

Excerpts From Tapes Report and Review of It

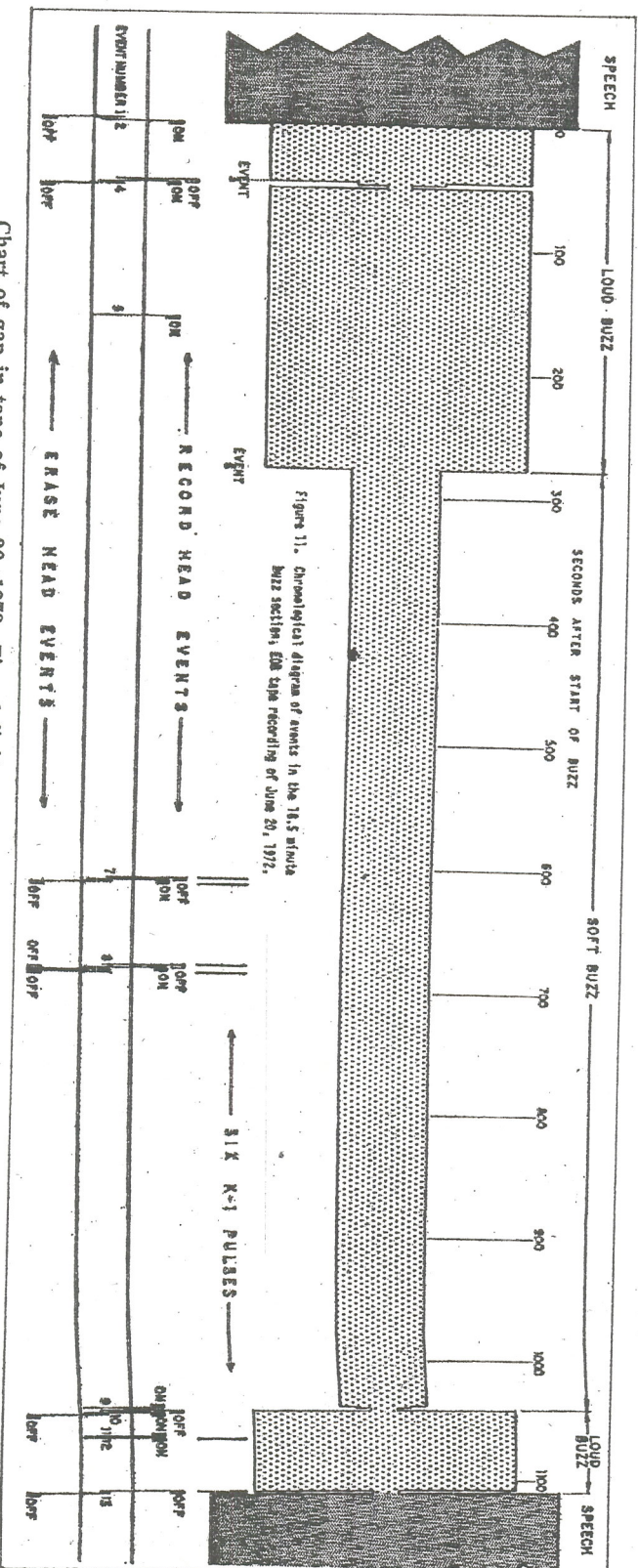


Chart of gap in tape of June 20, 1972. Five definite segments of erasure are outlined by the bottom bars.

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WASHINGTON, June 4— Following are excerpts from the final report of the advisory panel on White House tapes appointed by the United States District Court and a review of that report done for the White House by the Mark R. Weiss. The Stanford report was prepared by Michael H. L. Hecker, senior research engineer at the institute.

ADVISORY PANEL SUMMARY

A tape recording of conversations held on June 20, 1972, in the Executive Office Building contains a section lasting 18½ minutes during which buzz sounds but no discernible speech sounds are heard. This report describes work done to find out what caused the buzz section.

In November, 1973, Chief Judge John J. Sirica of the U.S. District Court for the District of Columbia appointed an advisory panel of persons nominated jointly by the White House and the special prosecution force, and asked the panel to study relevant aspects of the tape and the sounds recorded on it.

In performing this task the panel has made extensive tests on the tape itself, on electrical signals picked up from the tape, and on recording equipment that was used or might have been used in recording the speech and buzz sounds on the tape. Through analysis of the tests results and simulation of alternative ways in which the buzz section might have been produced, the panel has arrived at a single explanation that accounts for the buzz section observed on the evidence tape.

The panel found no basis for doubting the authenticity of the speech recording. The recording appeared to be an original one made on a Sony 800E recorder, the type reportedly used in the Executive Office Building. The tape showed no signs of splicing, tampering, or copying. The buzz section was made directly on this tape, probably the Uher 5000 recorder labeled Government Exhibit 60. The buzz sound probably originated in electrical noise on the electric power line that powered the recorder. Any speech sounds previously recorded on this section of the tape were erased in conjunction with the recording process, as is normal in recorders of this kind. The erasure is so strong as to make recovery of the original conversation virtually impossible.

