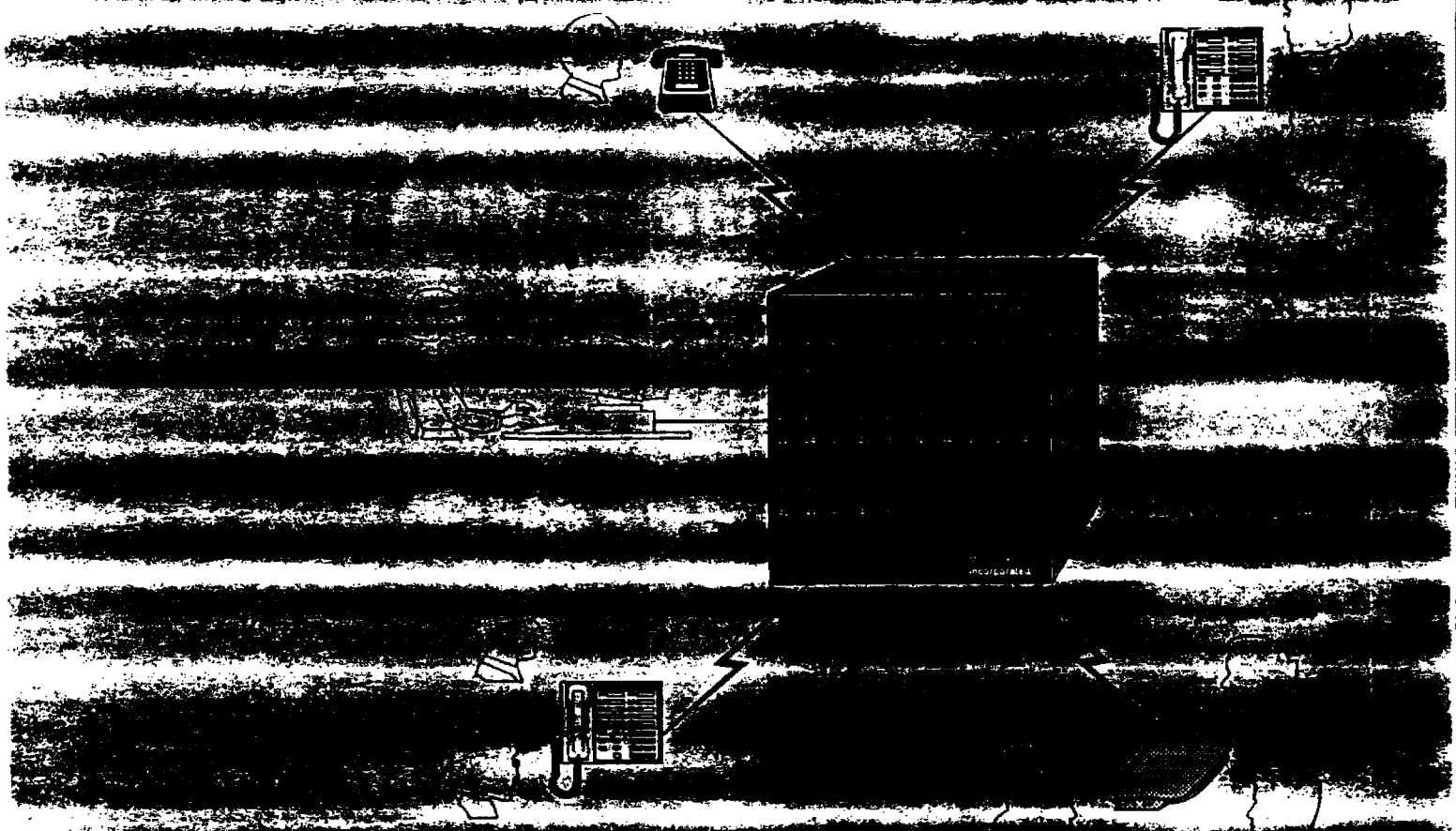
Environmental Protection [illegible] Processing Division April 1994

Office of Administration and Resources Management

EPA Audio Teleconferencing Services

Quick Reference Guide



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CONTENTS

INTRODUCTION

Meetings are an important part of our work at the U.S. Environmental Protection Agency (EPA). The quality of our work is directly related to the effectiveness with which we use meetings to assemble project teams, share information, generate ideas, make decisions, coordinate efforts, and track progress.

