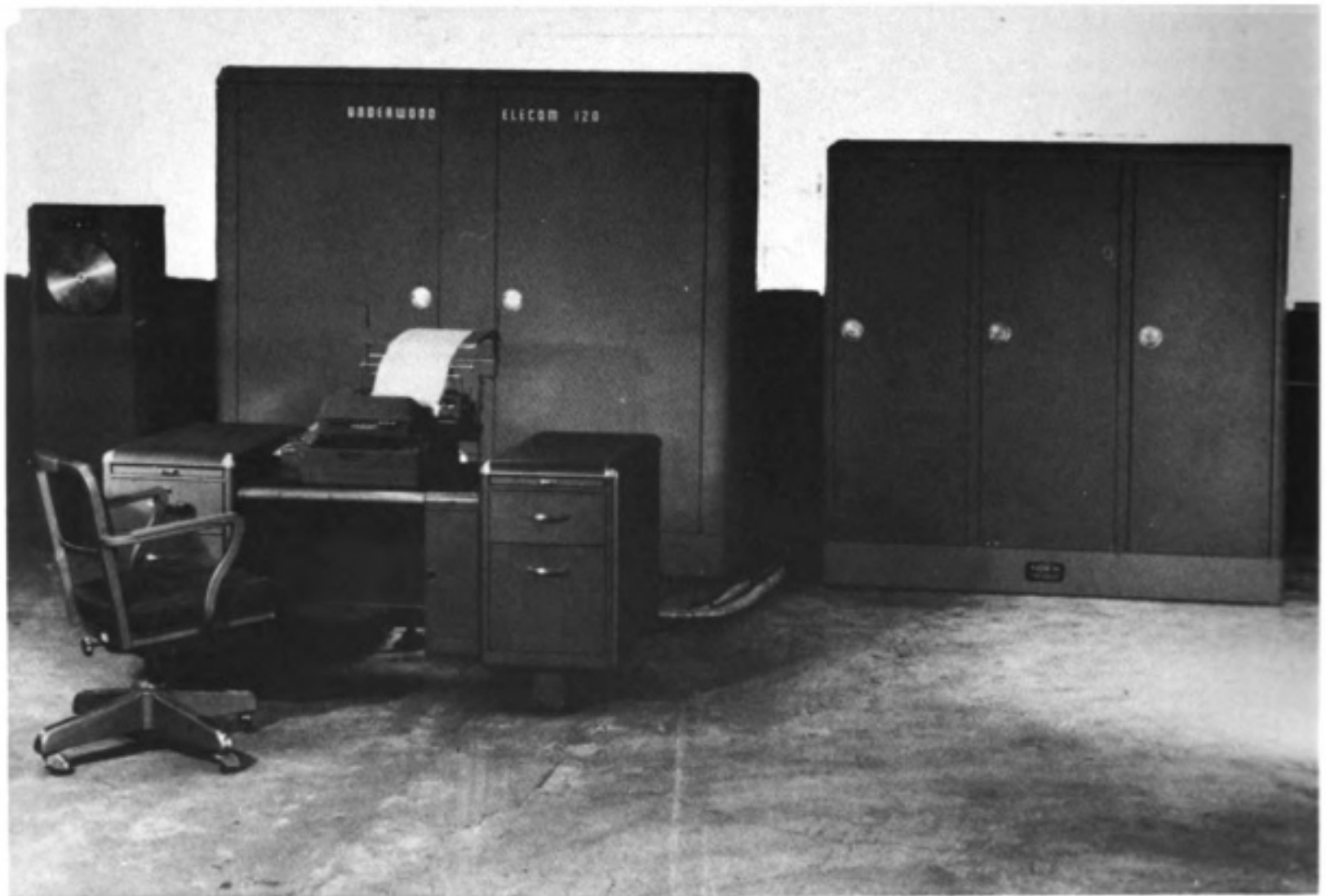
Aberdeen Proving Ground, Development and Proof Services, Maryland
Reeves Instrument Corporation, 215 E. 91st Street, New York 28, New York
Stevens Institute of Technology, Hudson Street, Hoboken, New Jersey

ELECOM 120

Elecom Type 120 Electronic Computer

MANUFACTURER

Underwood Corporation
Electronic Computer Division



Picture by Underwood Corporation, Electronic Computer Division

APPLICATIONS

Manufacturer
Engineering and scientific applications.

