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# memorandum

DATE: May 25, 1993

TO: Judicial Conference Committee on Court Administration And Case Management

FROM: John Shapard

SUBJECT: Evaluation of videotape experiment

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## Evaluation of Experimental Videotaping of Court Proceedings

In an experiment begun January, 1991 and concluded December, 1992, the courtrooms of five U.S. District Judges and one Magistrate Judge were equipped for videotape recording of court proceedings. The experimental courtrooms were equipped and the videotape recording procedures developed under the auspices of the Administrative Office of the U.S. Courts, with major assistance from the National Center for State Courts working pursuant to a contract with the Administrative Office, as well as from the participating judges, court personnel, and vendors of the equipment installed in the courtrooms. The Federal Judicial Center undertook to evaluate the experiment. This is the report of the Judicial Center's evaluation. Recommendations are stated briefly at page 3 and in detail on pages 6 and 7.

The experiment had two distinct components: (1) the use of videotape--rather than audiotape or stenographic recording--as the medium for recording court proceedings, and (2) use of the videotape--rather than a transcript--as the primary medium for reviewing proceedings in the event of an appeal or motion calling for such review. The objective of the evaluation was to assess the success of both components, from the perspectives of a variety of participants in the process: counsel involved in cases with videotaped proceedings, judges presiding over videotaped proceedings, judges hearing videotaped cases on appeal, persons who produced transcripts of videotapes, and support personnel in the district courts who operated and maintained the videotape equipment.

Because the experiment involved only six courtrooms and three appellate courts (with less than all the judges of the appellate courts actually participating),<sup>1</sup> it cannot provide a basis

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<sup>1</sup> Five districts participated in the experiment, with a single courtroom equipped for videotaping in all but the Eastern District of Pennsylvania, with two courtrooms. The U.S. Courts of Appeals for the Third and Fifth Circuits participated by accepting the videotape in lieu of transcript for appeals arising from cases in the Eastern and Western Districts of Pennsylvania, and from the Eastern District of Louisiana and Western District of Texas, respectively. The District Court for

for making highly confident assumptions about how the videotape program would be received were it implemented on a fairly widespread basis. It was a small-scale and relatively short-term test, in which the novelty of the experiment likely influenced the participants' reactions. The evaluation was consequently designed to provide a general assessment of the experience. It was not designed to be a rigorous test, and does not claim to be. Moreover, the evaluation was not intended to provide a basis for comparing the merits of videotape recording to that of stenographic recording. Existing Judicial Conference regulations accept audiotape recording as an alternative to stenographic recording. Because a videotape record includes an audio record, only readily solvable technical reasons would prevent videotape records from being as good as audiotape records. So the focus of the evaluation is on comparison of the video and audio approaches, as alternative means of "electronic sound recording" within the meaning of 28 USC §753(b).<sup>2</sup>

## Evaluation Results

The results of the evaluation are recounted in detail in the appendix. This section provides a summary. The basic results are very clear: there is almost no support for the use of videotape in lieu of transcript on appeal, either from counsel or appellate judges, but there is notable support for use of videotape as a medium for recording court proceedings.

Of the participants responding to our questionnaires, less than 10% of attorneys expressed a preference for use of videotape rather than transcript as the record on appeal (this includes all counsel who participated in a proceeding recorded on videotape; among those who had actually reviewed videotape on appeal, less than 5% preferred videotape rather than transcript on appeal). Among appellate judges, none expressed a preference for videotape rather than transcript, and only about 20% indicated a willingness to accept videotape when desired by the parties to save costs and delay. A majority voiced strong opposition to use of videotape in lieu of transcript. By far the most common objection to videotape was that it is much more time consuming to review a videotape than a transcript. Locating the beginning of the cited portion of the record on tape is time consuming, and reviewing the portion once located is significantly slower than reading a transcript, with long pauses between question and answer a notable annoyance. A number of judges and attorneys expressed the view that videotape might be a viable alternative to transcript given improved technology, principally a means for rapid and precise location of a specified point in the proceedings.<sup>3</sup>

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the Northern District of California served as the participating "court of appeals" for cases heard by the participating magistrate judge from that district.

<sup>2</sup>28 USC §753(b) provides that court sessions "... shall be recorded verbatim by shorthand, ... or any other method, subject to regulations promulgated by the Judicial Conference ... [which] shall prescribe the types of electronic sound recording or other means which may be used."

