

When You Dial Ext. 500, The Tape Begins to Roll

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Washington Post 12 MAY 74
FILED W/GATE

Washington

LIKE the Watergate break-in itself, President Nixon's latest crisis — publication of his recorded conversations — began with the deft work of men trained in the dark art of wiretapping and bugging.

They moved in some time before Feb. 6, 1971, working first in the Oval Office, where they placed a tap on the President's telephone — Extension 500 — and planting seven hidden microphones around the room.

Next, the team of Secret Service personnel, under Raymond C. Zumwalt, moved on to the President's other office in the Executive Office Building, bugging the room and tapping the phone, Extension 504.

The Cabinet room was bugged with a different system and another tap was placed on the phone in the Lincoln sitting room in the White House's family quarters.

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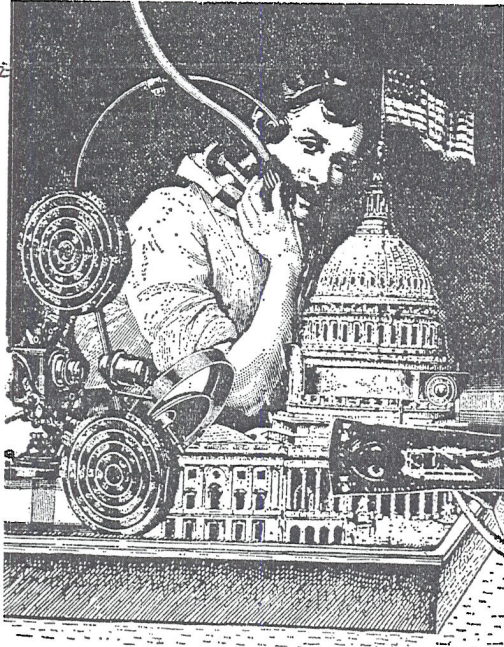
THE SYSTEMS, three in number, incorporated a lexicon of exotic terms — mixer, voice activator relay, automatic gain — and worked along principles seemingly lifted from a spy thriller. The telephone tap, for instance, was triggered when the President lifted the receiver, reducing the voltage from 49 to 12 volts.

Yet for all the electronic hocus-pocus, the technicians — Zumwalt, Charles Bretz and Roger Schwalm — turn out to be suburbanites who are technicians, not agents, for the Secret Service, and the equipment they used was of the type that might be found in the den of a hi-fi buff of limited means.

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AT ITS HEART was Sony 800-B tape recorder that retailed at the time for a modest \$199 and was taken from the White House stock. Along with the Uher 4000 used by the President's secretary, Rose Mary Woods, to transcribe the tape with the 18½ minute gap, the Sony was the basic White House tape recorder at the time.

The Sony, the machine that recorded the presidential conversations until the system was disconnected July 18, 1973, was described by one Washington area



acoustical expert as a "middle-quality device — not a professional machine."

"It is hardly the type of equipment one would expect the President of the United States to use," said Ed Myer, president of Myer-Emco and a member of the Acoustical Society of America.

Similarly, another sound specialist — and a sometime surreptitious eavesdropper himself — San Francisco private detective Harold Lipset, characterized what is known of the system as "adequate, but not professional."

Lipset, the onetime chief investigator for the Senate Watergate committee and a technical consultant for the movie on bugging called "The Conversation," blamed the Secret Service technicians, their equipment, their technique and their apparent attempt to economize on tape.

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IN ALL RESPECTS, Lipset said, the presidentially authorized system to bug the White House in no way compared to the bugging devices found at the Watergate. Lipset called the Watergate setup a fine, professional job that used the most advanced equipment.

Presidential counsel James D. St. Clair admitted that the White House did not use the latest in audiotape technology to attempt to enhance the sound quality of the tapes: "No, we don't have such technology available to us," he said.

THE WHITE HOUSE has turned away all questions about the system's technology, or even what tape machines were used to transcribe the tapes. Here, though, is what is known about the White House tapping and bugging system:

The three presidential telephones were tapped off the White House switchboard. When the President lifted a receiver, the telephone's voltage dropped from 49 to 12 volts, activating the tapping system.

All three telephones were recorded by a single Sony 800-B tape recorder that was located in a small room in the White House. The tapes, which could record six hours of conversation, were changed daily by the Secret Service, except on weekends.

The bugging system was more complex. Five microphones were installed in the President's desk and two on a lighting fixture to the rear of the office. Informed sources said the microphones were planted under the trim of the desk and were located to pick up the voices of persons sitting on either side, or at the corners.

The microphones fed sound to a mixer, a device that took the sound from each microphone and ran it to a central output — the voice-activated relay that turned on the tape machines whenever someone started speaking.