Government Sample
Griffiss Air Force Base, RADC
Scientific and general purpose applications.

Industrial Sample
Republic Aviation Corporation
Aircraft engineering, research and development.
Shell Development Company
Non-routine research calculations.

NUMERICAL SYSTEM

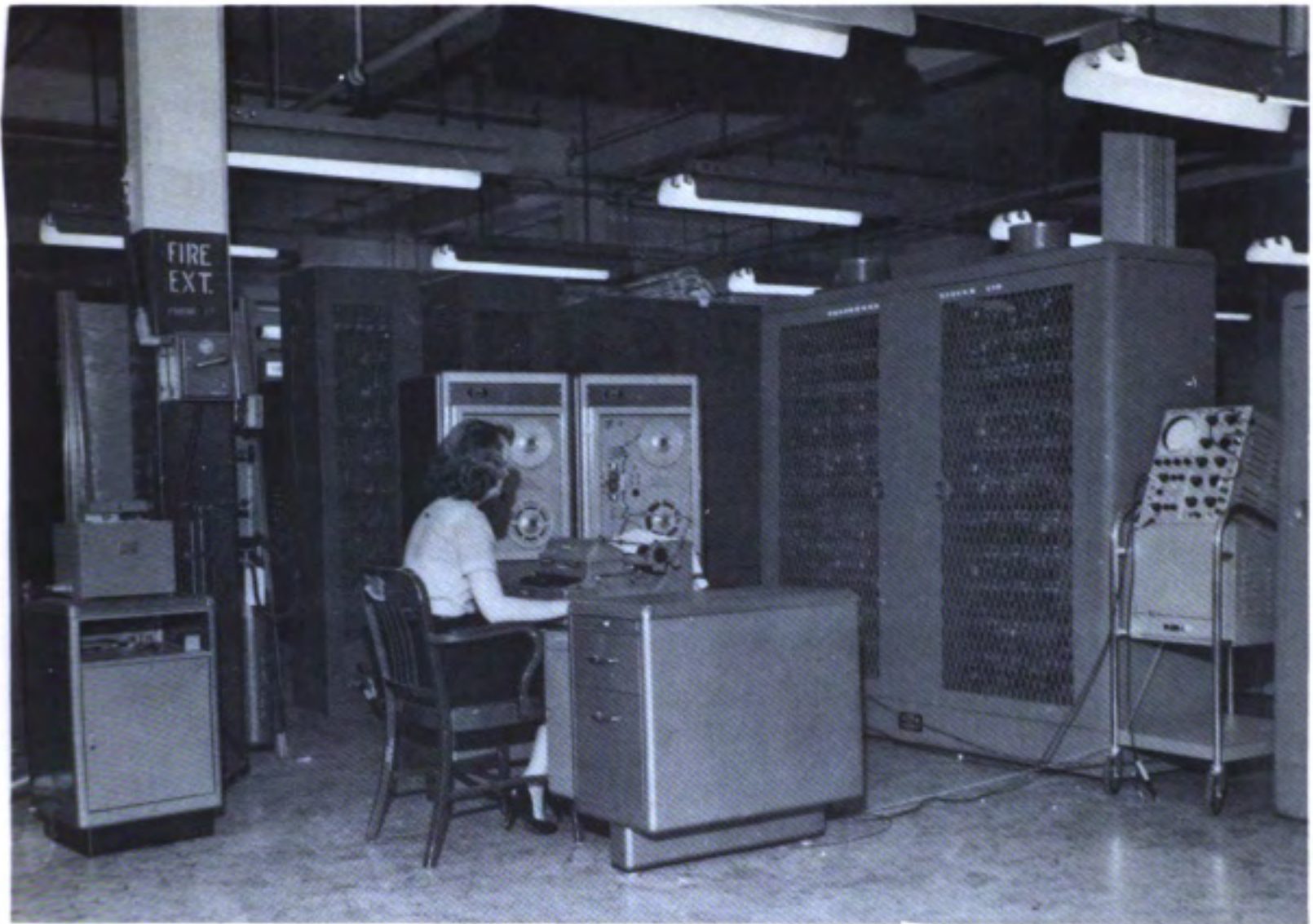
Internal number system	Decimal
Decimal digits per word	8 plus sign
Decimal digits per instruction	10
Instructions per word	1
Instructions decoded	33

