How to record narration audio using the Tascam DR-70D with phantom-powered AKG studio microphone

This document explains a method of performing audio recording of the human voice for narration, audilogical testing, books on tape, etc.

Sections of this document

Check out Equipment & Record your Audio
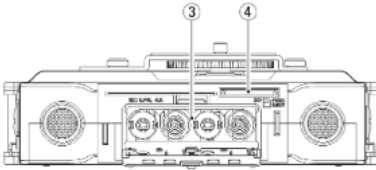
Checkout Equipment

Check out the following equipment from CMA 3.104 equipment checkout: • Microphone Stand • AKG Perception 200 Studio Mic Kit (includes shockmount, windscreen) • Tascam DR-70D Field Recorder Kit (includes headphones, recorder, (4) rechargeable AA batteries, media card, power supply) • 10' XLR microphone cable	
Equipment checkout reservations can be made online here: http://checkout.communication.utexas.edu	**What equipment checkout location would you like to visit?** BMC CMA RTF Equipment Reservations

Set up Equipment

Insert media card on rear of Tascam DR-70D recorder (#4 at right).

For this workflow, it is recommended that you use the USB power supply and **do not use batteries** so you don't have to worry about battery life. If you must use batteries, insert them on the rear of the recorder.
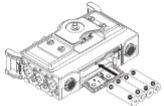

③ **Battery compartment**
Install batteries (4 AA) in this compartment to power the unit. (See "Using AA batteries" on page 12.)

④ **SD card slot**
Insert an SD card here.

Using AA batteries
Open the front cover and battery compartment cover. Install 4 AA batteries in the compartment with the ⊕ and ⊖ marks as shown. Then, close the battery compartment cover and front cover.

When using AA batteries, set the type of battery in order to accurately show the amount of power remaining and allow the unit to accurately determine whether power is available for proper operation. (See "Setting the battery type" on page 34.)

CAUTION
• This unit cannot recharge Ni-MH AA batteries. Use a commercially available recharger.
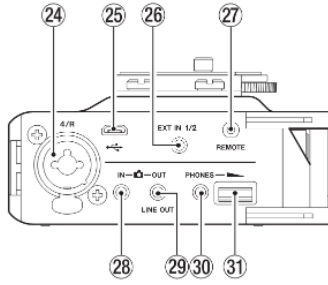
NOTE
A great amount of power is required to provide phantom power to a condenser microphone. If you use a condenser microphone while running the unit on AA batteries (NiMH rechargeable or alkaline dry cell), the operation time will be shortened.
If you need to operate the unit for a long time, use a TASCAM PS-P515U AC adapter
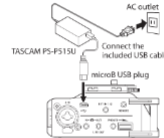
On left side of the Tascam DR-70D, connect the USB power supply to the recorder (#25 at right).

Connect headphones to the recorder (#30 at right).

Using an AC adapter
Connect the USB cable to the TASCAM PS-P515U AC adapter and the unit's USB port as shown in the illustration.

NOTE
When both batteries are installed and the AC adapter is connected, power will be supplied from the AC adapter.

CAUTION
• Never use any adapter other than the designated TASCAM PS-P515U AC adapter. Use of a different adapter could cause malfunction, fire or electric shock.
• Noise may occur when recording with a microphone if the unit is too close to the AC adapter. In such a case, keep sufficient distance between the AC adapter and the unit.

On the right side of the recorder, connect the XLR mic cable to input 1 (#21 at right).	
Set up microphone stand. Mount microphone spider suspension mount to stand.	
Mount microphone to suspension. Set the mic into the suspension. Continue to hold the microphone while screwing the mounting ring into the bottom of the mic.	
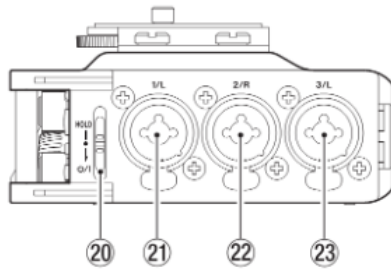
Connect XLR cable to microphone.	
Install pop filter on microphone.	