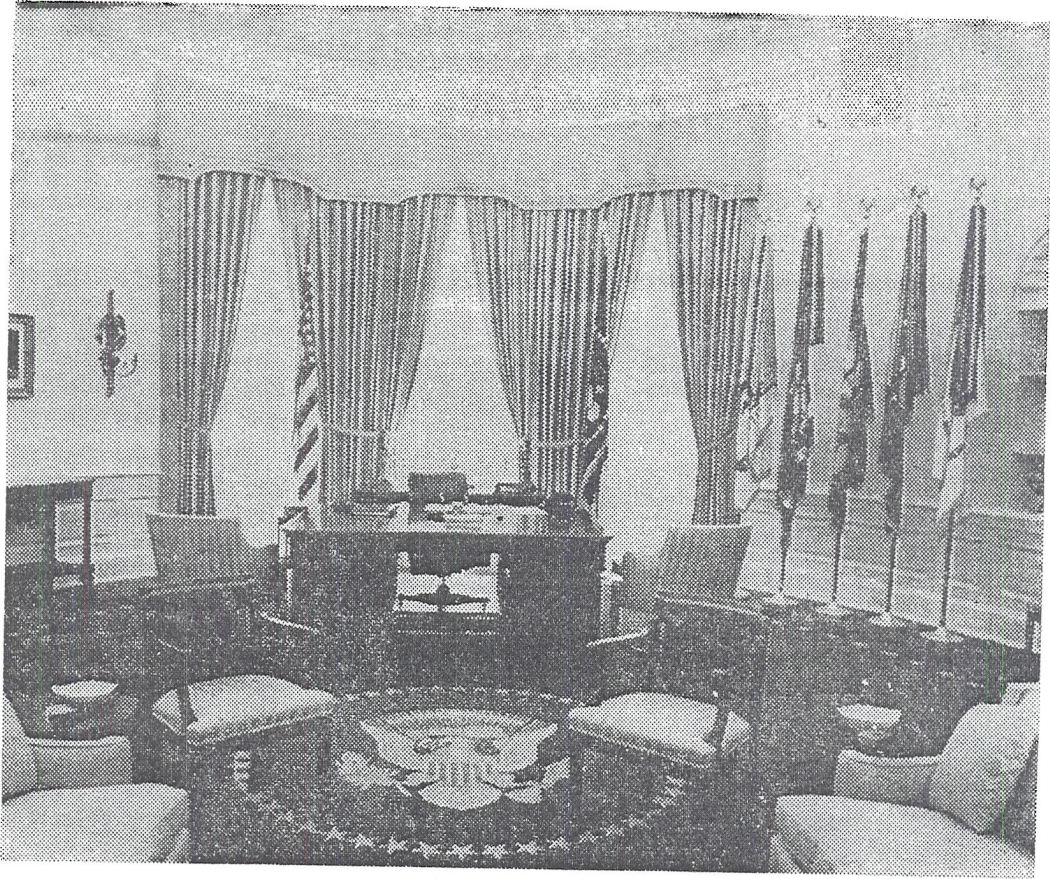
The system was triggered by a device called the "family locator," which kept track of Mr. Nixon's position in the White House compound and powered the bugging system in his locale.

However, the Sony recorders would operate only with a signal from the voice-operated relay. According to Myer, the Sony recorder would require anywhere from one-quarter to one-half a second before it would reach its recording speed, 15/16ths of an inch of tape per second.

That speed, according to Myer, is no good for high fidelity, but adequate for recording voices. On a Sony 800-B that speed would probably result in a loss of high frequency sounds, which help determine what words have been spoken, he said.

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ANOTHER WEAKNESS in the system, according to sound experts, was the use of monaural or single-track tape.



Seven hidden microphones were planted around the Oval Office

Had a more sophisticated tape recorder been used along with four-track tape, every voice could have been recorded on a different track and conversations would not have been as jumbled or unintelligible.

Sound from the Oval Office was fed to two Sony 800-Bs that were kept in a small room in the West Wing of the White House. There was another recorder there for the telephone system, one for the bugging system in the Cabinet room, and one spare.

The two Oval Office machines were controlled by a timer, which automatically switched the system from one machine to another some time between 11 p.m. and midnight.

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THE PRESIDENT did not use his office in the Executive Office Building as frequently as he used the Oval Office, and it was not as thoroughly bugged. There, according to sources, only two microphones were planted — one in Mr. Nixon's desk and the other on a couch or chair to the rear of the room.

A different system was used in the Cabinet room. No voice activator was employed and the system had to be turned on manually. Of the three, that system reportedly functioned the most poorly.

In the Oval Office and the President's office in the Executive Office Building, prolonged use of the equipment over a

weekend would cause the system to run out of tape.

The automatic timer would then switch back to a machine that had already done its six hours worth of recording and would then start over, erasing what it had already recorded.

It is not known what sort of microphones were used or what the quality of the voice activator was. But assuming that they were of similar quality to the heart of the system — the Sony 800-B — the system appeared adequate to its task, in the view of sound experts, and may not have cost the taxpayer more than \$2000 in equipment.

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"I SHOULD have worked fine," said Lipset, the West Coast private detective who developed the now-famous martini olive bug.

He said he would have done away with the voice activator and just let the tape recorders run. "Tape is cheap," he said. "I would have let the tapes run and I would have used eight-hour tapes.

"I would have used a minimum of four mikes with each mike going to a separate (tape) track," he said. "One track would be a continuous time signal."

His idea would have cost more.

"If you were really going to do it all the way, maybe ten to 15 grand," Lipset said. "I'd want to go first cabin all the way."