Instructions used	33
Arithmetic system	Fixed and floating point
Instruction type	Two address
Number range	
Fixed point	$-(10 \cdot 10^{-10}) \leq n \leq (1 \cdot 10^{-10})$
Floating point	Exponent $-50 \leq c \leq 49$
	Coefficient $-(1 \cdot 10^{-8}) \leq c \leq (1 \cdot 10^{-8})$

Floating point operation is optional and is supplied with fixed point at extra cost.

ARITHMETIC UNIT

Manufacturer	
Add time (exclud. stor. access)	330 Microsec
Mult time (exclud. stor. access)	18,300
Div time (exclud. stor. access)	18,700
Construction	Vacuum tubes and crystal diodes
Rapid access word registers	3
Basic pulse repetition rate	105 Kc/sec
Arithmetic mode	Serial



Picture by Griffiss Air Force Base, RADC, Statistical Services Division

Timing Synchronous
 Operation Sequential

Above operation times are for average 10 digit multiplier, dividend and divisor, respectively.

Government Sample

Griffiss Air Force Base, RADC

Average add time including access time 32,000 microseconds.

Average multiply time including access time 46,000 microseconds.

Average divide time including access time 46,000 microseconds.

Industrial Sample

Republic Aviation Corporation

This system utilizes the 12AT7, 6CL6, 5687, and 2C51 in the arithmetic unit. Diodes used are 1N34A, 1N140 and 1N91.

Shell Development Corporation

350 vacuum tubes and 4,000 diodes are used.

channels.

Government Sample

Griffiss Air Force Base, RADC

Storage includes magnetic drum of 1,000 words of 20,000 microsecond maximum access time and 330 microsecond minimum access time. Access time depends on programming. Magnetic tape drives store 125,000 words each. Present drives will be replaced with Potter type tape drives by Underwood at no charge. Access time on tapes is 1.6 microsecond per 50 words.

Industrial Sample

Republic Aviation Corporation

System has 2,000 words of magnetic drum, 125,000 words of magnetic tape and 10 words of rapid access drum loop storage. Magnetic tape transfers information in blocks of 50 words.

Shell Development Company

Drum and tape storage of 10, 1,000, and 125,000 words, respectively.