Configure Tascam DR-70D Recorder

Turn on Recorder

On the right side of the recorder, slide the **HOLD/⏻/ |** (#20 at right) toward ⏻ **/ |** until the start-up screen appears.

Start-up Screen

To turn the unit off, slide the **HOLD/⏻/ |** (#20 at right) toward ⏻ **/ |** until the recorder powers down.

If you are using the USB power supply, the recorder will present this USB select screen asking you want to use the USB connection for power or data storage:

Since we're using it for power, turn the DATA dial (# 6 at right) to select "**BUS POWER**" then press the DATA dial to select it.

If the recorder has been stored without batteries, it may prompt you for the date & time.
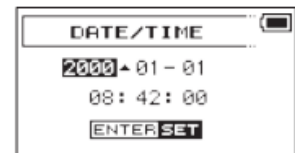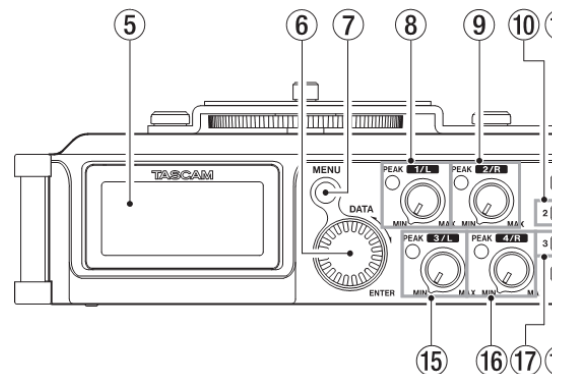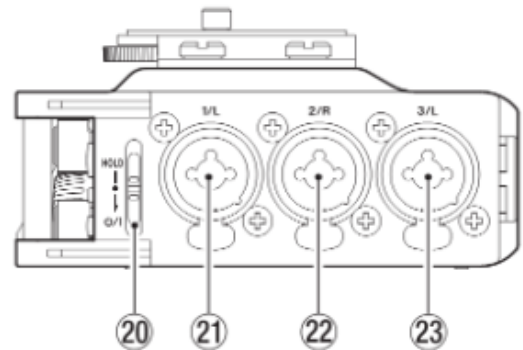
Use the **DATA** dial or the **4/|◀◀** and **3/▶** move the cursor (highlighted area), and t to change the value.

Press the **MENU** button to confirm the se the OTHERS screen.

If the SD card is new or has been formatted for another device, the recorder may display an error message upon startup.

Press the DATA dial to start formatting.

Remember, formatting will erase all data on the card. If this is a card that you've previously used in your digital camera, etc, be sure you have a backup before you format it.
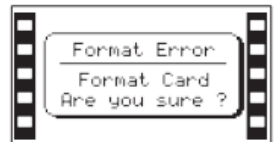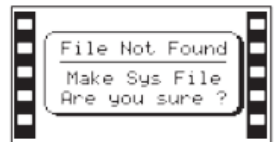
In order to use an SD card in this unit, you m

1. Confirm that an SD card is loaded and tu
2. A message like one of the following app card or a card formatted by another dev unit.

```
Format Error
Format Card
Are you sure ?
```
SD/SDHC card

```
File Not Found
Make Sys File
Are you sure ?
```
SDXC card

3. Press the **DATA** dial to start formatting.

CAUTION

Formatting a card erases all the data or

4. When formatting ends, the Home Scree also reformat a card in this unit at any ti

CAUTION

When formatting a card, the unit shoul AC power supplied by a TASCAM PS-P51 separately), USB bus power from a com with sufficient remaining power.

The AKG studio microphone requires phantom power in order to operate.

If the Tascam DR-70D recorder previously had phantom power engaged, upon startup the recorder will prompt you if you still wish it to be turned on.