EPA provides employees with state-of-the-art audio teleconferencing capabilities to make meetings more convenient, productive, and cost-effective. Audio teleconferencing is both a substitute for and supplement to face-to-face meetings. Agency personnel can use office telephones or specialized speakerphones to participate in voice-only conferences. These conferences can involve dozens of widely dispersed individuals simultaneously, linked by audio teleconferencing systems installed at EPA Headquarters. This growing service supported over 11,000 conferences in 1993.

This guide describes audio teleconferencing facilities, systems, services, and capabilities available to EPA personnel through the Agency's National Data Processing Division (NDPD). It explains how to use audio teleconferencing in your job; how to obtain conferencing equipment and services; how to conduct an audio teleconference; and how to resolve technical problems during a conference call.

NDPD's Telecommunications Branch manages Agency audio teleconferencing systems for the benefit of all EPA personnel nationwide. The Telecommunications Branch is committed to providing Agency personnel with the best possible audio teleconferencing systems, services, and capabilities available.

EPA personnel should read this guide prior to scheduling or participating in an audio teleconference. Conference calls may be scheduled—or technical assistance may be obtained—by calling NDPD Telecommunications staff at (202) 260-CONF (2663). Programs are charged for use of Agency teleconferencing bridges, based on scheduled call duration and number of lines. Please let us know how EPA audio teleconferencing services can best support the way you work.

WHAT IS AUDIO TELECONFERENCING?

Audio teleconferencing, also known as conference calling, is the ability of three or more people to participate in a telephone conversation.

A conference call may be of multipoint or point-to-point configuration, depending on the number of voice terminals participating in the call. Multipoint conference calls connect three or more telephone lines simultaneously, either through customer-owned or carrier-provided telephone switches, or by means of specialized electronic devices known as "teleconferencing bridges." Point-to-point calls connect two voice terminals, one or both of which must be a speakerphone or specialized conferencing unit that allows many people in the same room to listen and speak to the other party. See Exhibit 1 for a typical point-to-point conference configuration.

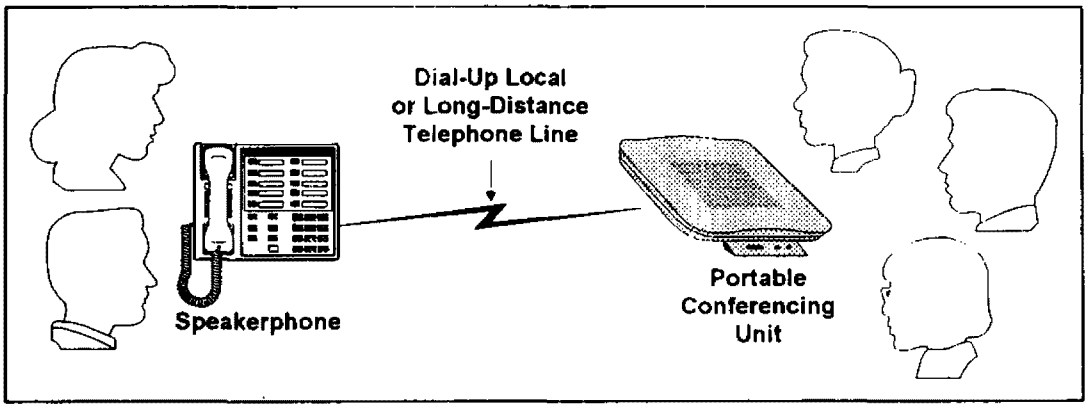


Exhibit 1—Point-to-Point Conference Call with Speakerphone and Portable Conferencing Unit

Different conference calls require different configurations, depending on the number of sites participating, the number of participants at each site, and whether information flows will be interactive or one-way. Exhibit 2 shows a typical multipoint configuration, in which people at four sites confer by means of office telephones connected through a multipoint bridge managed by specially trained system operators. The participants may be located in different cities, different buildings, or simply in different offices in the same building.

For users, accessing a multipoint conference can be as simple as dialing into the teleconferencing bridge at a designated time, a method known as "meet me," or waiting for the system operator to call them up and make the connection manually. On a typical interactive multipoint call, the meeting organizer is the first person on the line, and he or she greets other participants as they join the conference. Once a user is connected into the conference, he or she can begin to talk to other participants.