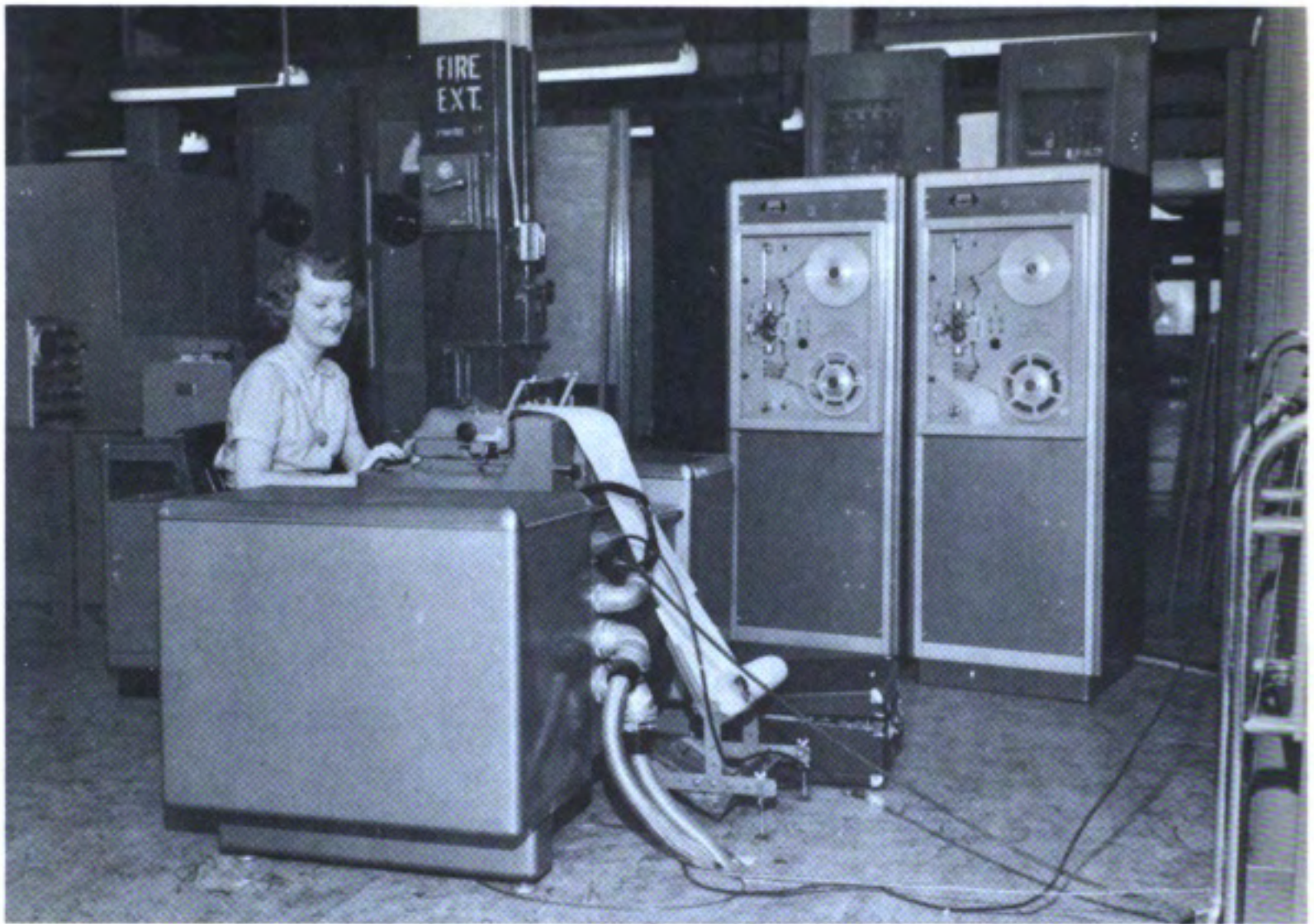
STORAGE

Manufacturer	Media	Words	Microsec Access
	Magnetic Drum	1,000-10,000	8,300 Avg.
	Magnetic Drum	10-100	1,670 Avg.

Main storage is on single head per channel basis. Fast access storage is a group of recirculating

INPUT

Manufacturer	Media	Speed
	Typewriter	Manual and 8 char/sec
	Paper Tape Reader	8 to 400 char/sec
	Magnetic Tape	400 char/sec



Picture by Griffiss Air Force Base, RADC, Statistical Services Division

Typewriter is standard equipment. The high-speed paper tape reader is optional. One magnetic tape unit is supplied as standard equipment. Standard model includes controls for additional tape units.

Government Sample

Griffiss Air Force Base, RADC
System uses Flexowriter tape reader at a speed of .95 seconds/word (9digits) and a Ferranti high speed tape reader at 200 decimal digits/sec.

Industrial Sample

Republic Aviation Corporation
Input system uses Flexowriter (Keyboard and paper tape) and a Ferranti paper tape reader at 200 char/sec.

Shell Development Company
System uses Flexowriter and Ferranti reader at 1 and 20 words/sec, respectively.

OUTPUT

Manufacturer	Media	Speed
	Typewriter	8 char/sec
	Paper Tape	8 or 60 char/sec
	Magnetic Tape	400 char/sec

Typewriter is standard equipment. High speed paper tape punch is optional.