Press the DATA dial to confirm yes, phantom power should be engaged.

Note that the recorder will ask you separately for any of the 4 channels which previously had phantom engaged so you might see a screen like this as many as 4 times upon starting the recorder.
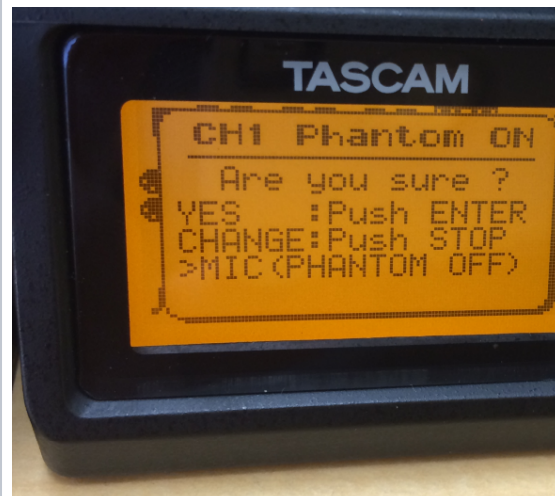
Adjust Basic Menu Settings

Press Menu then turn the DATA dial to select "**BASIC**" then press the DATA dial to select this submenu.

Set Ch 1 as follows:

- Record: On
- Pan: Center
- Gain: Mid
- Input 1/2: XLR/TRS

The Ch 2 - 4 settings don't matter for this workflow since we aren't using those inputs.

Press Menu to return to the submenu list.

note: if you see Wide instead of Pan in this menu, turn off MS Mode 1/2 in the "**MIC"** submenu.

Adjust Monitor Menu Settings

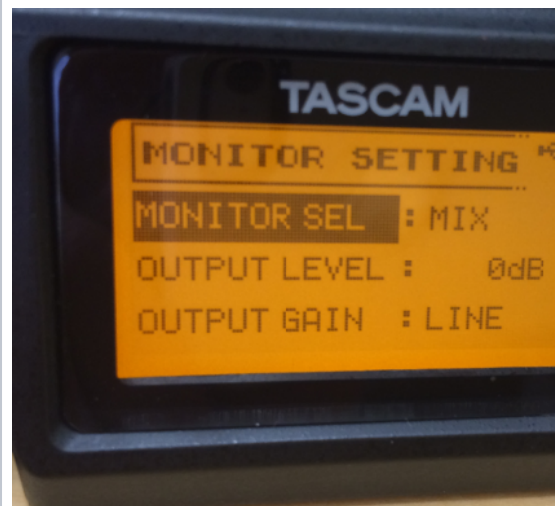From the main menu's submenu list, turn the DATA dial to select "**MONITOR**" then press the DATA dial to select this submenu.

- Set MONITOR SEL to MIX.

The remaining options on this menu don't matter for this workflow.

Press Menu to return to the submenu list.

Adjust Input Menu Settings

From the main menu's submenu list, turn the DATA dial to select "**INPUT**" then press the DATA dial to select this submenu.

Set Ch 1 as follows:

- Input Gain: Mic + Phantom
- Limiter: Off
- LowCut: Off
- Delay: Ref
- Phase: Off

The Ch 2 - 4 settings don't matter for this workflow since we aren't using those inputs.

Setting the input gain option to Mic+Phantom is an odd user experience. When you press the DATA dial to select Input Gain, you have 3 choices:

- Line
- Mic
- Mic + Phantom

The first 2 options (LIne & Mic) behave as you would expect when rolling the DATA dial - rolling the dial changes the text which is displayed. However, when you roll the DATA dial to the 3rd option, prior to seeing any text, the screen immediately pops up a warning page confirming that you want to turn on Phantom power. Since you never saw the text "Mic + Phantom" appear as an option, this popup can be confusing.