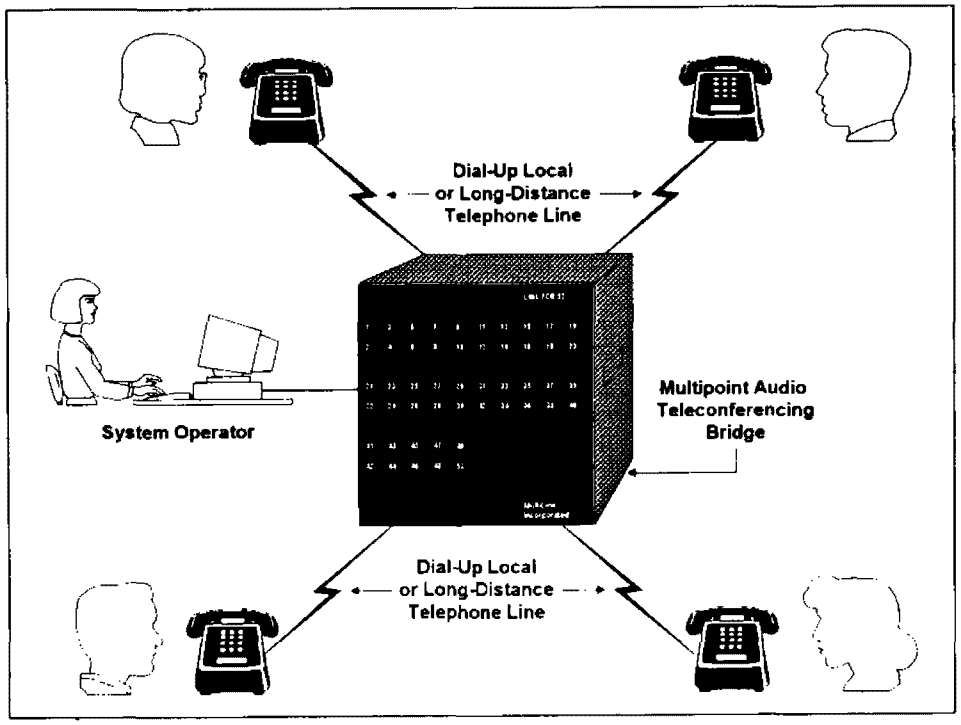


Exhibit 2—Multipoint Bridged Conference Call with Office Telephones

Additional users can be added to a multipoint conference by means of speakerphones or portable conference units at one or more of the sites, as long as they are on one of the scheduled call-in lines. See Exhibit 3 for an example of this configuration.

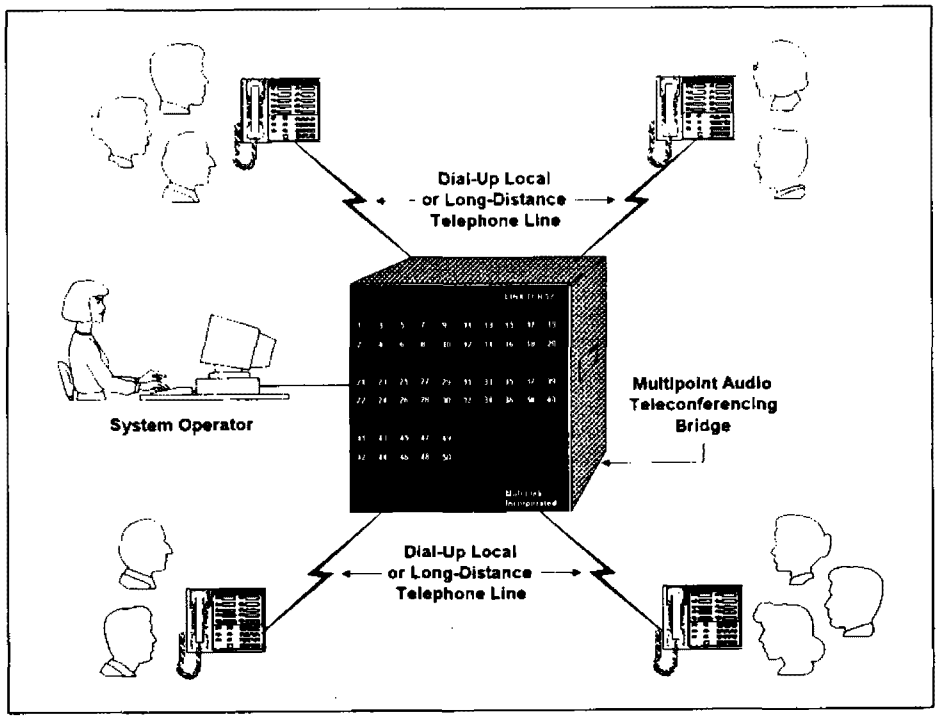


Exhibit 3—Multipoint Bridged Conference Call with Speakerphones

The most elementary form of multipoint conference, the three-way call, is supported by many office telephone systems. Refer to Exhibit 4.