Industrial Sample
Republic Aviation Corporation
System uses Flexowriter and Teletype punch at 10 and 60 char/sec, respectively.

CIRCUIT ELEMENTS ENTIRE SYSTEM

Tubes	400
Crystal diodes	4,500

95% of tubes are of two basic types.

Government Sample
Griffiss Air Force Base, RADC
System utilizes 6 types of tubes and is contained in 5 separate cabinets.

CHECKING FEATURES

Manufacturer
Fixed
Internal check for forbidden pulse combinations and check of drum-writing operations. Parity check on tapes with automatic re-read.

Government Sample
Griffiss Air Force Base, RADC
System has transfer error check for number and existence of coded digits. Magnetic tape has parity check.



Picture by Republic Aviation Corporation

Industrial Sample

Republic Aviation Corporation
System has a bit check, a timing check, address marker check, instruction completion check, overflow check and tape redundancy check.

Shell Development Company
Built-in checks on reading and writing, arithmetic operations, tape insertions.

POWER, SPACE AND WEIGHT

Manufacturer
Power, computer 5 to 7 KW
Space, computer 200 cu. ft.
Weight, computer 3,500 lbs.

These figures are for computer complete with control desk and one tape unit.

Industrial Sample
Republic Aviation Corporation
System operates at 7 KW, 7.5 KVA, 0.9 PF, occupies 93 sq. ft., weighs 4,500 lbs. and requires 15 Tons of air conditioning.

PRODUCTION RECORD

Produced 5
Operating 5
Delivery time 6 to 9 Months

COST, PRICE AND RENTAL RATE

Manufacturer
Approximate cost of basic system \$97,000.
Rental rates of basic system \$3,500/Month for complete system, including maintenance.

Government Sample
Griffiss Air Force Base, RADC
This system costs \$90,000 plus \$35,000 for additional equipment.

Industrial Sample
Republic Aviation Corporation
The approximate cost of basic system was \$135,000 and additional equipment was \$10,000.

PERSONNEL REQUIREMENTS

Manufacturer	Engineers	Tech and Operators
Daily Operation		
One 8 Hour shift	1	1
Two 8 Hour shifts	2	2
Three 8 Hour shifts	3	3

Industrial Sample
Republic Aviation Corporation
For three 8-hour shifts, 3 engineers and 5 technicians-operators are used for maintenance and operation only. This does not include programming.



Picture by Shell Development Company, Exploration and Production Research Division

RELIABILITY AND OPERATING EXPERIENCE

Manufacturer

Operating ratio (Good/Attempted to run) 0.90 to 0.95
 Figures based on eight month period.

Above up-times (machine time available for problem work divided by total time) reported for 5 ELECOM 120 Computer installations. At one location, up-times of 100% and 99.9% were obtained for two successive months.

Government Sample

Griffiss Air Force Base, RADC

Good Time	4,185 hours
Attempted to run time	4,500 hours
Operating ratio (Good/Attempted to run)	0.93

Figures based on period March 1955 to November 1956.
 Acceptance test March 1955.

Industrial Sample

Republic Aviation Corporation

Respectively as above, 471.4 hours, 519.7 hours, 0.927, 1 October 1956 to 31 October 1956. System accepted in January 1954.

Shell Development Company

Average error free running period is 10 hours. Respectively as above, 375 hours/month, 25 hours/month, 0.94, April 1954 to October 1956. System accepted 15 April 1954.