<sup>3</sup> It should be noted that the participating circuit judges were provided with special playback equipment capable of playing back the videotape at twice normal speed with audio tone compensation (to avoid the "chipmunk" sound of uncompensated high-speed audio playback). These playback machines also have features to permit more rapid location of a specific tape segment than is common on home VCRs. None of the circuit judges mentioned that this

At the same time, at least a majority of counsel and a number of appellate judges expressed enthusiasm for having proceedings recorded by videotape. Two virtues were cited most often:

- (1) videotape recordings provide counsel with inexpensive "daily copy" of trial proceedings (the videotapes, which can be played on standard home videotape recorders, were available for purchase by counsel for \$15 per tape; although review of such a tape is more time-consuming than review of daily copy transcript, the cost is far less than that of daily transcript).
- (2) videotape recordings are useful training tools for counsel, allowing them to review and critique their performance.

## **Implications and Recommendations**

Given the near-absence of interest on the part of counsel and appellate judges in using videotape to review trial court proceedings on appeal, it is recommended that use of videotape as a routine means of reviewing proceedings on appeal be discontinued. Although it is clear that videotape has some advantages over audiotape for purposes of recording trial court proceedings, it is unclear whether the total costs of a videotape system will be more or less than those of an audiotape system. It is recommended that use of videotape to record proceedings be continued on a limited scale to test the feasibility of operating videotape recording at less cost than audiotape recording. A more detailed recommendation is set forth at the end of this section.

## **Cost Considerations**

Uncertainty about the comparative cost of videotape and audiotape recording arises from two factors. First, videotape systems undoubtedly cost more to purchase and install. The audiotape systems now in use in the district courts cost about \$12,000 (about \$5,000 for systems installed in magistrate judge courtrooms). It seems reasonable to assume that a typical district courtroom videotape installation would now cost between \$40,000 and \$80,000.<sup>4</sup> Amortized over a five year equipment life cycle, that amounts to between \$8,000 and \$16,000 per year, or about \$7,000 to \$15,000 more than an audiotape system amortized over the same period.

Balanced against the higher initial cost of a videotape system is the possibility that videotape recording may be able to yield savings in operational costs. The dominant cost of operating an audiotape recording system is the salary and benefits of the operator (referred to as an ECRO, for electronic court recorder operator). The target grade for an ECRO is JSP-8, with a representative salary of \$28,000. Benefits add roughly 28%, yielding a cost to the courts of about \$36,000 per year. In audiotape recording of court proceedings, a detailed written log of the audiotape is made by the ECRO to facilitate transcription in the event a transcript is requested. Without an adequate tape log, it can be very difficult for the person doing the transcription to be certain who is talking at a given time or to locate the testimony of a particular witness when a partial transcript is requested. Maintaining such a detailed log of the tape fully

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equipment had lessened their dislike of videotape review. At the same time, we do not know to what extent the judges employed the advanced features of these playback machines.

<sup>4</sup> The systems installed for the videotaping experiment varied in cost from \$40,000 to \$80,000.

occupies the ECRO during the recording process. Videotape recording does not necessarily require such a detailed log, since the visual part of recording can make it easy for the transcriber to determine who is speaking. The experience with transcription of videotapes, although not uniformly positive, does suggest that a detailed log is not essential to the transcriber, although a well-recorded videotape is essential.

If videotape recording can eliminate an ECRO position or free the ECRO to handle other duties to a significant extent, then the videotape operation might on balance be less costly than audiotape recording. A videotape system that could eliminate an ECRO position would produce cost savings of roughly \$20,000 to \$30,000 per year. In general, we would expect that videotaping will be cost effective if it can save the court the equivalent of between one-half and one-fourth of an ECRO position per videotape courtroom (1/2 for a videotape system costing \$80,000 and 1/4 for one costing \$40,000).<sup>5</sup>

The experiment as carried out provided limited opportunity to assess cost savings, for two reasons. First, the emphasis of the experiment was on avoiding transcription. Second, the experiment required that the court employ its usual recording method (audiotape or stenographer) as a back-up recording to insure against problems should the videotape system fail. For most participating judges, the back-up system was an audiotape system, and the ECRO was thus occupied with maintaining a log for both the videotape and the audiotape backup during court proceedings, precluding any direct test of the feasibility of videotaping without constant attention by the ECRO. Two districts employed a videotape operator in addition to their "backup" (stenographer or audiotape ECRO), but it is not clear whether a "dedicated" operator was necessary for making a satisfactory videotape record in these courts.