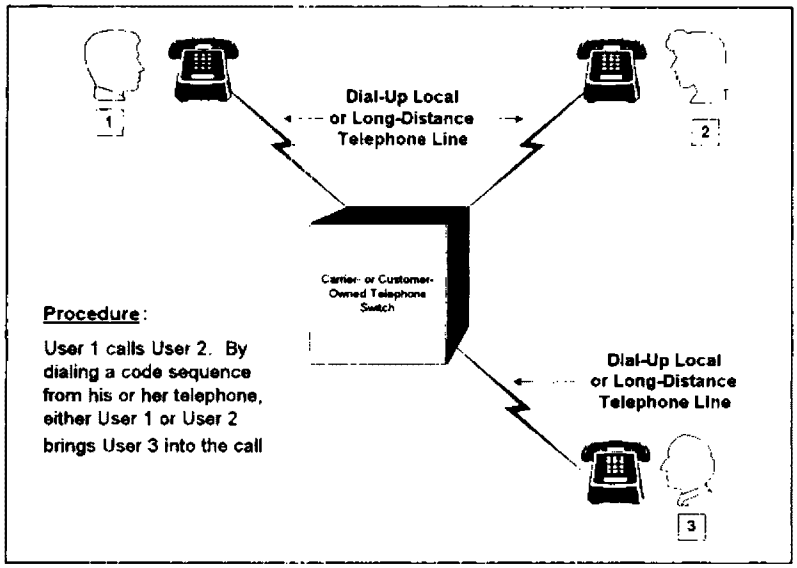


Exhibit 4—Three-Way Conference Through Office Telephone System

Users are able to connect a third party into an existing telephone conversation by dialing key commands from their office phone sets. The capability is supported by premises telephone switches or by common carrier switches, such as the Washington Interagency Telecommunications System (WITS), which also supports six-way calling.

A specialized multipoint call, the telelecture (see Exhibit 5), enables participants to hear the conference leader but not speak to the leader or to each other. The telelecture is best suited to information broadcast applications.

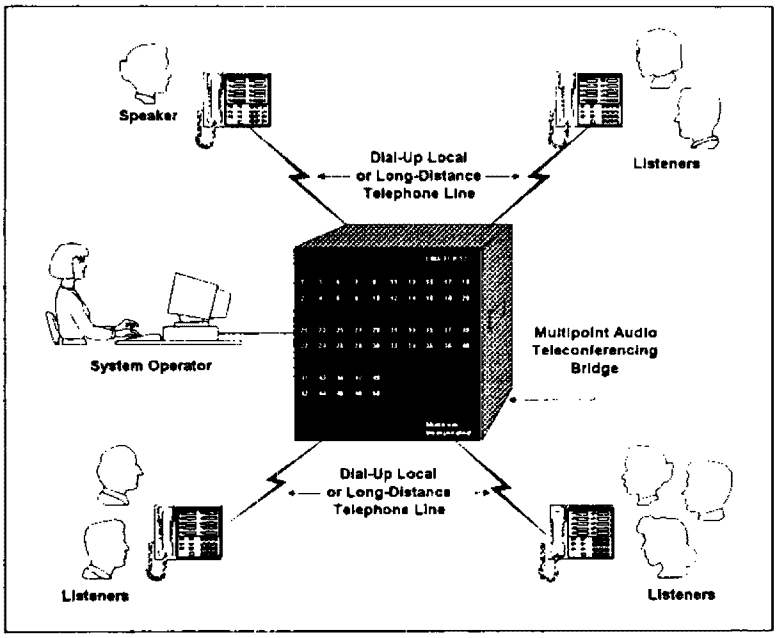
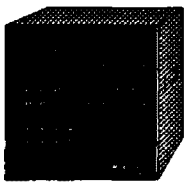
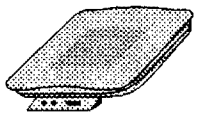
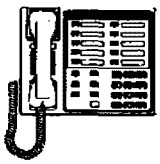


Exhibit 5—Multipoint Telelecture With Speakerphones

WHAT AUDIO TELECONFERENCING FACILITIES AND SERVICES ARE AVAILABLE?