INSTALLATIONS

Redstone Arsenal
 Huntsville, Alabama

Rome Air Development Center
 Griffiss Air Force Base
 Rome, New York

Republic Aviation Corporation
 Farmingdale
 Long Island, New York

Shell Development Laboratories
 Houston, Texas

Westinghouse Electric
 Aviation Gas Turbine Division
 Kansas City, Missouri

Sandia Corporation
 Albuquerque, New Mexico

ADDITIONAL FEATURES AND REMARKS

Industrial Sample

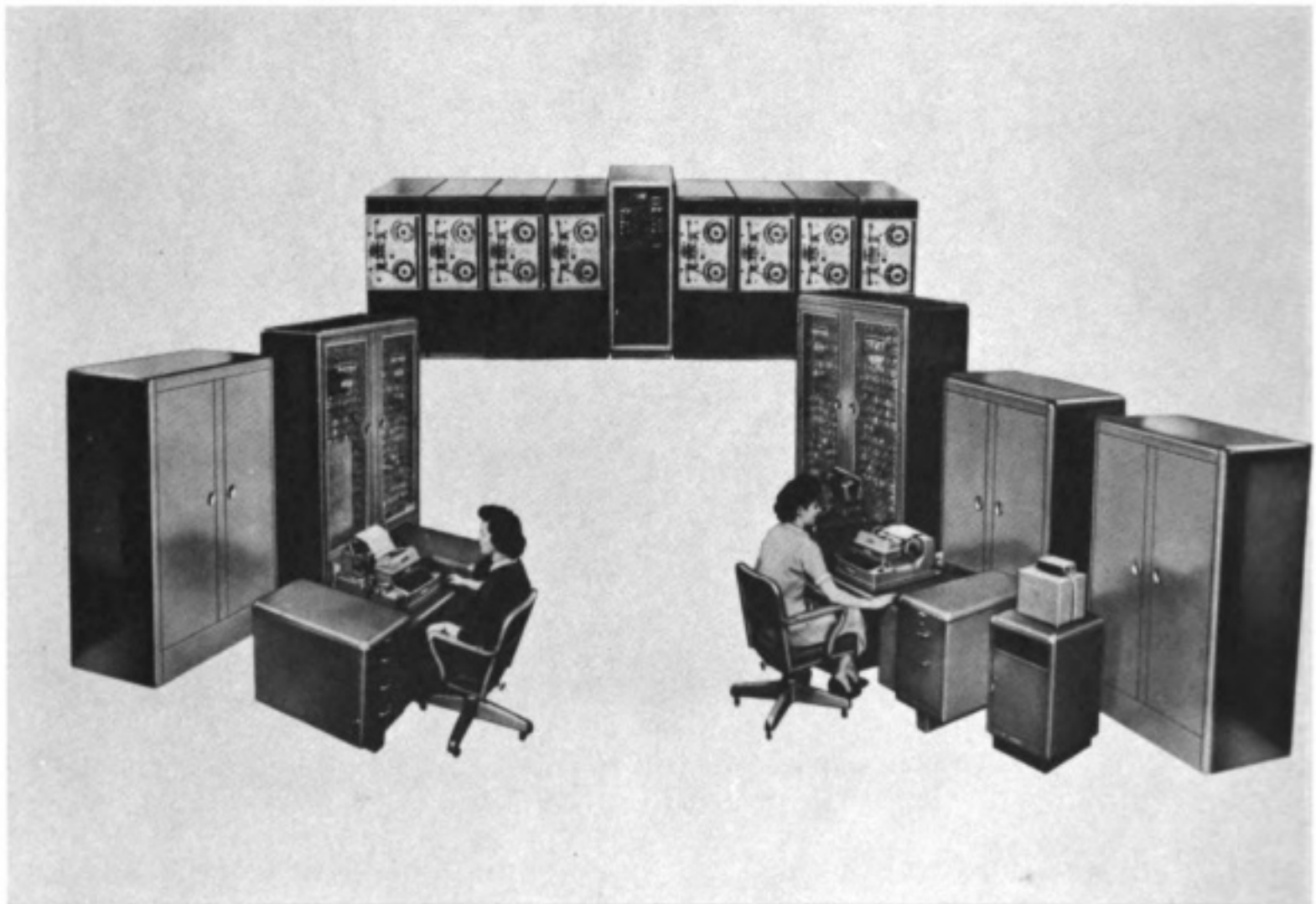
Republic Aviation Corporation
 System has one 4-digit base register.

ELECOM 125 125FP

MANUFACTURER

Elecom Type 125 Computer and Elecom Type 125 File Processor

Underwood Corporation
Electronic Computer Division



Picture by Underwood Corporation, Electronic Computer Division

APPLICATIONS

Manufacturer

Commercial, engineering and scientific. The Elecom 125FP is primarily commercial.