The buzz section, which sounds much the same throughout, contains many "events" such as clicks, pops, changes in loudness, and gaps with no sound. The panel traced most of these events to specific operations of electrical and mechanical elements of the recorder. This information together with data on the tape motions and recorder characteristics enabled the panel to infer things that must have been done with the recorder to produce the events observed on the tape. No explanation of the buzz section based on malfunction of the recorder can account for the entire set of observed data and the patterns they form. The only completely plausible explanation found is one that requires keyboard operations of a normally operating machine. Five or more sets of such operations are involved in the explanation.

This report draws no inferences about such questions as whether the erasure and buzz were made accidentally or intentionally, or when, or by what person or persons. The report does provide a solid basis in experimental fact for concluding that the erasure and the recording of buzz required several operations of the pushbuttons on the control keyboard of the Uher 5000 recorder.

How We Found Out What Happened

To determine how the buzz section of the evidence tape of June 20, 1972, was produced, we examined the tape and made careful measurements at many points on it, paying special attention to places where we heard clicks, gaps, or other significance changes in the buzz.

We then examined the recorders and other equipment

that was supplied to us and made experimental recordings with them to check their various functions and characteristics. When our tests and measurements were completed, we compared the data obtained from the evidence tape with data obtained from our experimental recordings. We looked for similarities and differences, to help us identify the machine functions that could have produced each of the transient events on the evidence tape. When we found events on the two tapes that seemed distinctive and very much alike, we assumed, as working hypothesis, that the event on the evidence tape had been made in the same way as the one that we ourselves had made on the experimental tape.

The process described above—examination of the evidence tape and simulation of operations on the Exhibit 60 Uher—yielded tentative explanations for the source of each event on the evidence tape. However, it did not exclude the possibility that an event might have been made in a different way. So we looked for as many potential explanations as we could think of, considered them carefully, and, on the basis of our data, either accepted them as viable alternatives or rejected them. We used several methods to evaluate alternative explanations:

We checked potential explanations against measurements and known facts;

We made additional measurements on the tapes and equipment in order to get additional clues and insights;

We looked for combinations of events that would rule out certain alternative explanations.

Combinations of events, rather than a single event by itself, often provided the most effective means of reducing the number of alternative explanations. Indeed, events in combination provide the firmest basis for rejecting a much-discussed hypothesis that the buzz section might be explainable in terms of recorder malfunction. Furthermore, combinations of events support most strongly the explanation of the buzz section in terms of multiple operations by hand of a Uher-5000's control keys.

In summary, the procedure followed by the panel in determining how the buzz section of the tape was produced consisted of three levels of inquiry:

1. What is on the tape?

This question required our making careful measurements at each event on the tape, that is, at each point where there was an audible change in the character of the recording.

2. *What machine functions produced each event on the tape?* At this level of inquiry, we sought to identify electrical processes and components in the recorder that could be associated with each event. We compared the data from measurements on the evidence tape with data obtained from test recordings made of several Uher 5000 recorders, particularly the one labeled Exhibit 60.

3. *What actions initiated the machine functions?* The action that initiated the production of a particular event could be a human operator action or the result of a machine malfunction. We proposed trial explanations of how the machine functions that we related to each event might have been initiated. We evaluated these explanations by the use of the methods described earlier.

Clearly, facts and a tight logical structure are needed to support conclusions regarding how the buzz section of the evidence tape was produced. The factual basis for identifying events on the tape, the testing of potential explanations of the events, and the combining of events to derive logically necessary conclusions form the essential contents of this report.

Derivation of Conclusions

As pieces of factual information accumulated, we began to see how they might fit together to form answers, or at least trial answers to some of the questions. In turn, the trial answers or hypotheses suggested further tests and analyses required for confirmation. Through

many rounds of test, hypothesis, and test again, we converged upon a single, self-consistent set of results, which we express in the form of seven conclusions:

1. The erasing and recording operations that produced the buzz section were done directly on the evidence tape.

2. The Uher 5000 recorder designated Government Exhibit 60 probably produced the entire buzz section.

3. The erasures of buzz recordings were done in at least five, and perhaps as many as nine, separate and contiguous segments.

4. Erasure and recording in at least five places on the tape required hand operation of keyboard controls on the Uher 5000 machine.

5. Erased portions of the tape probably contained speech originally.

6. Recovery of the speech is not possible by any method known to us.

7. The evidence tape, insofar as we have determined, is an original and not a copy.

Explanation of the Buzz Section

These seven conclusions, which we first reported to the court on Jan. 15, 1974, fit together to form a single, consistent explanation of the buzz section on the EOB tape of June 20, 1972:

The erasure of the 18.5 minutes of speech and concurrent recording of buzz in its place was done on a Uher 5000 recorder, probably the one labeled Government Exhibit 60. The recording was started and stopped several times by the pushing of keys on the keyboard of the machine. Sometimes the tape we repositioned backward or forward by a small amount before recording was resumed. The buzz sound probably originated in hum and noise derived from the power line that supplied electrical power to the recorder.