The following table summarizes the audio teleconferencing facilities that are available to EPA personnel. In general, any questions concerning audio teleconferencing services can be directed to the Headquarters Teleconferencing Center at (202) 260-CONF (2663).

FACILITY	DESCRIPTION	AVAILABILITY	HOURS	ORDER POINT OF CONTACT
Teleconferencing Bridges 	Specialized digital devices that enable four or more voice callers to confer at the same time	Installed at EPA Headquarters and available to all EPA employees (programs are charged for bridge usage, based on call duration and number of lines)	Scheduling: Monday-Friday, 8 a.m.-5 p.m. Using service: 24 hours a day, 7 days a week (Unattended conferences on evenings and weekends)	Headquarters Teleconferencing Center (202) 260-CONF (2663)
Portable Conferencing Units (PCUs) 	Specialized speakerphones that enable a group of people in a single room to participate in a phone conversation with (an)other person(s) over normal telephone lines	Can be purchased by Programs at any EPA location Available to Headquarters employees for short-term, no-cost loan	Monday-Friday, 8 a.m.-5 p.m.	Headquarters Teleconferencing Center (202) 260-CONF (2663)
Speakerphones 	Telephones with built-in speakers that enable more than one person to speak and listen at the same time	Available to any user (requires program office purchase)	Not applicable	Telecommunications Customer Service Representative

WHEN SHOULD YOU USE AUDIO TELECONFERENCING?

EPA personnel should consider using audio teleconferencing for most meetings in which it is not possible, practical, or cost-effective for participants to meet face to face. Teleconference participants may be located in different cities, or they may simply be people in the same office who, for whatever reason, cannot be in the same room at the same time. The most important applications are as a substitute for business travel and for coordination among dispersed project team members.

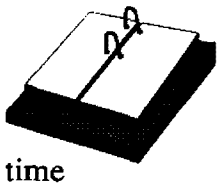
The following matrix describes the particular audio teleconferencing configuration most appropriate to various applications. To determine the configuration most appropriate to your next conference call, identify the questions under "Application" to which you would answer "yes." Checkmarks in the columns corresponding to each question indicate the teleconferencing configurations that might be suitable to your application. Absence of a checkmark means that the corresponding configuration would not be appropriate.

CONFIGURATION OPTIONS / APPLICATION	Point-to-point with speakerphones and/or portable conferencing units (PCUs)	Interactive multipoint with office telephones	Interactive multipoint with speakerphones and/or PCUs	Three-way conference through office telephone system	Multipoint telelecture
Two locations?	✓				
Three or more locations?		✓	✓	✓	✓
More than one person at each location?	✓		✓		✓
Interactive discussions?	✓	✓	✓	✓	
One-way broadcast presentation?					✓
Using speakerphones or portable conferencing units (PCUs)?	✓		✓	✓	✓

HOW DO YOU ARRANGE, ACCESS, AND CONDUCT AN AUDIO TELECONFERENCE?

Successful audio teleconferences require well-prepared leaders who find time in participants' schedules, reserve teleconferencing bridge "ports," and moderate on-line discussions. This section provides practical guidelines for audio teleconferencing leaders in four areas:

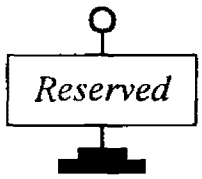
- Finding time in participants' schedules
- Scheduling use of audio teleconferencing facilities
- Accessing and conducting the audio teleconference
- Closing the conference



SCHEDULING PARTICIPANTS

The principal responsibility of the conference leader is to find a date and time acceptable to all participants and for which Agency teleconferencing facilities are available. These steps should be followed:

1. Choose both a preferred and a contingency conference date, time, and duration. The contingency time will be used in case teleconferencing facilities are unavailable at the preferred date and time. The maximum suggested conference duration is 2 hours, since participant attention spans are often shorter than in face-to-face meetings.
2. Designate site leaders and other participants for each location.
3. Check with participants to make sure the preferred and contingency dates and times fit into their schedules.
4. Work out any scheduling conflicts among participants.



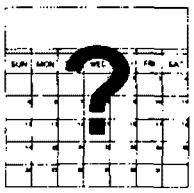
SCHEDULING FACILITIES

Conference leaders must contact the Teleconferencing Center at (202) 260-CONF (2663) to reserve use of the multipoint teleconferencing bridge and/or portable conferencing units (PCUs) for the preferred dates and times. To reserve facilities for your next conference call, follow these steps:

1. Schedule the conference as far in advance of the planned date and time as possible.

   Teleconference operators are responsible for enforcing scheduling policies and maintaining the checkout list for PCUs. Special arrangements can be made for conferences needed on a frequent or recurring basis by contacting the Teleconferencing Manager at (202) 260-CONF (2663). You may have difficulty reserving teleconferencing facilities on Tuesdays, Wednesdays, and Thursdays, because these are the busiest days for conference calling at EPA.