Industrial Sample

Sandia Corporation
Scientific applications.

NUMERICAL SYSTEM

Internal number system	Decimal
Decimal digits per word	10 and sign
Decimal digits per instruction	10
Instructions per word	1
Instructions decoded	36
Instructions used	36
Arithmetic system	Floating and fixed
Instruction type	Two address

Number range

Coefficient range $-(1-10^{-8}) \leq c \leq (1-10^{-8})$

Exponent range $-50 \leq e \leq 49$

Fixed point range $-(1-10^{-10}) \leq n \leq (1-10^{-10})$

Floating point is optional at extra cost and is additional to fixed point. Fixed point is standard. The Elecom 125FP utilizes 2 decimal dig/alpha char. It operates on "Items" containing any integral number of words. Fixed program, switch-selected; sequence, collate, select, collate and select, separate, and substitute. The following combinational operations are available as an option: Select-separate, collate-separate, substitute-separate, collate-select-separate.

Industrial Sample

Sandia Corporation

Of two systems, one has a floating point, both have fixed point.

ARITHMETIC UNIT

	Microsec
Add time (exclud. stor. access)	330
Mult time (exclud. stor. access)	18,300
Div time (exclud. stor. access)	18,700
Construction	Vacuum tubes
Rapid access word registers	3
Basic pulse repetition rate	132 Kc/sec
Arithmetic mode	Serial
Timing	Synchronous
Operation	Sequential

Above operation time is based on average 10 decimal digit multiplier, dividend and divisor.

Industrial Sample Sandia Corporation		Microsec
Add time (includ. stor. access)	4,000 to 10,000	3,500
Add time (exclud. stor. access)	50 to 100	330
Mult time (includ. stor. access)		22,000
Mult time (exclud. stor. access)		18,000
Div time (includ. stor. access)		22,000
Div time (exclud. stor. access)		18,000

The above figures are obtained for 10 digit numbers.

STORAGE

Media	Words	Microsec Access
Magnetic Drum	4,000 to 10,000	8,300 Avg
Magnetic Drum	50 to 100	1,670 Avg

Main storage operates on a single head per channel basis. The rapid-access storage is a recirculation channel. The Elecom 125 FP has a 100 word acoustic delay line.

INPUT

Media	Speed
Typewriter	8 char/sec and Manual
Paper Tape	8 to 400 char/sec
Magnetic Tape	6,000 char/sec
Cards (IBM 528 or similar)	

The typewriter is standard equipment. The high speed tape reader and punched card unit is optional. Magnetic tape synchronizing circuits and controls are included as standard equipment. The Elecom 125 FP unit is utilized in conjunction with magnetic tape and typewriter. The typewriter and punched paper tape are used for checking and control.

OUTPUT

Media	Speed
Typewriter	8 char/sec
Paper Tape	8 or 60 char/sec
Magnetic Tape	6,000 char/sec
Cards (IBM 523)	
Tabulation (IBM 407)	

Typewriter is standard equipment. High speed paper tape and card equipment are optional.

CIRCUIT ELEMENTS ENTIRE SYSTEM

Manufacturer	
Tubes	450 for ELECOM 125; 250 for 125 FP
Diodes	2,500 for ELECOM 125 FP

95% of the tubes are of 2 types.

Industrial Sample
Sandia Corporation

Each system utilizes 481 tubes and approximately

4,000 diodes. Tube types used are the 6CL6, 12AT7, 5687, and the 5670.

CHECKING FEATURES

Manufacturer
Fixed

Internal check for forbidden pulse combinations
Check of drum writing circuits
Parity check on tape with automatic re-read.
The Elecom 125 FP makes a parity check on all data.

Industrial Sample
Sandia Corporation

Magnetic tape circuits contain check to determine if block read contains same number of digits as block contained when written. Automatic re-read takes place if error is detected. The storage signals are continuously monitored for forbidden combinations.

