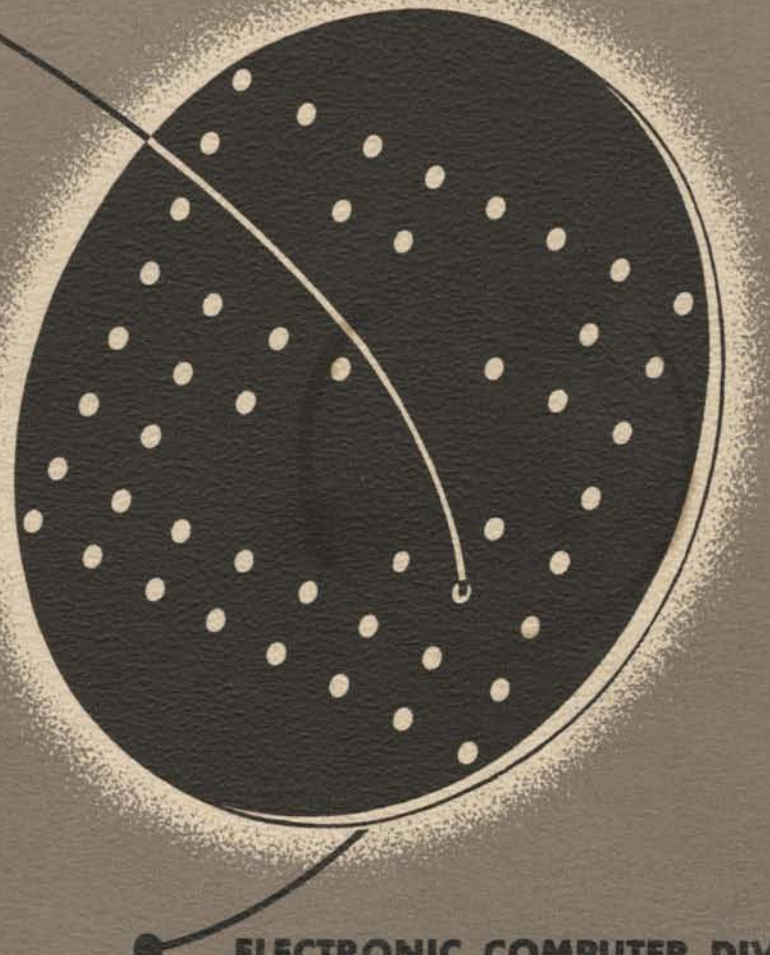
Whirlwind I



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Summary of Whirlwind 1 Specifications

TYPE OF COMPUTER	General purpose, high-speed
DESIGN	Electronic, digital
NUMBER SYSTEM USED	Binary
REGISTER LENGTH (basic)	16 Binary digits
METHOD of HANDLING NUMBERS	Parallel digit transmission, addition, and storage
TYPE of INTERNAL STORAGE	Electrostatic storage tubes
CAPACITY of INTERNAL STORAGE	Initially 256 registers; when complete, 2048 registers
ACCESS TIME to INTERNAL STORAGE	Initially 25 microseconds; when complete, 6 microseconds
BASIC FUNCTIONAL DESIGN	0.1-microsecond pulses, representing instructions or numbers, are distributed via gate tubes, which pass pulses only when a coincidence signal from a memory device, such as a flip-flop, is present
PULSE REPETITION FREQUENCY	2 megacycles in arithmetic element, 1 megacycle elsewhere

ADDITION TIME (in microseconds)

To add two numbers already in the arithmetic element	2
To get one number from storage and add it to one already in the arithmetic element — Initially 60, goal	24
To get two numbers from storage, add them, and to transfer the answer to storage — Initially 180, goal	72

AVERAGE MULTIPLICATION TIME, INCLUDING ROUNDOFF (in microseconds)

To multiply two numbers already in the arithmetic element	20
To get one number from storage and multiply it by one already in the arithmetic element — Initially 75, goal	39
To get two numbers from storage, multiply them, and to transfer the product to storage — Initially 195, goal	87

INPUT AND OUTPUT	Typewriter, perforated paper tape, magnetic tape, magnetic drum, oscilloscope display
ERROR DETECTION	By built-in identity checks and miscellaneous alarms
TROUBLE LOCATION	By automatic marginal-checking system which locates deteriorating components during test periods