2. Call the Headquarters teleconference scheduler to determine whether the bridge ports and/or PCUs required are available at the preferred or contingency date and time.



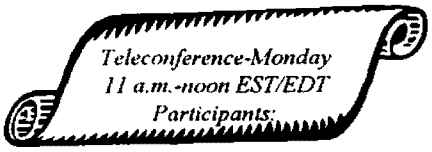
All conference calls and PCUs are scheduled on a first-come, first-served basis, Monday-Friday, 8 a.m.-5 p.m. (Eastern Time Zone). Audio teleconferencing service is available to any EPA employee in the U.S., including Puerto Rico and the Virgin Islands, for official Agency business only. You will need special authorization from the EPA Telecommunications staff to use outside teleconference services, based upon the Telecommunications staff's determination that EPA teleconferencing systems cannot support the time slots and/or number of lines required for a particular conference. EPA facilities should satisfy most audio teleconferencing requirements for Headquarters, regional, and field site personnel, at the least cost to the Government.

3. Provide the following information to the Headquarters teleconference scheduler:

- Account number your program has established with the Washington Telecommunications Center to pay for telecommunications services.
- Conference leader's name, telephone number, and location.
- Number of lines required. Participants calling the bridge from two separate locations will require two lines, while participants calling from the same room using a shared speakerphone will require only one line.
- Starting and ending times of the conference (Eastern Time Zone). Reservations are made in 30-minute increments. Keep in mind the needs of other conference facility users, and schedule only the amount of time you will actually need. Scheduling 2 hours for a 45-minute conference prevents someone else from using the teleconferencing bridge for at least 1 hour.
- Whether a PCU is needed for Headquarters participants.
- If a PCU is needed, the type of phone service—analog, ISDN, or Merlin—to which the PCU will be connected.
- Whether sensitive information will be discussed. Since teleconferencing operators, who are EPA contractors, monitor teleconferences for quality assurance purposes, they must be informed if the conference is expected to include sensitive information, to ensure that the conference is not monitored by contractor staff.

4. Notify participants of the date and time for which the audio teleconference has been scheduled. The meeting notice should include the following information:

- Beginning and ending time of the conference (including the time zone).
- Locations, names, and titles of all participants.



- Procedures for accessing the teleconference, as well as the Headquarters Teleconferencing Center hotline number, (202) 260-2001. Participants may call this number if they encounter technical troubles. Parties calling on commercial lines will pay the cost of their call. Under no circumstances can the teleconference operator accept collect calls. Under special circumstances, the teleconference operator can dial participants to connect them with a conference. However, operator-initiated connections add to the length of the teleconference due to the time it takes to reach these parties.

- Agenda containing specific goals and objectives, and any supplementary documents (e.g., reports for group discussion).

5. Provide participants with the telephone number, furnished by the Headquarters teleconference scheduler, to call at the scheduled time to join the audio teleconference. Please notify the teleconference scheduler and all participants promptly if a conference has been cancelled. **Important**: All reservations for audio teleconferences will incur a charge, unless the reservation is cancelled before 8 a.m. on the day of the scheduled conference. The full charge will be applied for all reserved lines, regardless of whether all lines are actually used.

ACCESSING AND CONDUCTING THE CONFERENCE

Conference leaders can ensure that multipoint conferences run smoothly by following these steps, some of which are technical in nature, while others are simply common-sense rules that apply equally well to face-to-face meetings:

1. If a PCU has been reserved, the unit should be picked up from the Headquarters Teleconferencing Center at least one-half hour prior to the scheduled conference, when this is possible. Teleconferencing staff will provide users with installation instructions at pickup time. PCUs can be installed in conference rooms in the Waterside Mall complex or other facilities. **Important**: If the PCU is to be connected to an ISDN or Merlin phone line, it requires a special adapter; Teleconferencing Center staff will provide the correct adapter when the PCU is picked up.

2. Dial the teleconferencing bridge at the appointed date and time, in order to be the first party on the call and to greet other participants as they join. Allow a few rings for the system to answer the call. If necessary, dial (202) 260-2001 for assistance in accessing the teleconferencing bridge.

