ANNOUNCER: With the new plats and emissions now under construction, Alcoa's annual production will be raised to 1 billion 300 million pounds, four times as much as 1939. In this way, Alcoa continues to meet its responsibility as the leading producer of a vital metal, aluminum, by Alcoa Aluminum Company of America.

EDWARD R. MURROW: These are days of mechanical and electronic marvels, and the Massachusetts Institute of Technology has developed a new one for the Navy. It's a Whirlwind electronic computer. With considerable trepidation, we undertake to Interview this new machine. Now to MIT and the computer lab at Cambridge, MA.

Hello New York. Hello New York. This is Cambridge, and this is the oscilloscope of the Whirlwind electronic computer.

EDWARD R. MURROW: I assume that like any delicate finely tuned piece of mechanism this has a human element involved too has it?

JAY W. FORRESTER: Yes Mr. Morrow. I am Jay Forrester, Director of the Digital Computer Laboratory where Whirlwind was built.

EDWARD R. MURROW: Well, I wonder if we could take a look around, Sir.

JAY W. FORRESTER: Yes, let's first look at one of the storage tubes such as Whirlwind uses for memory. Whirlwind stores in these tubes information in 25 millionths of a second, and further down the row you see some of the electronic circuits, which make Whirlwind word. Would you like to try to use the machine?

EDWARD R. MURROW: Yes of course. But I have an idea, Mr. Forrester. Since this computer was made in conjunction with the office of Naval research, why don't we switch down to the Pentagon in Washington and let the Navy's research chief, Admiral Bolster give Whirlwind the work out. What's your problem Admiral?

ADMIRAL BOLSTER: Well Ed, this problem concerns the Navy's Viking rocket. This rocket goes up 135 miles into the sky. Now at the standard rate of fuel consumption, I would like to see the computer trace the flight path of this rocket and see how it can determine, at any instant, say at the end of 40 seconds, the amount of fuel remaining and the velocity at that instant. The rocket weighs 11,000 pounds at takeoff and carries an initial fuel load of 8,500 pounds.

EDWARD R. MURROW: All right, Mr. Forrester.

JAY W. FORRESTER: All right Admiral Bolster, we'll see what we can do. Let's look at the oscilloscope where the problem has been set up. Over on the left hand side you will notice fuel consumption decreasing as the rocket takes off, and on the right hand side there's a scale that shows the rocket velocity. The rocket position is shown by the trajectory that you're now looking at and as it reaches the peak of its trajectory, the velocity you will notice has dropped off to a minimum. Then as the rocket starts down, velocity picks up again toward a maximum velocity when the rocket hits the ground. How's that?

EDWARD R. MURROW: What about that Admiral?

ADMIRAL BOLSTER: Looks very good to me.

EDWARD R. MURROW: Well, Sir, I'm just a middle man here. I didn't understand the question, and I don't understand the answer. But now let's go back to MIT for a moment. Are you there Mr. Forrester?

JAY W. FORRESTER: Yes, Sir, Mr. Murrow.

EDWARD R. MURROW: Well, let's try another problem on a little more personal level. Let's suppose that back in 1626 I have been and Indian and I had received, for the sale of Manhattan Island, say $24. And if I've been out covering a story for TV and then I'd invested that $24 at 6% interest back and 1626, what would I have today?

JAY W. FORRESTER: Well, that would be a good in investment. To set up with your problem on the machine, we first have to prepare a control base, something like this where the information from the machine has been punched in. That tape is entered into the computer as you can see over here and fed into the storage tubes in the other room where the information is remembered until the machine starts a solution to the problem. Now the machine started the solution. We see it here typing out the answers on the typewriter. From 1926 until 1951, your $24 would have drawn to something like $4,027,727,000 and some odd cents. Do you think that would be a good investment?

EDWARD R. MURROW: Thank you, Sir, very much indeed. Some day I'll ask you to figure out whether that is before or after taxes. Very fascinating Mr. Forrester.

JAY W. FORRESTER: Very good to have had you with us, Mr. Murrow, and before leaving, we would like to show you another kind of mathematical problem that some of the boys have worked out in their spare time in a less curious vein for Sunday afternoon.

[DIGITAL MUSIC]

EDWARD R. MURROW: Thank you very much indeed, Mr. Forrester and the MIT Lab. This next story is an American story. So American that it could only happen in Korea, Italy, Germany, France, anywhere in the world where American fighting men have gone. In this time when we're worried about international crises and new electronic brains and tax scandals and peace conferences at Panmunjom , we thought it might be useful to picture a piece of invisible equipment that is carried in the packs of American GI's. They called it Operation Mascot.

[CHILDREN SINGING]