Nonetheless, the experiment does provide grounds for optimism that it is feasible to record proceedings by videotape with much less ECRO attention than in the case of audiotape. In the San Francisco courtroom of the participating magistrate judge, the videotape system was managed entirely by the courtroom deputy clerk. This represents a very limited test of an operation in which no ECRO was employed. The courtroom deputy reported that the extra responsibility for the videotaping was generally tolerable but occasionally difficult, owing either to the in-court demands of her regular courtroom deputy duties or to her lack of the technical knowledge to solve problems when they occurred with the videotape system. In addition, the limited experience with transcription of tapes from this courtroom was problematic, in large part because the transcriber did not have satisfactory equipment, but possibly also in part due to inadequate courtroom lighting and consequent poor image quality of the tapes.

The experience in the courtroom of most of the participating district judges was very favorable. In most, the backup record was recorded on audiotape, and the ECRO handled the videotape recording along with his or her usual duties maintaining a detailed log for purposes of the audiotape record. In most instances, the experience with transcription was slightly

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<sup>5</sup> The \$8,000 annual cost of a \$40,000 videotape system amortized over 5 years is roughly 1/4 of the \$36,000 salary and benefits of an ECRO. An \$80,000 videotape system, at \$16,000 annually, represents about half the cost of an ECRO.

unfavorable, due again to the lack of adequate playback equipment.<sup>6</sup> The transcription firm that handled videotapes from the Pittsburgh courtroom had a more favorable experience. Rather than have the tape transcribed in the usual fashion, they simply used a stenographer with computer-aided transcription (CAT) equipment to produce the transcript in "real time" from the videotape. They felt entirely satisfied and did not perceive the task to be inefficient. Indeed, in one case where counsel sought daily copy of a written transcript, they were able to provide the transcript with their usual approach (i.e., without placing a stenographer in the courtroom) simply by obtaining the videotapes of the morning session and beginning transcription of the day's proceedings by mid-day.

These experiences certainly support the possibility that videotape recording without a dedicated operator could be employed at a cost that is competitive with or less than that of audiotape recording; hence the recommendation that further development of videotape recording in the courts be targeted to testing that possibility.

### **Other Considerations**

Although the cost considerations are perhaps the central concern, other possible advantages of videotape recording should be kept in mind. There are a number of possibilities, some arguably tangential but all possibly relevant:

1. First, of course, is that the fact that the visual record of proceedings may in some cases, albeit extremely few, prove valuable. Where conduct must be seen to be adequately appreciated, the videotape will afford a reviewer with such appreciation. Where testimony that is important in an appeal simply cannot be understood without seeing the speaker or the exhibit to which the testimony relates, the videotape will allow the reviewing court to see as well as hear the testimony.
2. Videotape is a more useful training tool for counsel, for several reasons. First, the videotape systems used in the experimental courts all used standard VHS videotapes, which can be played on home (and office) VCRs. Although the courts that use audiotape recording provide standard audiocassette copies of the record for \$15 per tape, counsels' responses to our questionnaire suggest that none were aware of this; they saw videotape as unique in this regard. Moreover, the visual elements of the videotape record are thought to be very significant to counsel as they evaluate the effectiveness and responses of the various actors in a trial. As a training tool, videotape is superior to audiotape.
3. Videotape is valued by counsel as an inexpensive form of "daily copy" that permits nightly review of the proceedings in an ongoing trial. Of course, audiotape systems provide similarly cheap daily copy, but again the visual component of the videotape record is thought to be more informative than a mere aural record of the trial. It is possible that cost savings are realized by

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<sup>6</sup> The principal problem is that the transcribers are accustomed to audiotape systems that have a foot-pedal operated quick rewind to permit review of the last few words so the transcriber can verify a passage about which he or she was uncertain. Existing custom-made videotape systems with similar foot-pedal operations apparently do not work as well or as fast as audiotape machines, so that transcription from videotape took longer than would audiotape transcription. This problem is largely solvable, and the solution will very likely be available if and when there is sufficient demand for videotape transcription.

virtue of the daily copy videotape if review of the tape leads to shorter or otherwise more efficient trials.

4. In a context where videotape has been in common use for a period of time, the accumulation of videotaped records can be a valuable reference library for counsel, often allowing them to assess a witness by reviewing testimony of that witness in a previous videotaped trial (expert witnesses and police officers in particular).

5 Video recording capabilities can rather easily be adapted to allow one to participate in a proceeding by remote television link. With a live video connection between the courtrooms in Pittsburgh and San Francisco, for instance, an attorney in San Francisco could participate in a motion hearing in Pittsburgh. Indeed, the attorney could arrange for such participation from any of a growing number of video conference studios throughout the country, or from his or her own office if so equipped. Whether or not such remote video participation in court proceedings is welcomed, similar remote video "conferencing" is likely to become rapidly commonplace in the business world as the necessary communications capacity becomes widespread and the costs become increasingly attractive as compared to travel expenses. It may well be beneficial for the courts to develop this capability at least on a limited scale, apace with its growth outside the courts.