POWER, SPACE AND WEIGHT

Power, computer	5-7 KW
Space, computer	400 cu. ft.
Weight, computer	4,000 lbs.
Capacity, air cond.	5 Tons

Space and weight figures are for computer (complete) with control desk and three tape units. Room air conditioning is recommended. No built-in air conditioning is supplied with system. Elecom 125 FP requires 7 KW and occupies 200 cu. ft., including control desk and 5 magnetic tape units. Five Tons of room air conditioning is recommended. No built-in air conditioning is supplied with system.

Industrial Sample
Sandia Corporation

System requires 7 KW. System operates on normal room conditioner only. Space requirement is 151.2 cu. ft. and 26.64 sq. ft. Dimensions are:
Main Computer Cabinet 72 in. by 24 in. by 78 in.
Storage Cabinet 44 in. by 24 in. by 61 in.
Power Supply Cabinet 44 in. by 24 in. by 61 in.

PRODUCTION RECORD

	Elecom 125	Elecom 125 FP
Produced	5	1
In production	1	1
Operating	5	1
On order	2	1
Delivery time	12 to 18 Months	6 to 9 Months

COST, PRICE AND RENTAL RATE

Price	
Computer only	\$155,000
Computer System with File Processor	\$350,000 to \$450,000
File Processor only	\$ 85,000
Monthly Rental Rate	
Computer only	\$4,185
Computer System with File Processor	\$8,500 to \$9,500
File Processor only	\$2,295

Industrial Sample
Sandia Corporation

Price was \$100,000 each for two systems and \$50,000 for additional equipment.

PERSONNEL REQUIREMENTS

Manufacturer	Engineers	Tech and Operators
Daily Operation		
1-8 Hour shift	1	1
2-8 Hour shifts	2	2
3-8 Hour shifts	3	3

Above figures are the same for the File Processor.

Industrial Sample

Sandia Corporation

Two systems require 2 engineers and 4 tech-operators for one 8 hour shift.

RELIABILITY AND OPERATING EXPERIENCE

Operating ratio (Good/Attempted to run) 0.90 to 0.95
Figures based on an eight-month period.

Above up-times (machine time available for problem work divided by total time) reported for 5 ELECUM 120 computer installations. (Much of the ELECUM 125 internal circuitry is substantially the same as that of ELECUM 120) at one location, up times of 100% and 99.9% were obtained for two successive months.

FUTURE PLANS

Manufacturer

ELECOM Universal Data Converter - A device for transcribing data between ELECOM magnetic tapes and those of other manufacturers. In addition, the converter will be able to handle punched paper tape and punched cards. The converter is designed to make the ELECOM 125 System, or the ELECOM 125 Computer compatible with the input/output from a to any other data processing equipment currently manufactured.

Industrial Sample

Sandia Corporation

Present plans include the addition of approximately 3 more tape units, a line printer and possibly a File Processor.

INSTALLATIONS

Sandia Corporation (2)
Albuquerque, New Mexico

Underwood Corporation (1)
Data Processing Center
New York City, New York

The Texas Company (1)
Houston, Texas

Sylvania Electric Corporation (1)
Waltham, Massachusetts

ADDITIONAL FEATURES AND REMARKS

Manufacturer

Two (2) Four-digit base registers (B-boxes) are included as standard equipment. An important partner in the ELECOM 125 System is the ELECOM File Processor. This is an entirely separate piece of equipment, designed and engineered to handle the sequencing, collating, extracting and similar operations necessary in day-to-day business applications.

The ELECOM File Processor extracts from the voluminous "Library Tapes", the particular items upon which processing is to be done. It is the job of the ELECOM File Processor to pick the pertinent items out of the tape file, so that the associated Computer wastes no time in "searching" through unwanted items. Once the items have been processed by the ELECOM 125 Computer the ELECOM File Processor puts them back into their proper place (in sequence) in the main file.

The picture shows the Elecom File Processor on the left, the Elecom 125 Computer on the right. The Magnetic Tape Units and the Magnetic Tape Inter-connecting panel are in the rear. The Elecom High-Speed Line Printer is not shown.