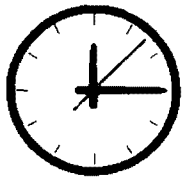
Never dial the teleconferencing bridge before the scheduled starting time or without prior confirmation, since misuse of this line could interrupt ongoing meetings or delay previously scheduled conference calls.

3. Encourage small talk among participants before the main portion of the conference. Small talk dispels nervousness among participants who feel uncomfortable talking or are not experienced with audio teleconferencing technology. It also establishes name/voice recognition among participants and provides the leader with an opportunity to coach participants in proper conference call techniques and etiquette. Participants should be instructed to emphasize verbal interaction, speak slightly louder than normal, speak into the microphone, and use clear diction.

4. Start the conference on time, and follow these tips to maximize the productivity of discussions:

   - Conduct a formal roll call and ask participants to introduce themselves.
   - Review the conference agenda.
   - Address participants by name.
   - Ensure that participants identify themselves before speaking.
   - Keep the conference moving toward fulfillment of concrete goals in accordance with the meeting agenda.

CLOSING THE CONFERENCE



Conference leaders can bring the on-line discussions to a graceful, orderly close by following these steps:

1. Begin to close the discussion early enough so that the conference can come to an orderly finish.
2. At the end of the conference, summarize the discussion and clarify decisions or conclusions reached. Identify issues for the next conference, if applicable. Allow a few minutes for general conversation before participants hang up. Thank participants and close the meeting. End the conference promptly. Conferences that exceed their allotted duration will be terminated by operators.
3. Make sure that the conference room is left neat for the next meeting.
4. If PCUs were used, repack and return them promptly.

HOW DO YOU RESOLVE TECHNICAL PROBLEMS DURING A CONFERENCE?

The best way to avoid technical problems during an audio teleconference is to follow these guidelines:

- Make sure that the conferencing area is free from foreign noise, such as heating/air conditioning exhaust and corridor traffic.
- Conduct audio conferences in EPA-designated conference rooms when possible. Designated conference rooms are less likely (than office space) to have acoustical problems that may interfere with conference calls.
- Avoid using portable conferencing units (PCUs) in large conference areas, such as auditoriums, in conjunction with a public address system, near heating/air conditioning exhaust, or near other noise sources. PCUs are designed for use by 6-10 conferees seated around a 4- by 8-foot conference table.

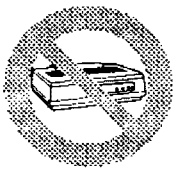
The technical problems presented below are common to most audio teleconferencing systems and may be encountered by EPA personnel using Agency facilities. The source of each problem is presented, along with some simple solutions. If these solutions do not resolve the problem, call the Teleconferencing Center hotline at (202) 260-2001 during your conference for further assistance.

SPEECH CLIPPED OFF

Source: Audio teleconferencing bridges have internal circuitry that switches from one speaker or location to another, selecting the loudest source of sound. When speakers interrupt one another, the system microphone may not be able to switch fast enough to catch an entire phrase, resulting in speech that is "clipped" off or only partially heard by teleconference listeners. Speech clipping also occurs with speakerphones. New audio teleconferencing technology—such as that incorporated into EPA's Multilink bridges—has reduced, but not completely eliminated, speech clipping.

Solution: Participants should speak in turns and pause momentarily after speaking, providing others with a cue to begin speaking.

BACKGROUND NOISE



Source: Background noise degrades the overall sound quality of the audio conference. If excessive, it can interrupt the conference by locking on a location where no one is speaking.

Solution: Participants should maintain a quiet conference environment by eliminating extraneous noises, such as side conversations, paper shuffling, table tapping, excessive coughing, operation of typewriters and printers, and telephones. PCUs or speakerphones should be muted when no one is speaking.

POOR QUALITY TELECOMMUNICATIONS CIRCUITS

Solution: Participants encountering a poor connection should hang up immediately and redial the bridge until an acceptable connection is made. When using speakerphones, participants should dial the bridge using the handset, not the speakerphone. Line noise is more apparent if the handset is used to dial the bridge initially. After an adequate connection is made, the participant may then switch to the speakerphone.

If line problems occur during a conference call, notify the teleconference operator by dialing "* 0" (star zero) on your touchtone phone. Be sure that the telephone's handset is not in its cradle and that you hold the zero button down for 1 or 2 full seconds. This action alerts the teleconferencing operator that there is a technical problem. The operator will access the conference to ask who needs assistance. The operator can place the affected participants on hold and consult privately with them to help identify the problem and implement a solution.