### **Detailed Recommendations**

Three seemingly reasonable courses of action are available in regard to the future use of videotape recording in district courts: to abandon videotape recording, to accept it as an approved alternative means of recording court proceedings, or to continue it on a limited basis in an effort to develop videotape as a less-costly means of recording court proceedings. Neither alternative is clearly superior, but the third--continued development--is recommended.

It is important to note, however, that at least some of the district judges who participated in the experiment believe that the advantages of videotape recording outweigh the greater equipment cost of videotape as compared to audiotape, and would argue that videotape simply be made an approved method for recording proceedings. The recommendation to pursue more cost-effective use of videotaping is based on uncertainty whether the advantages of videotaping accrue to the benefit of the courts (as opposed to counsel and their clients). But the issue is uncertainty, not disagreement. It is indeed possible that the virtues of videotape records inure sufficiently to the benefit of the courts--by yielding better-trained or better-prepared advocates who conduct better or more efficient trials--to justify the greater costs of operating videotape recording systems with a dedicated ECRO.

To enhance the cost-effectiveness of videotape recording will not be without some initial expense. The aim is to operate videotape recording with little need for operator attention. I outline here a suggested approach, not as a prescription for further testing, but as a starting point for further development in consultation between the participating judges and the court reporting support staff of the Administrative Office.

It is suggested that the experimental courtrooms move quickly to testing of videotape recording with no operator attention other than turning the system on and off as needed, attention to the introduction and marking of exhibits so that the videotape record avoids any confusion in

references to exhibits, assuring that witnesses spell their names for the transcriber, and the like. No log of the videotape would be maintained, an approach which to some extent involves a shift of cost from the courts to parties and transcription services. An ECRO who must be occupied maintaining a log of a videotape recording is providing a service that will be useful only in respect to the minority of court proceedings for which transcription is requested. When the record is a good quality videotape with top-quality audio, the log may be useful only to aid location of the specific portions of the record that are to be transcribed when a partial transcript is ordered. It may well be a reasonable trade-off to impose a modest extra burden on counsel or transcriber owing to the absence of a tape log, in exchange for substantial annual savings of personnel costs for the courts.

Providing videotapes that are optimal for purposes of transcription may require modification of the systems now installed in some courtrooms, to provide the following:

- One or more features that make it clear to the judge, courtroom deputy, and perhaps also to counsel when the system is and is not recording. This will help assure that problems such as failing to start the system or running out of tape are not likely to go unnoticed for long.
- Configuring the videotape systems to operate either with instant switching to the "live" microphone or, for systems that record multiple cameras in separate windows on the television screen, to operate without switching. The systems installed in the experimental courtrooms employ various types of automatic switching, with the microphone of the current speaker determining which camera is the primary one. Some introduce a momentary delay before switching to a new camera, to avoid jumping between cameras caused by extraneous sounds (such as the rustling of papers). For a transcriber's purposes delayed switching seems to create more confusion than it avoids, since the camera may failed to keep pace with a fast exchange of statements or questions and answers . Similarly, systems that simultaneously display more than one camera can confuse the transcriber when the relative location of cameras on screen is switched with changes in the active microphone.
- Improvements may be needed in courtroom acoustics or in microphone equipment or installation. For purposes of transcription, audio quality is of paramount importance. The video quality need be only tolerable to the transcriber, adequate to show whether a pictured actor is speaking and to permit occasional "lip reading" assistance to the transcriber. A spare-almost-no-expense approach to assuring top-quality audio recording is essential.

Finally, further development of videotape systems should involve exploration of--or at least openness to--use of videotape courtrooms for exploring the utility of remote video conferencing in the trial court setting.

## Appendix

### A. Questionnaire to Counsel.

Counsel in cases with videotape recorded proceedings were sent brief questionnaires asking about their experiences with both components of the experiment. Because many attorneys, especially those who prosecute or defend in criminal cases, had repeated involvement with the experiment, we sought to avoid sending multiple questionnaires to individual attorneys. The participating districts and circuits periodically sent us information about proceedings recorded and videotape cases appealed, along with the names and addresses of participating counsel. We periodically reviewed the record of such participation for each attorney, and mailed questionnaires only after the attorney had either participated in at least 10 proceedings recorded on videotape or had not appeared in any new videotaped proceedings in the past three months.