When in the Input Menu, the proper method of setting Input Gain to "Mic + Phantom" is to press the DATA dial to select Input Gain, then roll the DATA dial clockwise several clicks until the "Ch1 Phantom On" popup appears. Press the DATA dial to confirm that yes, phantom power should be on. Upon confirming Yes, you will be returned to the Input Menu.

Press Menu to return to the submenu list.

Adjust Record Menu Settings

From the main menu's submenu list, turn the DATA dial to select "**RECORD**" then press the DATA dial to select this submenu.

- Set File Type: Stereo
- Set Format: WAV 16bit
- Set Sample Rate: 44.1k
- Set Dual Rec: Off

While you may be tempted to set the recording quality to the highest possible settings, such resolution is not typically required for this workflow. These settings are "CD quality" which is acceptable for most needs, keeps file sizes relatively small, and guarantees compatibility with all research software with which these files may be used.

Press Menu to return to the submenu list.

At CD quality, a stereo recording consumes about 600 MB (.6 TB) per hour. Below are the storage capacities for the Tascam DR-70D recorder (CD quality is highlighted in yellow):

Recording duration

The table below shows maximum recording times (in hours: minutes) by file format on SD/SDHC/SDXC cards of different capacities.

File format (recording setting)		SD/SDHC/SDXC card capacity			
		1 GB	4 GB	32 GB	128 GB
WAV/BWF 16-bit (STEREO)	44.1kHz	1:41	6:44	53:52	201:35
	48kHz	1:33	6:12	49:36	185:13
	96kHz	00:46	3:06	24:48	92:36
WAV/BWF 24-bit (STEREO)	44.1kHz	1:07	4:30	35:44	134:24
	48kHz	1:02	4:08	33:04	123:28
	96kHz	00:31	2:04	16:32	61:44

- The recording times shown above are estimates. They might differ depending on the SD/SDHC/SDXC card in use.
- The recording times shown above are not continuous recording times, but rather they are the total possible recording times for the SD/SDHC/SDXC card.
- When using MONO (single channel) recording, the maximum recording times will be about twice the figures above.
- When using 4-channel recording, the maximum recording time will be about half the figures above.

No adjustments are necessary on the "**SLATE**" submenu

Adjust Mic Menu Settings

From the main menu's submenu list, turn the DATA dial to select "**MIC**" then press the DATA dial to select this submenu.

- Set MS Mode 1/2: Off
- Set MS Mode 3/4: Off
- Set Phantom Voltage: 48v

Changing the Phantom Voltage from 24v to 48v will prompt you to confirm the change. Once confirmed, the recorder will ask you separately to confirm that phantom should be sent to any of the 4 channels which previously had phantom engaged so you might see a screen like this as many as 4 times upon starting the recorder.

When prompted, phantom SHOULD be engaged for Ch 1. The remaining channels don't matter for this workflow.

Note that technically, the AKG studio microphone will work with 24v or 48v phantom power. 48v is preferred as it will provide slightly improved dynamic range and better SPL capacity. This shouldn't matter for recording voice, but would if you were recording drums or explosions.

Press Menu to return to the submenu list.

No adjustments are necessary on the "**BROWSE**" nor "**OTHERS**" submenus

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Press Menu again to exit the menus and return to the default (home) recording screen.

Adjust & Test Microphone

Set the bass cut switch to rolled-off and the pad to 0dB

The front of the mic is the side with the AKG logo. Place your mouth about 5 inches from the front of the mic and speak into it.

NEVER BLOW INTO THE MIC - you can destroy the element!

To help reduce plosives (breath pops from "P's" & "Th's" in your speech), try speaking slightly across the front of the mic rather than directly into the front element.