DISCONNECTIONS

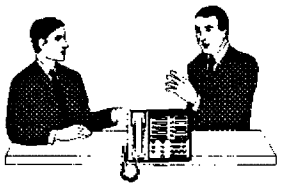
Source: Longer phone conversations have a greater chance of being disconnected, for a variety of reasons.

Solution: If disconnection occurs during a conference call, participants should simply redial the bridge to be reconnected.

HOW DO YOU DETERMINE THE MOST APPROPRIATE TERMINAL OR FACILITY?

Voice terminal equipment is the EPA user's access point to audio teleconferencing services, so program offices should consider their conferencing requirements when acquiring or upgrading their telephone systems. Many users require nothing more elaborate than standard office telephones to access multipoint conferences on the Agency's bridges. Headquarters program office staff can check out the Agency's portable conferencing units (PCUs) on an as-needed basis.

However, program offices and personnel who are frequent users of audio teleconferencing should consider acquiring their own specialized terminal equipment and conferencing facilities. Program offices should base their conferencing terminal and facilities acquisitions on the size of groups involved in conference calls:



Very small groups (2-3 people per site): The most appropriate conferencing terminals for very small groups are voice sets with built-in speakerphones. However, speakerphones can deliver booming sounds, echo-chamber voices, and occasionally, shrill feedback tones. They can also stifle spontaneity by permitting only one person to speak at a time. The microphone in most speakerphones requires speakers to sit very close to the unit.

Small groups (4-8 people per site): Small groups require 12- by 18-foot conference rooms that have been equipped with PCUs and have low ambient noise levels. PCUs should have digital signal processing technology that cancels out conflicting echo/feedback signals and provides two-way, interactive audio teleconferencing. The Headquarters Teleconferencing Center has several PCUs for loan to conference participants.

Medium groups (9-12 people per site): Medium groups require 18- by 24-foot conference rooms with PCUs, as well as special acoustical treatment. For best sound quality, conference participants should be close to the conferencing unit.

Large groups (13-30 per site): Large groups require 24- by 40-foot conference rooms with permanently installed teleconferencing units and special acoustical treatment. Such rooms require customized design, which should be coordinated with staff in the Washington Telecommunications Center.

Very large groups (31 and above per site): Very large groups require use of an auditorium that has been custom-designed for audio teleconferencing. PCUs such as the VoicePoint and Soundstation should not be used in auditoriums in conjunction with public address systems.

Please contact the Headquarters Teleconferencing Center at (202) 260-2663, or the Headquarters Customer Service Supervisor at (202) 260-7478 for further information and for assistance in identifying the teleconferencing equipment that best meets your needs.

GLOSSARY OF AUDIO TELECONFERENCING TERMS

Audio teleconferencing bridge: A specialized digital electronic device that enables four or more voice telephone callers to confer simultaneously

Audio teleconferencing: Telephonic communications between multiple groups (two or more), and/or multiple people (three or more)

Clipping: An audio teleconference problem in which spoken phrases are cut off or only partially heard by conference participants

Conference leader: The person who directs a teleconference and is equivalent to a chairperson in a face-to-face meeting

Conference scheduler: The Telecommunications Branch staff member who reserves use of EPA's audio teleconferencing bridges and portable conferencing units for authorized EPA users

"Meet me": An audio teleconferencing system feature that allows conference participants to dial directly into a teleconference without operator assistance

Multipoint: The capability of four or more separately located people or groups of people to carry on a voice telephone conversation by means of an electronic audio teleconferencing bridge

Point-to-point: The capability of two or more groups of people in different locations to communicate with a speakerphone or portable conferencing unit

Portable conferencing unit (PCU): A specialized speakerphone that may be installed in any room with a standard touchtone single-line phone and an electrical outlet

Speakerphone: A voice terminal that amplifies telephone conversations through a loudspeaker and picks up conversations with a microphone

Three-way conference: The capability of an individual or group to bring a third party or group into an existing telephone conversation

Telelecture: A one-way multipoint conference call that places conference participants except the leader in receive-only mode

IMPORTANT NUMBERS

Headquarters Teleconferencing Center—Scheduling and Information ..... (202) 260-CONF (2663)

Headquarters Teleconferencing Center—Hotline ..... (202) 260-2001

NDPD Washington Telecommunications Center ..... (202) 260-6778

NOTES