Ultimately, questionnaires were mailed to 919 attorneys who had participated in one or more videotaped proceedings and/or in the appeal of a case with a videotape record. 551 questionnaires (60%) were completed and returned. The questionnaire is reproduced in exhibit A. The results are summarized below. There were no significant differences in the pattern of responses from district to district.

1. Asked if they had encountered any "problems due to failure of or inconvenience associated with the videotape equipment," about 10% gave one of two proffered "yes" answers. About 3% reported some occasion in which there was an equipment problem. This does not mean that equipment problems occurred 3% of the time; most of the respondents had participated in a number of videotaped proceedings, and a single problem in any such proceeding should have elicited a "yes" answer. The 551 respondents had participated in over 1300 videotaped proceedings, and they reported more than minimal inconvenience on only 4 occasions. About 7% indicated that they had experienced some problems associated with the videotape system other than equipment failures; the vast majority of these were regarded as minor problems associated with restrictions on movement of counsel (to assure that they stay within range of microphone and camera) and the care needed to set up exhibits so they would be visible on camera. A few attorneys termed "severe" the difficulties encountered with in-court playback of questions or testimony.

2. A second question asked whether "the **recording** of the proceeding by videotape affected the participants or the interests of the parties, whether positively or negatively?" Less than 10% of the respondents answered affirmatively. Of these, about 40% thought the effects positive (improved behavior on the part of counsel and judge), and about 60% thought them negative (a few thought witnesses were made nervous by the cameras, but most complained about undue formality or "playing to the camera" on the part of counsel and judge).

3. Nearly one third of counsel responded affirmatively to the question, "Have you participated in any videotaped proceedings for which you think it was actually **or potentially** beneficial that the record was videotaped and thus included a visual record?" In explaining their answers, however, most made clear that their affirmative answer was predicated on the convenience of immediate and inexpensive review of proceedings (e.g. the cheap "daily copy" afforded by videotape). Nonetheless, about fifteen percent of respondents indicated that they thought it valuable that the official record be audiovisual, to permit review of credibility, gestures, or demeanor on appeal or motion.

4. Although all questionnaire respondents had participated in one or more proceedings that were recorded by videotape, only about 30% had ever reviewed any of the record of such proceedings

(the average number of proceedings reviewed was 2). About 25% had actually reviewed some of the videotape itself (as opposed to transcript).

5. A key question asked counsel to indicate their preference regarding methods of recording proceedings and the form of the record of proceedings on appeal. Overall, about 10% expressed a preference for "videotape as the official record on appeal," and 60% chose "prefer videotape recording of proceedings, but the record on appeal should be a transcript, with the videotape available to supplement the transcript." 20% expressed a preference for "conventional methods for making the record of proceedings," and the remainder expressed no preference. Among counsel who indicated that they had reviewed videotape in connection with an appeal or motion, only 5% preferred videotape as the record on appeal, and 70% preferred videotape recording with transcript on appeal. 15% preferred conventional methods, and 10% expressed no preference.

### **B. Questionnaire to Appellate Judges.**

A questionnaire was also sent to appellate judges after the conclusion of the experiment. Eighty percent completed and returned the questionnaire, which is included as exhibit B. About 75% of the respondents had reviewed at least one case in which the proceedings were recorded on videotape

1. Among those who had reviewed cases in which the proceedings were recorded on videotape, most recalled having reviewed two or three such cases; the average was 2.5 cases. Most indicated that they had also reviewed at least some transcript prepared from videotape, in 1 or 2 cases (average 1.5 cases).

2. Asked whether it was potentially relevant that the record was visual as well as verbal, 10% answered "yes", all indicating that the visual component of the record was potentially relevant in reviewing demeanor. The remainder of the respondents indicated that the visual component of the record was not potentially relevant.

3. Judges who had reviewed videotape were asked to rate the sound and visual clarity of the videotapes. Nearly 90% rated them "good" or "satisfactory," and the 10 percent rated them "just adequate" or "problematic."

4. Asked which of certain statements best reflected their opinions about reviewing videotapes, all indicated a preference for transcript. The responses and the percent of respondents who chose them are as follows:

20% I prefer transcript, but am willing to review videotape if the parties prefer to avoid transcription cost and delay.

15% I strongly oppose having to review videotape, except that there are occasions when visual or aural aspects of the record are important, so I prefer having videotape available along with transcript.

65% I strongly oppose having to review videotape, and see no point even in having it available, since occasions when review of the videotape might be important are so rare as to be insignificant