When viewed apart, from the total body of data, certain individual marks on the evidence tape might be accounted for in ways other than we have described. However, only one explanation, the one given here, accounts for the data in their entirety and the patterns they form. Every possible alternative that we considered, including those proposed by other persons, ignores one or more vital aspects of our total findings. Our confidence in the seven conclusions is based on the plausibility and self-consistency of the explanation, the thoroughness of the tests and analyses, and the failure of any other alternative known to us to yield a factually coherent and complete account.

STANFORD GROUP SUMMARY

We are in general agreement with the panel's report, but we disagree with the panel's treatment of an underlying issue. The substance of our disagreement is that the panel finally and irrevocably dismissed the possibility that a faulty machine was involved in producing the erasure on the evidence tape.

We believe that the Uher 5000 tape recorder designated Government Exhibit 60 was electronically faulty at the time when the erasure was produced. In our opinion, it is still possible that some internal malfunction of the machine, although undermined and unexplained by the panel and SRI, could have been partly responsible for the 18.5-minute erasure on the tape of June 20, 1972.

Introduction

This document is a review of a report entitled "The Tape of June 20, 1972," which was submitted to the United States District Court for the District of Columbia by its advisory panel on White House tapes. The panel's report describes a technical investigation that was conducted to determine the cause of an 18.5-minute erasure contained in the Presidential tape of June 20, 1972.

On May 4, 1974, we received the draft of May 3, 1974, of the panel's report and were asked by Mr. St. Clair to prepare a written review. We submitted our re-

view of the draft on May 10, 1974. On May 13, 1974, the court held closed hearing with representatives of the White House, the office of the special prosecutor, the panel, and SRI in attendance. The court decided that the panel's report, as well as SRI's review of this report, could be made public.

The Panel's Conclusions

In our report of May 10, 1974, we indicated that we were in agreement with conclusions 1, 2, 3, 5, 6, and 7 and that we had a reservation about conclusion 4. (Erasure and recording of each segment required hand operation of keyboard control on the Uher 5000 machine). Our concurrence with six of these conclusions was based on our knowledge of the panel's work. The experimental methodology used by the panel was appropriate for the collection of relevant and reliable data. The analysis and interpretation of these data were performed with skill and professional competence.

We were uncomfortable with the degree of certainty expressed in conclusion 4. This conclusion implied that all segments of the erasure were necessarily the result of manual operation of the keyboard controls. Our reservation about this conclusion was based on our belief that the tape recorder in question was electronically faulty at the time when the erasure was produced.

Our report of May 10, 1974, was made available to the panel during the court's hearing on May 13, 1974. The panel agreed with us that conclusion 4 was too strong and announced to the court that it would therefore reword this conclusion as follows:

"Erasure and recording in at least five places on the evidence tape required hand operation of keyboard controls on the Uher 5000 machine."

The panel held to its position that faulty operation of the machine was not materially involved in producing the erasure on the evidence tape.

Possible Machine Malfunction

We still believe that the Uher 5000 tape recorder designated Government Exhibit 60 was electronically faulty at the time when the erasure on the evidence tape was produced. It is our opinion that this particular machine did not perform in accordance with all of the manufacturer's specifications. Because a faulty machine can produce some marks that are similar to those observed on the evidence tape, we feel that possible internal malfunction while developing an explanation for the 18.5-minute erasure. The panel, however, categorically rejects any hypothesis based on internal malfunction.

We find it somewhat un-

reasonable to reject all hypotheses involving a faulty, and therefore possibly illogical machine, even though a few hypotheses of this kind have been formulated, tested, and rejected by the panel and by SRI. While the hypotheses that have come to the attention of the panel and SRI have been disproved when scrutinized theoretically or experimentally, it is still possible that an acceptable hypothesis can be advanced by other scientists.

We believe that the 30-volt power supply in Government Exhibit 60 was faulty on the time the erasure on the evidence tape was produced. In support of this view, we offer the following evidence:

1. At the beginning of its test program, the panel was able to use Government Exhibit 60 to reproduce the buzz signal contained on the evidence tape. Later on, the machine failed to operate and the trouble was traced to a defective bridge rectifier in the 30-volt power supply. After this component was replaced, this observation suggests that the power supply may have been faulty in some respects when the erasure on the evidence tape was produced.

2. The buzz signal on the evidence tape exhibits several unexplained erratic variations in amplitude. These amplitude variations were probably caused by an intermittent condition in the power supply of the machine.

3. Twelve click marks were found in the evidence tape. The panel mentions these clicks marks in its reports, but offers no explanation as to the origin of these electrical transients perhaps the transients came from the power line, but a more likely explanation is that they were caused directly or indirectly by a faulty power supply in the machine.

Now, if certain intermittent conditions are present in the 30-volt power supply of a Uher 5000 tape recorder, both predictable and erratic switching activities will occur in the control circuits of the machine. Experiments conducted by the panel and by SRI support this statement. Such switching activities may account for some of the marks observed on the evidence tape.

Furthermore, intermittent conditions could well produce transients that either closely resemble, or obfuscate the identification of, so-called K-1 pulses. K-1 pulses are marks produced by an internal switch that is mechanically actuated by most keyboard operations. The presence of a genuine K-1 pulse is interpreted by the panel and by SRI as strong evidence of manual operation of the keyboard controls.