

Sirica Gets White House Tape Recorders; Panel to

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WASHINGTON, Nov. 29—Nine tape machines that were used for recording President Nixon's White House conversations have been surrendered to Chief District Judge John J. Sirica's court, at the request of the special Watergate prosecutor's staff.

The machines were not covered in the subpoena of tapes of nine Watergate-related conversations, to which Judge Sirica will listen after a check of "authenticity and integrity" by an advisory panel that is expected to begin work next week. Tape experts said today that use of the machines that made the recordings would be vital to the panel's work.

Not turned in at the same time were the microphones used to pick up voices in the Oval Office of the White House, the President's office in the Executive Office Building and in the Cabinet Room of the West Wing of the White House.

The poor quality of tapes recorded on these machines "surprised" Alexander P. Butterfield who testified today before Judge Sirica. It was Mr. Butterfield, a former White House aide who is now director of the Federal Aviation Administration, who disclosed the existence of the White House taping system to the Senate Watergate Committee last July.

The microphones used to pick up voices in the Oval Office in the White House, the President's office in the Executive Office Building and in the Cabinet Room of the West Wing of the White House were not turned in with the machines.

A spokesman for the Watergate prosecutor's staff said the microphones had been omitted from the courtroom request for the tape machines because it was thought better to leave the microphones in place. The spokesman declined to elaborate.

'Agreement of Counsel'

The letter of transmittal accompanying the machines, which have not yet been given official exhibit numbers, was

signed by Richard A. Hauser of the White House staff. The letter notes that the surrender of the machines was "pursuant to agreement of counsel."

The letter, which is included in the ready-reference file of Deputy Clerk James P. Capitonio of Judge Sirica's court, lists the serial numbers of seven Sony tape recorders of the TC 800-B type, the smallest reel-to-reel machine sold by Sony's American subsidiary, Superscope, Inc., and those of two Uher machines.

According to Miss Florence Towers, public relations spokesman at Superscope's Sun Valley, Calif., office, the price of the TC 800-B is \$279.95.

This list price and one of less than \$400 for the Uher equipment implies a total cost of the tape recorders in the White House system of less than \$2,800. President Nixon, in his appearance before news editors near Orlando, Fla., Nov. 17, mentioned a figure of \$2,500.

All the advisers, whose preliminary examination of the tapes is expected to extend into January, have been ordered by Judge Sirica to make no comment on their task.

Machines Could Be Crucial

An expert in a position to comment today was Prof. Barry Blesser of the Massachusetts Institute of Technology, who said "the original machines may turn out to be the crucial issue" in determining whether seven Watergate-related tapes, now in Judge Sirica's custody, were altered anytime after the original recordings were made.

One possible sign of an alteration, Professor Blesser said, would be that a tape contained sections recorded on more than one machine. The experts would want each machine to check if it had been used in a particular recording.

Another question that the experts could hope to answer, Professor Blesser said, was whether there was any evidence of editing. The fact that the White House tape system was designed to operate only in response to noises or voices, and

only when the President was in the room, could help in this task, he said.

Every time the voice-actuated system turned on and off, Professor Blesser said, there would be a small "transient" signal on the tape — a signal that could be lost if there had been editing followed by re-recording.

Analysis of the tapes could also show if microphones had been changed or if environmental changes had been made between one recording and another, Professor Blesser said.

Dr. Leo Beranek, one of the founders of Bolt, Beranek & Newman, an acoustical research company, who is now a Boston television executive, said, "There's always background noise, and a computer program could determine any sudden change in noise."

'Recovery' Called Possible

The techniques of "computer enhancement" of electronic signals, such as those used in extracting as much information as possible from television pictures radioed back from space satellites, said Dr. Beranek, could also be used to attempt to "recover" at least some of the material lost during an erasure such as the one that Miss Rose Mary Woods, the President's personal secretary, said she caused Oct. 1 in one of the Watergate-related tapes.

The chances of success of such a "recovery," according to Dr. Beranek, "depends on the quality of the signal they got in the first place." The obliterated portion of the tape involved in the Oct. 1 erasure, a copy of which was played in court Monday, was virtually inaudible.

The low quality of recording reportedly produced by the White House system should not be attributed to the tape recorders but to the quality and placement of the microphones, according to Martin Camras of the Illinois Institute of Technology Research in Chicago.

Mr. Camras, holder of several basic patents in the magnetic recording field, said he had been involved in an effort to develop a recorder that

would handle conferences involving several people with a single microphone. The effect was unsuccessful, he said.

"If one tries to monitor a conference, he'll be just amazed at how horrible the quality is. It gets to the point of being unintelligible."

For recording conferences, Mr. Camras said, "the only way to do it is separate, closely

Study Them

spaced microphones for each person, and then cautioning people to speak one a time."

With a single microphone particularly one at 15 to 20 feet from those who are conversing, Mr. Camras said, "you just get a horrible jumble of sounds." Such difficulties are magnified, he said, when the microphones are small and hidden.