FRONT

Adjust Levels

Watch the levels on the recorder and adjust the Ch 1 knob. Try to get the levels to average around the mark which is under the "C" in TASCAM.
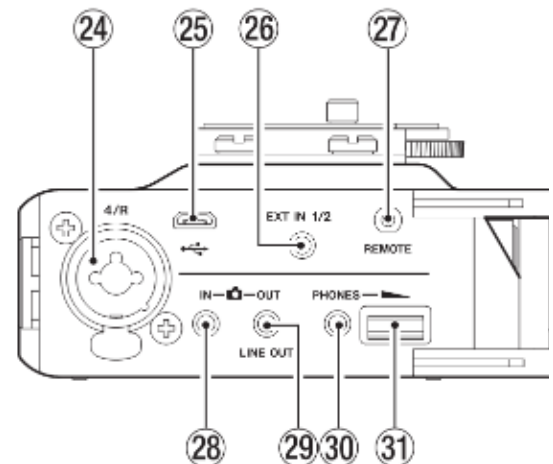
Make levels average around this mark

Adjust Headphones

Put on your headphones and adjust the headphone volume (#31 at right) to a comfortable volume.

It is important that you use the headphones the entire time you are recording to ensure everything is working properly.

Record your audio

Press the REC button to begin recording.

Confirm that the REC light is lit and that the recording time is progressing when recording.

Press the REC button again to stop recording. Press it again to begin a new recording in a new file.

It is best to record long sessions into a few files rather than repeatedly starting & stopping the recording. Storage space is cheap – just let the recorder run. This will make editing easier and makes it less likely that you fail to remember to restart the recorder.

Watch your levels. If you see the meter hit the right of the meter or you see the PEAK light flashing, turn down the Ch 1 gain knob and start your recording over.

Don't be afraid to leave yourself verbal notes like "that was pretty good, but I'm going to try it again a little bit faster".

Confirm recording time is progressing when recording
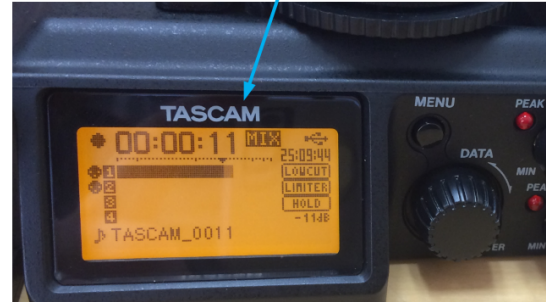
Watch levels. If they hit the right of the meter, turn down your Ch1 gain knob and start over.
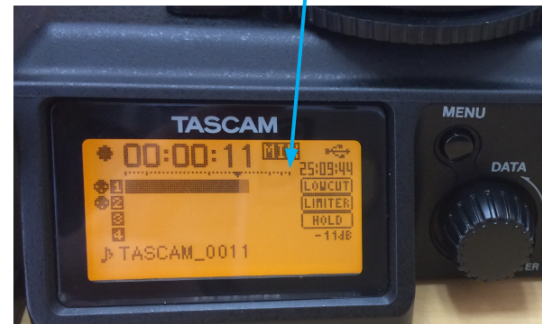
Back up your data

After you are finished recording, copy your files to a fileserver location, USB stick, or portable harddrive.

Connect the recorder to your computer. The recorder will present this USB select screen asking you want to use the USB connection for power or data storage:

Since we want to use it to transfer files, turn the DATA dial (# 6 at right) to select "**STORAGE**" then press the DATA dial to select it.

Click the DR-70D drive on your computer screen and then navigate to the Music folder. Copy the files from this folder to your backup destination.

If you see identically sized files suffixed with 12 and 34, you only need to copy the file which ends with 12 (the recording from inputs 1 & 2). The other file is a recording from inputs 3 & 4 and in this workflow does not contain any audio.

Connect the included USB cable

microB USB plug

Name	Date modified	Type	Size
TASCAM_0011S12.wav	4/4/2016 12:59 PM	VLC media file (.w...	20,035 KB
TASCAM_0011S34.wav	4/4/2016 12:59 PM	VLC media file (.w...	20,035 KB

Computer ▸ DR-70D (H:) ▸ MUSIC

Share with ▾   Burn   New folder